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IFHE
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Editorial

I am pleased to welcome a new member to the *International Journal of Home Economics* Editorial Board:

Dr Melina Solaki, Secondary teacher, Greece

Dr Melina Solaki works as a secondary education teacher. She holds a Bachelor's degree in Home Economics, a Master's degree in Local Development, and her PhD is in the Economics of Education, School of Environment, Geography and Applied Economics, Department of Economics; Sustainable Development (former Department of Home Economics and Ecology, Harokopio University, Greece.

She is a founder member of the Hellenic Scientific Institute Economics of Education; Life Long Learning of Research; Innovation INOEK in Greece and a member of the National Centre for Public Administration and Local Government Trainers Registry. Her academic activities involve assessment of last year students' practice at the Harokopio University while she is an active reviewer for National and International Journals.

A list of her publications is available on the ResearchGate and Google Scholar

ResearchGate: https://www.researchgate.net/profile/Melina-I-Solaki

Google Scholar: https://scholar.google.com.au/citations?user=7eBfvLMAAAAJ&hl=en

Research interests focus on

1. Economics
2. Education
3. Teaching
4. Adult Education
5. Economic growth

Welcome to the Board, Melina.

Professor Donna Pendergast
Editor, IJHE

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Call for Papers—Special Issue
Decolonising of the Home Economics Profession

Papers due 21 March 2022

Home Economics education has been implicated in the colonisation of First Nations people. In Australia, this can be seen in the training of Aboriginal girls and women to undertake housework for white families, and in Canadian life in Residential Schools, required labour to clean and cook for those living there. This domestic labour was freely taken by settlers with little concern for the impact of child labour or indentured servitude on those who were forced into unwaged and unfree labour (Giancarlo, 2020; Host & Milroy, 2001).

This is a difficult history for the profession to acknowledge given one of the essential dimensions of home economics is "to take critical/ transformative/ emancipatory action to enhance wellbeing and to advocate for individuals, families and communities at all levels and sectors of society." International Federation for Home Economics (IFHE, 2008, n.p.). This statement does not just apply to those who are racially privileged so there is a need to not only recognise what has gone before but to also look to practices that decolonise and act in more inclusive ways that are genuinely about every individual, family, and community.

As a global profession, we can acknowledge that there are multiple ways of knowing (Smith, 2016). That there is more than one perspective to inform our work with particular attention being given to our local context. As Smith (2016, p. 51) argues "Challenging current ethnocentric beliefs and attempting to see the story from an Indigenous perspective may allow for holistic learning to take place." Holistic, interdisciplinary practices are not a new concept within home economics. However, if we are to claim to be working for, and with, families globally, can we reconcile our efforts to decolonise our educational practices in an inherently colonial project (Martin et al., 2020)?

Focused on the decolonising of the home economics profession and how this can be seen in our work, invited papers may focus on:

- Applying Indigenous and decolonizing pedagogies to a home economics curriculum

- Decolonizing approaches to project-based learning

- Connecting to local and indigenous home economics practices

- First Nation people seeing themselves in the home economics curriculum

- Becoming an Ally through Home Economics practice

Other relevant themes are welcome.

This call for papers is an invitation to researchers, scholars, and authors in the field of home economics to submit their original and extended research to publish in this international journal. All submitted papers will be peer-reviewed and published in an online format

Advice for authors, including forms to be completed and submitted with the paper for consideration, can be found at: https://www.ifhe.org/ejournal/author-information

Guest Editor for this Special Issue is Associate Professor Kerry Renwick, Department of Curriculum and Pedagogy, University of British Columbia.

For all enquiries regarding this Special Issue please contact the Guest Editor at the following email address: kerry.renwick@ubc.ca

Final papers are to be submitted to the IJHE email address, clearly stating they are for consideration for the Special Issue Decolonising Home Economics at: **intjournalhomeeconomics@gmail.com**

Papers received by the due date will enter a double-blind peer-review process.

Due date: March 21, 2022

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Food Literacy in Australian Secondary Schools—Views of Young Adults, Parents, and Teachers

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Abstract

Renewed interest in secondary school food and nutrition education has highlighted the need to determine the food knowledge and skills important to include in the secondary school curriculum. This study explores the views of home economics teachers, young adults and parents of adolescents about the food knowledge and skills that should be included in secondary school food education programs. Semi-structured interviews were conducted in 2014-2016 and were audio-recorded and transcribed verbatim. Nine key themes were identified. Four main themes are presented: practical cooking skills, planning and resource management, nutrition and healthy eating and consumer skills. Overall, these themes were important among the three groups, although there were differences between groups for some of the more specific skills. Teachers highlighted the importance of basic food preparation and cooking skills, modifying and adapting recipes, and emphasising more technical skills. Understanding food labels and food advertising and marketing were mentioned more by the young adults and parents, as well as budgeting skills for parents. Teachers believed that only basic nutrition and healthy eating concepts were required, while parents felt that it should be quite detailed. These findings will help to inform the development of an ideal food curriculum that is relevant within the current foodscape.

KEYWORDS: FOOD EDUCATION; CURRICULUM; FOOD LITERACY; HOME ECONOMICS; COOKING SKILLS; SECONDARY SCHOOL; QUALITATIVE

Introduction

Poor food choices and eating behaviours are key determinants of overweight and obesity, as well as for several chronic diseases including cardiovascular disease, Type 2 diabetes, and some forms of cancer (Australian Institute of Health and Welfare, 2012, 2019). The development of healthy eating habits is largely dependent on the life skills developed throughout childhood and adolescence (Hawkes et al., 2015). In the past, most adolescents learnt their cooking skills from their mothers (Caraher et al., 1999; Lavelle et al., 2019). However, with the number of dual-income families increasing significantly over the last few decades (Australian Bureau of Statistics, 2011; Hayes et al., 2010), perceived lack of time (Jabs & Devine, 2006), and reliance on pre-prepared foods (Bava et al., 2008), many parents do not spend as much time teaching their children important food and other life skills (Lavelle et al., 2019; Lichtenstein & Ludwig, 2010; Short, 2003). Furthermore, many parents themselves are practising cooking skills less frequently (McCloat et al., 2017; Soliah et al., 2012), relying more on convenience and pre-packaged foods (Bava et al., 2008; Lichtenstein & Ludwig, 2010).

There has been renewed interest in food education and food literacy in recent years (Vidgen & Gallegos, 2014). Schools provide a useful setting for food skills education (Bucher Della Torre et al.,

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2010; Story et al., 2009). Having continuous contact with students, school food and nutrition curricula has the potential to effectively communicate healthy eating messages and to reach all adolescents and their families (Boddy et al., 2019; Burton & Worsley, 2014; Lloyd et al., 2011). However, there is currently no clear syllabus regarding food education within the Australian secondary curriculum (Pendergast et al., 2011), meaning that there is a lack of consistency in the content being taught across different schools (Home Economics Institute of Australia, 2010). In Australia, nutrition education is split between two domains. *Health and Physical Education* includes the teaching of nutrition principles, and *Design and Technology* includes food skills, such as cooking (Australian Curriculum Assessment and Reporting Authority, 2016). Home economics is not a compulsory subject in Australian secondary schools, as curriculum requirements can still be met without it (Home Economics Institute of Australia, 2010). This curriculum structure is similar to what is found in Canada (Slater, 2013), Hong Kong (Lai-Yeung, 2011) and India (Rathi et al., 2017), while in Sweden (Weichselbaum & Buttriss, 2014), Wales, Northern Ireland (Weichselbaum & Buttriss, 2014), Japan and Finland (McCloat & Caraher, 2020) subjects such as home economics and food studies are compulsory. While most Australian secondary schools offer food and nutrition subjects, they are generally limited to the lower secondary years (i.e., Years 7 and 8) (Home Economics Institute of Australia, 2010). Time spent in food education in Australia varies from none to one or two hours per week. With a somewhat crowded and constrained curriculum (Ballam, 2018; Home Economics Institute of Australia, 2010; Department of Education, 2015), it is likely that some important content is being left out. Therefore, it is important to identify essential food knowledge and skills that adolescents should learn throughout secondary school.

Some previous research has explored the views of home economics teachers (Eiser et al., 1998; Fordyce-Voorham, 2016; Nanayakkara, Margerison, et al., 2018; Pendergast & Dewhurst, 2012; Ronto et al., 2016b; Slater et al., 2018,) and other food and health professionals such as dieticians (Fordyce-Voorham, 2011; Parrish et al., 2016; Sadegholvad et al., 2017; Slater et al., 2018), community educators (Fordyce-Voorham, 2011; Parrish et al., 2016; Sadegholvad et al., 2017), health professionals, food marketers (Parrish et al., 2016), and chefs (Fordyce-Voorham, 2011), as well as adolescents (Ronto et al., 2016a). In addition, in a previous study, we presented the views of food consumers (Burton et al., 2018). In general, these studies found that nutrition knowledge, food preparation and cooking skills, and food safety and hygiene were viewed as the most important topics for everyone to know. However, only five of these studies asked participants which food knowledge and skills should be taught in secondary schools (Eiser et al., 1998; Fordyce-Voorham, 2016; Nanayakkara, Margerison, et al., 2018; Pendergast & Dewhurst, 2012; Sadegholvad et al., 2017), and only one of these used qualitative research methods (Sadegholvad et al., 2017). The aim of this study was to qualitatively explore the views of home economics teachers, young adults who have begun living independently, and parents of adolescents about the food knowledge and skills that they think should be included in secondary school food education programs. The views of these stakeholder groups are important given that they all have either direct or indirect experience with food education in secondary schools. No previous studies have explored the views of secondary students' parents or recently graduated secondary students. The findings from this study have important implications for all relevant stakeholders, including Government authorities, curriculum developers, and home economics teachers.

Materials and methods

Participants and recruitment

Through the phenomenological framework, researchers aim to understand the perceptions of the participants of the situation or phenomenon being examined (Creswell & Poth, 2016; Marshall & Rossman, 2011). Purposive sampling was used to ensure that participants exhibited the characteristics of interest and had experience with the phenomenon under investigation (Ritchie et al., 2014).

Home economics teachers were invited to participate in this study as they have a background in nutrition and practical food preparation skills (Fordyce-Voorham, 2011; Pendergast & Dewhurst, 2012), as well as the pedagogical expertise to understand young people and their worlds (Backman et al., 2002; Fordyce-Voorham, 2011). They are also primarily responsible for teaching food education in secondary schools. An email was sent to a selection of 35 Home Economics Victoria members (a teacher training organisation and advocate for food skills education within Victoria, Australia),

inviting them to participate. To provide flexibility, participants were given the option of doing the interview either face-to-face at the school where they taught, or over the phone. Interviews were conducted with 12 home economics teachers (11 face-to-face, one by phone), by which point data saturation was reached.

Parents who had adolescents currently attending secondary school were invited to participate because they are generally aware of the capabilities of their adolescents and have an investment in their future lives and future health outcomes. They have also had their own experience of moving out of home during young adulthood and having to learn how to look after themselves and prepare their own meals. Young adults who had recently completed secondary school (aged 18-25 years) and who had since moved out of the family home, were selected because they have had recent and direct experience of school food education (or the lack of it) and then becoming responsible for purchasing and preparing their own food. Parents of adolescents and young adults were recruited via a Facebook page that was promoted within several Facebook community groups. For parents of adolescents, data saturation was reached by the thirteenth phone interview, while data saturation was reached after 14 phone interviews with young adults. Both groups received a $20 shopping voucher to thank them for their time.

Interview questions and procedure

The interviews were semi-structured, lasted between 7 and 70 minutes and were conducted between 2014 and 2016. All interviews were conducted by the lead researcher (MB) and were audio-recorded with the participants' permission. The participants in all three groups were asked the question, "What food skills do you think should be included in secondary school food education programs to prepare adolescents for adulthood?" which is the focus of this paper. They were also asked questions related to their specific role in food education (i.e., teacher, parent, former student), as well as questions about the participants' demographic and other characteristics. The interviewer was guided by the participant and asked follow-up questions as required (Hsieh & Shannon, 2005).

Data analysis

A professional transcription service was employed to transcribe the interviews verbatim, and participants were given the chance to review their transcript to confirm accuracy. All identifying information was removed and replaced with pseudonyms, and each transcript was given a unique identification number to maintain anonymity. MB listened to the audio recordings in order to clean and check the transcripts for accuracy. This process provided MB with the opportunity to become familiar with the data (Mason, 2002; Spencer et al., 2014a, 2014b), and to start identifying preliminary themes and subthemes (Brooks & King, 2012). Using Nvivo 11 (QSR International, 2015), sections of the transcripts, such as key concepts and phrases, were assigned codes (Mason, 2002; Spencer et al., 2014b) and the themes were further refined through an iterative process. A second researcher (AW) coded a selection of the transcripts to ensure inter-rater reliability. Any differences in coding between the researchers were discussed and the final themes and subthemes were mutually agreed on.

Ethics

Ethics was granted by Deakin University Faculty of Health Human Ethics Advisory Group (HEAG-H 149_2014, HEAG-H 20_2016).

Results

Participant characteristics

All 12 of the home economics teachers were female with teaching experience ranging from two to 30 years. The teachers taught in a range of school types including Government ($n = 6$), private ($n = 3$) and Catholic ($n = 3$). Seven teachers taught at co-educational schools, while four taught at all-female schools and one at an all-male school.

Of the 13 parents of adolescents, 12 were female and one was male. Eight of the parents lived in a two-parent household and five were single parents. Seven parents had completed a university degree, four had a TAFE (Technical and Further Education) qualification, and two did not complete secondary school. The majority of parents lived in Victoria ($n = 10$); however, three lived in New South Wales.

The young adult participants consisted of 11 females and three males who had completed secondary school between 2011 and 2015. Most lived in shared housing (*n* = 8), while others lived either on their own (*n* = 3), with a partner (*n* = 2), or in one case, with a family member. Thirteen of the respondents were studying full-time, six of whom were also working part-time. One participant was in full-time employment.

Views about the food knowledge and skills that should be taught in secondary schools

Analysis of the qualitative data from the interviews with 12 home economics teachers, 13 parents of adolescents and 14 young adults, revealed nine key themes. These nine themes and their sub-themes are shown in Table 1. This paper will present, in detail, the four themes that were most identified by participants: *Practical cooking skills*, *Planning and resource management*, *Nutrition and healthy eating*, and *Consumer skills*. The remaining themes are presented in detail elsewhere (Burton, 2018).

Table 1   Major Themes and Sub-Themes of Important Food Knowledge and Skills for Secondary School Food Education

Major themes and sub-themes	Number of participants who mentioned theme/sub-theme as important		
	Home economics teachers (*n* = 12)	Parents of adolescents (*n* = 13)	Young adults (*n* = 14)
1. Practical cooking skills (Theme 1)	**12**	**12**	**13**
Basic food preparation and cooking skills	10	5	9
Easy, fast, cheap meals	6	8	7
Identifying and using kitchen equipment and utensils	5	5	5
Modifying and adapting recipes	7	-	6
Different cooking methods	6	2	4
Extending meals	3	5	2
Create a meal from available ingredients	-	5	3
Adding flavour	4	-	1
Measurement of ingredients	5	-	-
Cleaning up	2	2	-
Following a recipe	3	-	-
2. Planning and resource management (Theme 2)	**10**	**12**	**13**
Meal planning	9	9	11
Budgeting skills	7	9	7
Writing a shopping list	1	2	5
Managing time in the kitchen	-	-	1
3. Nutrition and healthy eating (Theme 3)	**9**	**12**	**12**
4. Consumer skills (Theme 4)	**7**	**12**	**13**
Understanding food labels	5	10	12
Shopping skills	6	7	7
Food advertising and marketing	2	7	6
5. Environmental issues and ethical food choice	**6**	**11**	**10**
Environmental issues	5	11	10
Ethical food choice	4	4	3
World food problems	-	1	-

Note: Themes identified from thematic analysis of interviews with home economics teachers, parents of adolescents and young adults

Legend ■ = popular themes, ■ =less popular themes, □ = sub-themes

Table 1   **(continued).**

	Number of participants who mentioned theme/sub-theme as important		
Major themes and sub-themes	Home economics teachers (*n* = 12)	Parents of adolescents (*n* = 13)	Young adults (*n* = 14)
6. Kitchen safety and food hygiene	**8**	**9**	**9**
Food hygiene	7	8	8
Kitchen safety	6	3	2
7. Food production and processing	**5**	**6**	**11**
Domestic food production	-	5	9
The origin of food	4	2	3
Food processing	1	2	3
8. Confidence and resilience	**7**	**5**	**5**
Confidence and resilience	5	2	5
Food exposure	5	5	2
9. Cultural foods	**5**	**1**	**-**

Note: Themes identified from thematic analysis of interviews with home economics teachers, parents of adolescents and young adults

Legend ■ = popular themes, ■ =less popular themes, □ = sub-themes

Theme 1: Practical cooking skills

Basic food preparation and cooking skills

Ten teachers, five parents and nine young adults felt that basic food preparation and cooking skills were essential to include in secondary school food education. The general belief of the teachers was that by providing students with the opportunity to learn how to prepare a range of different basic foods such as eggs, pasta, fish and vegetables, they would then have the ability to adapt these basic skills and apply them to different recipes or dishes. General concern was evident among the parents about the lack of basic cooking skills among school-leavers. They thought that adolescents should learn how to prepare and cook foods that are commonly used in family meals, such as eggs, chicken and steak. Some of the young adults felt that basic food preparation and cooking skills were the most important skills for adolescents to learn at school.

Easy, fast, cheap meals

Easy, fast and cheap meals was a common theme among all three groups. The teachers acknowledged that, for adolescents, food is all about convenience. They felt that teaching students the skills to make a variety of quick healthy meals and snacks would be a good strategy for helping them to understand that convenience does not always have to mean eating out and buying fast food. Some of the young adults also thought that it would be beneficial to show students that cooking does not have to take a lot of time. One young adult said:

> I feel like they probably don't teach you life skills … like, once you've finished school, I think you become increasingly time-poor. They don't really teach you how to make healthy nutritious food on the go. (Y7)

Low-cost meals were most frequently mentioned by the young adults, emphasising the need to teach adolescents how to cook healthy meals on a small budget. One young adult said:

> I think if you've got a small budget, it can be pretty hard to cook some of the things that they teach you to cook in school. (Y9)

Identifying and using kitchen equipment and utensils

Home economics teachers believed that the identification and use of different utensils and equipment should be one of the first things that students are taught when they are introduced to the

school kitchen. Teachers identified specific equipment such as the oven, stove, microwave, electric beaters, grill, knives, as well as knowing the different types of pots.

The parents and young adults were not as specific when discussing the types of equipment. Two parents highlighted the importance of knowing how to select the best equipment or tools to use for preparing or cooking particular foods, while a few young adults believed that learning how to use different appliances would help adolescents to feel more confident in the kitchen.

Modifying and adapting recipes

The home economics teachers (*n* = 7) and young adults (*n* = 6) highlighted the importance of being able to modify and adapt recipes based on factors such as individuals' dietary needs, likes or dislikes, or the foods that are available to them:

> Letting them be a little bit flexible and creative with their own dishes … Because there'd be times when you want to cook a recipe, but you've got more people or you are gluten intolerant and you want to change an ingredient or you want to substitute something for another thing, because you don't like it. (Y11)

Some parents acknowledged that this was an important skill for adolescents to learn but did not consider it as important as other skills. Some also questioned whether it was something that should be taught at home, rather than at school.

Different cooking methods

Participants from all three groups discussed the ability to use different cooking methods, however it was identified by more home economics teachers (*n* = 6) than parents (*n* = 2) and young adults (*n* = 4). The teachers spoke about learning different cooking methods and providing adolescents with the competence to apply those methods to many different foods and recipes, highlighting frying, baking, boiling, steaming, rubbing-in, and dry and moist cooking methods. They also felt that it was important to teach adolescents how the different cooking methods can affect the healthiness of foods and to give them the skills to be able to determine which methods are best to use in different preparation scenarios. Participants in all three groups agreed that learning different methods of cooking gives adolescents the ability to adapt to the cooking facilities available to them:

> Simple things that you can make with really basic items… Just stuff that people have around their home, like you just cut up with knives, or just mix with spoons instead of electric mixers and stuff, because everyone doesn't have that kind of stuff. (Y6)

Extending meals

The ability to extend meals, either by learning a range of different bases that can be added to, or learning how to use leftovers for another meal, was viewed as an important skill by several parents (*n* = 5) and the home economics teachers (*n* = 3). One teacher gave an example of a basic tomato and meat sauce that could then be used to create several different meals:

> …how they can actually take a simple Bolognese sauce… You can take out the tomato, add maybe some grated carrots, put some mashed potato on top, pop it into the oven and there's your Shepherd's Pie. You can add some drained red kidney beans, add some oregano, touch of chilli and voila, you've got the centre for burritos or Chilli con Carne, for example. You can put it between layers of pasta with a white sauce and you've got a lasagne. (T6)

Create a meal from available ingredients

Several parents (*n* = 5) and young adults (*n* = 3) believed that students should be taught how to create a meal out of ingredients already available in the fridge or pantry, giving them the confidence to improvise. They also explained that it was a good way to use up foods and, therefore, create less waste and save money. None of the home economics teachers mentioned this as an important skill.

Adding flavour

Being able to add flavour to food and meals appropriately was identified as important mainly by the home economics teachers (*n* = 4), but also one parent. The teachers believed that it was important to be able to identify the types of flavours within a meal and decide what else could be added to create more flavour. Adding salt was a common concern voiced by the teachers and they highlighted

the importance of teaching adolescents that food can be flavoured using other ingredients such as herbs or spices.

Measuring ingredients, following a recipe and cleaning up

Several home economics teachers mentioned the importance of learning how to measure ingredients accurately and how inaccurate measurements can adversely affect the outcome. They also believed that learning how to carefully read and follow a recipe was a key skill for creating a successful outcome and for giving adolescents the confidence to pick up any recipe and cook it. Two each of the teachers and parents, but none of the young adults, thought that students should learn correct cleaning up processes, such as washing the dishes—using hot soapy water, washing the cleanest dishes first and inverting them to drain effectively.

Theme 2: Planning and resource management

Meal planning

The majority of participants in all groups discussed the importance of meal planning skills. The teachers highlighted skills such as knowing how to plan meals for a week and how to work out food quantities needed to feed different numbers of people. Parents stressed the importance of learning a range of different strategies and skills for effective meal planning. For example, knowing which staple ingredients to keep in the pantry and fridge so that a meal could be made without going to the shops:

> Be able to look in the cupboard … if they don't want to formally plan a menu, at least think about what they'd like to eat for the week, or understand what basic protein, vegetables you could have in the fridge that you could just whip something up out of without it then causing you too much stress. (P7)

The parents believed that meal planning was an essential life skill because it could help to reduce waste and save money by using home-stocked ingredients or by organising meals so that ingredients could be used for multiple meals. All groups emphasised the importance of teaching adolescents how to utilise the freezer effectively for planning meals, for example, cooking bigger quantities and freezing in portions or preparing a variety of meal bases that could be frozen and then added to, at a later date. Some of the parents and young adults explained that having the skills to plan meals would help young people to save time and money, and also reduce the likelihood of making poor food choices.

Budgeting skills

Being able to budget for food and having some knowledge of food costs were cited as important aspects of meal planning by all groups. Teachers mentioned the importance of understanding the different factors that can affect food prices, such as seasonality, while knowing how to shop on a budget was mentioned as an important skill by the parents and young adults:

> A lot of uni students don't really know how to cook on a budget, and I know myself and a lot of my friends end up just cooking … like 2 minute noodles, because that's cheap and quick and easy. (Y9)

The young adults also talked about the common misconception that healthy food is expensive and felt that it was important to make students more aware of the value of different foods. One young adult suggested that budgeting should be taught along with other life skills such as how to do your taxes and how to apply for a job, stating that basic life skills, in general, was an area needing more attention in secondary schools. However, there was one participant in each group who was unsure about the importance or the effectiveness of teaching budgeting skills at school.

Writing a shopping list

Several of the young adults thought that learning how to write an effective shopping list and the benefits of using them was important to teach in secondary schools. Only one home economics teacher and two parents identified shopping lists as important, with others feeling that it may be a bit irrelevant due to the increase in the number of consumers participating in online shopping.

Theme 3: Nutrition and healthy eating

Nutrition and healthy eating were mentioned by participants in all three groups but were most frequently mentioned by the parents (*n* = 12) and young adults (*n* = 12). The young adults felt that nutrition education should not be too detailed because it would be overwhelming for adolescents. They believed that it should provide basic knowledge of healthy eating and food groups rather than focus too much on specific nutrients and their functions.

In contrast, parents generally believed that food education at school should include as much detail as possible, with some stating that they thought it was the most important food topic to teach at school, mainly because it was something that most parents were not able to teach their adolescents at home. The beliefs of home economics teachers appeared to sit somewhere between those of the parents and the young adults. The teachers and parents thought that adolescents should be taught about the key nutrients, their role in the body and food sources of specific nutrients. In addition, parents also thought they should learn about recommended daily intakes and appropriate serving sizes.

Food models, such as the *Healthy Eating Pyramid* and *The Australian Guide to Healthy Eating* were mentioned by participants in all groups as important guides for adolescents to understand. They felt that it was important to know the right balance of the food groups and to understand what *one serve* of different types of food looks like. Some of the teachers and parents also thought that adolescents should be made aware of the difference between fresh and processed foods and the different natural and artificial additives that they may contain. The link between nutrition and health, such as the benefits of healthy eating and the consequences of consuming a poor diet, was identified as important by all groups. One teacher suggested that nutrition information taught in secondary schools should be highly relevant to the adolescents' worlds, incorporating the key nutritional challenges that adolescents face, such as skipping meals, cutting out food groups, body image concerns and energy drinks.

Some of the home economics teachers explained that it was important in food education not to ignore foods that are typically described as "unhealthy". They suggested that these foods should be discussed in terms of "celebration foods" and that they are okay to eat occasionally as they contribute to food enjoyment. Another teacher also explained that allowing students to cook celebration foods enables students to realise what actually goes into those types of foods, thus making them become more conscious and able to appreciate healthy food more.

Theme 4: Consumer skills

Understanding food labels

Almost all of the parents and young adults felt that adolescents should be taught how to read food labels at school. They spoke about the importance of knowing how to interpret the nutrition panel and ingredients list. Many young adults discussed the benefits of understanding food labels. They generally believed it would give them more control over their own health and also that consumers would be less likely to believe misleading front-of-packet claims if they understood what was written on the labels.

Several parents also explained that they struggled to understand food labels themselves, and this contributed to their belief that it is a crucial skill for young people to have, and that it was important to learn at school, given their own lack of understanding. Only five of the home economics teachers mentioned food labels as an important topic.

Shopping

Food shopping was perceived as an important skill set for secondary school food education by several participants in all three groups. In general, the parents and young adults believed that adolescents should be made aware of the different places to shop for food (e.g., supermarket, farmers' market, greengrocer, butcher), and be taught how to compare and select foods based on factors such as price, quality and ripeness. The home economics teachers also thought it would be useful for adolescents to be taught how to navigate their way around a supermarket, while parents and young adults talked about learning how to get value-for-money and understanding supermarket catalogues in terms of comparing items and budgeting.

A few participants from each of the groups suggested that it was less of a priority to teach shopping skills at school compared to other food-related topics, given the limited amount of time allocated to food education in the timetable. Some of the young adults also believed that a lot of these skills were ones that young people could gain once they started shopping for themselves. One young adult suggested that it be integrated into other topics, rather than it being taught explicitly as a separate topic.

Food advertising and marketing

Only two home economics teachers discussed food advertising and marketing as an essential topic for secondary school food education. However, they both felt very strongly about the importance of it as a key skill for health literacy. They expressed their concerns about the amount of misleading information that exists (i.e., on food labels, in the media, supermarket advertisements and billboards), and believed that adolescents should be taught how to critically evaluate food messages along with which sources of information to trust. One teacher explained that this was especially important because adolescents are particularly vulnerable to images portrayed as favourable by the media.

The majority of parents and young adults emphasised the importance of having a good understanding of food advertising and marketing. Some of the parents and young adults had similar views to the teachers and felt that it was vital for adolescents to learn how to be sceptical of food messages and how to identify misleading information. They also believed that adolescents should be taught awareness of the motives behind advertising and marketing schemes, for example, the role of product placement in stores.

However, some parents questioned whether it should be taught in food subjects as opposed to other subjects. For example, one parent noted that food is not the only product area that warrants an understanding of marketing and advertising and, therefore, suggested it should be covered more broadly in a different school subject such as media. One young adult believed that this was a topic that should be reserved for the more senior secondary school years, after the more rudimentary skills have been learned. In contrast, two of the parents thought that the foundations of the topic should be introduced in late primary school because a lot of food advertising and marketing strategies were targeted towards young children. One parent also suggested that if food education focused more on providing adolescents with an in-depth understanding of healthy eating and good nutrition, then that may offset the impact of food advertising and marketing schemes and make it less of an essential topic in food education.

Discussion

The home economics teachers, parents of adolescents, and young adults shared several common themes in terms of the types of food knowledge and skills that should be taught in secondary school food education. Four themes
   a) Practical cooking skills
   b) Planning and resource management
   c) Nutrition and healthy eating and,
   d) Consumer skills
were universally important among each of the three groups. However, there were also some clear differences between the groups with regards to their views about the importance of some of the more specific skills.

Within the *Practical cooking skills* theme, the home economics teachers and young adults tended to favour the importance of *basic food preparation and cooking skills*. Food, nutrition and health teachers have previously reported that their lessons aimed to teach practical cooking skills, along with encouraging healthy food choices and developing lifelong healthy eating habits (Boddy et al., 2019). However, fewer parents mentioned this subtheme, perhaps because they consider it to be obvious due to their long history of family meal preparation. The parents believed that it was more important for students to learn how to cook meals that are easy, fast and cheap, which is not surprising given that many parents claim to be time-poor (Jabs & Devine, 2006).

Learning to modify and adapt recipes according to a variety of contextual factors was viewed as important by the home economics teachers and the young adults. These skills have previously been

identified as important by home economics teachers (Fordyce-Voorham, 2016; Nanayakkara, Margerison, et al., 2018) and food system professionals (Nanayakkara, Margerison, et al., 2018). However, Ronto et al. (2016a) found that adolescents viewed these skills among the *least* important aspects of food literacy. Similarly, in the present study, most parents were not convinced that it was an important skill for adolescents to learn at school. Some said it was not a skill set that they used themselves, and so they deemed it unnecessary, while several other parents suggested that it was something that should be taught at home, rather than at school. This belief frequently emerged throughout the parent interviews; they believed they could teach certain skills at home and, therefore, they do not need to be taught at school. This phenomena was also seen in a previous study of readers' comments to a newspaper article about the inclusion of cooking in the school curriculum (Pendergast et al., 2011). Thirty-six percent of readers suggested that developing adolescents' food literacy should only be the parents' responsibility rather than the school's (Pendergast et al., 2011). However, whether it is the school's or the parents' responsibility to teach children about nutrition and healthy eating has been a topic of debate over recent years (Lai-Yeung, 2011; Pagnini et al., 2009; Patino-Fernandez et al., 2013; Pendergast et al., 2011;). In the current study, it appeared that parents who believed that certain skills should be taught at home, were more likely to think that schools should be teaching them about nutrition and the environment; things that they did not feel qualified to teach their adolescents themselves.

Being able to create a meal using ingredients available in the pantry or fridge is an essential skill that has been identified by home economics teachers (Ronto et al., 2016b), other food professionals (Fordyce-Voorham, 2011; Parrish et al., 2016), and adolescents (Ronto et al., 2016a). However, in the current study, while some of the parents mentioned it as an important skill, few young adults and none of the home economics teachers thought so. It is possible that the teachers in this study considered its importance in relation to other topics, given their limited contact time with the students and the need to prioritise what they teach. The fact that it was not mentioned by the majority of young adults may be due to their limited experience in food provision compared to parents. This was also evident in the *Planning and resource management theme*, where more young adults than teachers and parents believed it was important to learn how to write a shopping list and to learn how to manage their time in the kitchen when cooking. These findings provide evidence that these are skills that adolescents would benefit from learning prior to leaving school and becoming responsible for their own food provision.

The home economics teachers put a lot of emphasis on the importance of teaching specific techniques such as how to measure ingredients correctly, follow the steps in a recipe, and the correct way to clean up. *Measurement of ingredients* and *following a recipe* were not mentioned by any of the parents or young adults. This may be because they believed that it is a skill that is easily acquired, or perhaps they do not understand the importance of such skills. Furthermore, it may be that home economics teachers feel the need to make skills more concrete in order to teach them, whilst parents and young adults do these things unconsciously. However, it could also suggest that home economics teachers may be focusing on skills that are less relevant to adolescents' lives, given that the parents and young adults did not share the same beliefs about the more technical aspects of food preparation.

All three groups discussed the importance of teaching *basic skills*, rather than more complex skills. In particular, focusing on basic meal and snack recipes and teaching a variety of cooking methods using basic equipment found in most homes, rather than expensive, high-tech appliances that many people do not have access to. They felt that it was important for adolescents to be able to cook a basic meal regardless of the equipment available to them. Similar views have previously been reported by home economics teachers (Fordyce-Voorham, 2016) and food experts such as chefs, homemakers, home economists and dieticians (Fordyce-Voorham, 2011).

Planning and resource management was viewed as an important aspect of school food education, in particular, *meal planning* and *budgeting skills*. Participants seemed to recognise and embrace the fact that people consider themselves to be increasingly time-poor and believed that having some good meal planning and management skills would help to alleviate the influence that lack of time has on meal preparation. This is an interesting finding as it has previously been reported that only 23% of Australian main meal preparers plan their meals for the week ahead, while 42% plan their meals on the day (Meat & Livestock Australia, 2011). Perhaps, for the parents, meal planning is something that they feel they do not do very well, and therefore, believe it to be more important for adolescents to learn. In a previous study by the authors, it was found that 71.7% of Australian food consumers believed that meal planning skills were important for all consumers to have, while

budgeting skills were viewed as *essential* by 88.1% of Australian food consumers (Burton et al., 2018). However, Ronto et al. (2016b) found that 65.4% and 52.7% of Australian home economics teachers reported spending little to no time on planning and managing *time for food shopping* and *budgeting for food*, respectively. Thus, the mismatch between the common belief of the importance of meal planning and resource management, and the amount of time spent teaching these skills in secondary schools, warrants further investigation.

While nutrition and healthy eating was viewed as an important topic by all of the groups, there were some key differences between the groups as to how detailed it should be. Home economics teachers mostly believed that adolescents only require a basic understanding of nutrition and healthy eating, a view also shared by various food-related professionals (Sadegholvad et al., 2017). In contrast, the parents felt that adolescents should be taught as much detail as possible, with many suggesting that it was the most important topic to cover in food education. This difference in views could be due to the expertise of home economics teachers and their awareness of the fact that there are many other knowledge and skill sets that influence food literacy. It may also be that they know nutrition is also covered in other subjects in the curriculum (i.e., Health and Human Development). In addition, it became clear that many of the parents did not feel confident about their own nutrition knowledge, which may be why they felt it was so important to teach adolescents at school. Parents' views could also relate to the fact that they are invested in the wellbeing of their own adolescents and believe that nutrition has a direct relationship to their health.

The young adults believed that the focus should be on healthy meals, rather than sweet foods and baking, however, several home economics teachers felt that it was also important to include some baking to keep students interested and for them to understand that occasional foods are acceptable to have every now and then. This is quite an alarming finding, given the increasing obesity rates, but is in line with another study which reported that 37.6% of home economics teachers across Australia spend only a moderate amount of time or less teaching students about healthy and unhealthy foods (Ronto et al., 2016b). Perhaps this is a view that warrants more research, as the need to teach students how to cook energy-dense, nutrient-poor foods is questionable. Given that 35% of total energy consumption in Australia comes from discretionary foods, and that this proportion is even higher (41%) among 14–18-year-olds (Australian Bureau of Statistics, 2014), it must be considered whether these foods should be included in a food education program. In fact, discretionary foods in schools are actively discouraged in the UK, as set out by the Department for Education (2016).

*Consumer skill*s was a major theme in all groups but was most frequently discussed by parents and young adults. The parents mentioned skill sets that they could relate to, as many use them in their own day-to-day lives. However, in other studies, perceived importance of consumer skills has been mixed. In a cross-sectional study of Australian home economics teachers, 91.4% agreed that *How to select and buy quality and value for money food* was important (Fordyce-Voorham, 2016). However, in other studies, adolescents (Ronto et al., 2016a) and food professionals (Ronto et al., 2016b) rated it as one of the least important skills. Perhaps this is because many consider it to be an important skill set, but not so much when comparing it to other types of skills. This appeared to be the case for the home economics teachers, as they considered the limited amount of time students spend doing food education.

Fewer of the home economics teachers, compared to parents and young adults, mentioned food labels as an important aspect. In accordance with the parents and young adults, a previous study of consumer views, found that *how to read food labels* was the fourth most essential food-related knowledge or skill required by food consumers (Burton et al., 2018).

Overall, parents' consideration of their own adolescents appeared to play a role in their beliefs. For example, they talked about food safety to prevent illness and kitchen safety to prevent injury, and some were also concerned about the health effects of pesticides and additives in processed foods. Many parents also believed that the important topics were the ones in which they either lacked themselves or did not feel confident to teach their adolescents themselves. The young adults often spoke about the knowledge and skills that they were, or were not, confident with, as well as which ones they believed have helped them to live independently. Most of the home economics teachers could not put aside the fact that they do not get enough time to teach the students about every important aspect of food. This burden led many of them to discuss the importance of different aspects relative to others, meaning that some aspects may actually be more important to them than they let on. Previous research has also shown that sociodemographic and psychosocial factors such as *age*

Nanayakkara, Burton, et al., 2018), *gender* (Burton et al., 2018; Lai-Yeung, 2007; Nanayakkara, Burton, et al., 2018), *personal values*, *food knowledge* and *food mavenism* (Burton et al., 2018) may influence individual views about the importance of food-related knowledge and skills.

This study has made a significant contribution to our understanding of three different stakeholders' views on this subject. The inclusion of these stakeholder groups has provided an in-depth understanding of the subject from people who have experience with it, either directly or indirectly.

Most participants in all three groups were female which may be perceived as a limitation. However, as the majority of home economics teachers and main household food shoppers and preparers remain female (Burton et al., 2017; Reid et al., 2015), this is not perceived to be a major problem. Although, it should be taken into consideration when interpreting the findings of this study. It must also be noted that most of the young adults were current university students, some of whom were studying food and nutrition, and most had studied home economics or a similar subject in secondary school. However, this could be perceived as a strength of the study, as the aim was not to provide findings that could be generalised to the wider population but rather to simply explore the various views that exist on the topic in order to inform the nature of future research. A limitation of this study was that the interviews of the three groups were conducted over a two-year period due to a career break of one of the authors. It is possible that individual views may have changed during this time.

Future research and implications for educational practice

Given that several parents believed that there were certain skills that should or could be taught at home rather than at school, it would be useful to explore the amount of food-related activities that children and adolescents are involved in at home. It would also be useful to ascertain the views of other stakeholder groups, such as current secondary school students. Current students could provide insight into their interests, as well as the food knowledge and skills that they feel they need to learn prior to leaving school. It would be particularly interesting to understand the views of students who choose not to continue with a food subject into the higher years of school to determine what puts them off and what would make food education more interesting.

These findings have important implications for secondary school food education programs in the future. Currently in Australia, there is no standard curriculum for food education in secondary schools, and this may be partly due to the uncertainty about which knowledge and skills are essential for young adolescents to learn. The three stakeholder groups interviewed in this study can be considered key informants on this topic, and therefore, their views provide valuable insights and take us one step closer to creating an ideal food curriculum for secondary schools. Understanding key stakeholders' views about which skills they believe are essential in food education in secondary schools is important for Government authorities and curriculum developers, who could use this information to improve the food education curriculum in secondary schools in Australia. This information is also useful for home economics teachers so that they can make their classes more engaging by focusing on the topics that are valued by the parents, past students, and most consumers. Home economics teachers could also use this information to advocate for time and physical resources within their own school environment.

Conclusion

Each of the three stakeholder groups held similar views about the range of food knowledge and skills essential for secondary school food education programs. Overall, the most commonly mentioned themes were *practical cooking skills*, *planning and resource management*, *nutrition and healthy eating*, and *consumer skills*. However, the different groups placed different levels of importance on the various sets of knowledge and skills and appeared to be motivated by different factors. The findings make a significant contribution to the research in this area and have a number of implications for the future of food education in Australian secondary schools.

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Use of Cowpea (*Vigna Unguiculata*) as Substitute for Wheat Flour in the Preparation of Snacks

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Abstract

Cowpea is an important protein staple food commonly used in Ghana. However, its utilisation in snack foods in Ghana is limited. Quiche Lorraine, a delicious French snack now adopted in Ghana, is quite unpopular due to its high cost, thus making it a snack for the rich in society. This study was therefore conducted to produce an affordable local version of Quiche Lorraine by substituting commonly used wheat flour with cowpea flour. Non-dehulled and dehulled cowpea flours were used to replace wheat flour at 25%, 50% and 100% levels to obtain the new product, named Kum-allory. *Proximate and sensory evaluations were conducted on the products using experimental and descriptive designs respectively. One hundred untrained teenagers were selected purposively from a Senior High School in Takoradi for the acceptability test. The nutrients composition of both the uncooked and cooked samples were also determined according to the methods of the AOAC (2004). Data was analysed using the ANOVA of the Minitab Statistical package. Results indicated lower fat, but higher crude protein contents in the new product. The overall acceptability of the control product was significantly (P < 0.001) better than the 25% and 50% cowpea-based products, but was similar to the 100% cowpea inclusion products. The formulation cost of the new products, were about 47% lower than for the control products. The new product could be commercialised to help combat protein-malnutrition among the vulnerable groups in society.*

KEYWORDS: COWPEA; PROXIMATE ANALYSIS; CONSUMER TEST; SENSORY EVALUATION; SNACK FOODS

Introduction

The development of new food products in today's food industry is progressively becoming interesting, due to ever changing trends and competitive products. Dollar and Kraay (2001), realized that urbanisation, women in the labour force, new food processing and storage technologies are contributing factors to changes in food consumption and dietary patterns for many people. Owing to the fast-paced nature of urban living, there is a high demand for convenience and snacks among urban dwellers. These lifestyle changes, according to Haddad et al. (2003) have adverse effect on the health status of people in developing countries over a long period of time. For this reason, consumers are expecting newer and healthier products that are an alternative to home-made foods.

A study by Edema et al.(2005), has indicated that the consumption of snacks containing trans-fat has increased in Ghana. These snacks dough are chiefly made with wheat flour which is largly imported, since they are not produced locally (Seibel, 2011). This importation is achieved at higher costs, resulting in depreciation of the local currency, hence the need for locally available staples for use in place of wheat flour. One of such potential staples is cowpea.

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Cowpea (*Vigna Unguiculata L. Walp*) are popularly called "beans" in Ghana. It is a grain legume that serves as a major source of protein among low income earning families in the country and hence forms a major staple food crop in sub-Saharan Africa (Boye et al., 2010). It is grown all over the world, though perceived to have originated from Africa (Dugje et al., 2009).

In Ghana, there are lots of cowpea varieties on the local market. They also come in different colours, such as red beans, black-eyed beans, black beans and cream-coloured beans. The seeds are boiled alone or in combination with rice (*Waakye*), and plantain (*Red-Red*). Cowpea is also used in the preparation of street foods popularly called *koose* or *akara* (cowpea fritters) and *tubani* (steamed cowpea batter). Others use it in soups and stews (Appiah et al., 2012; Seibel, 2011). The nutritious nature of cowpea requires that alternative uses are scouted to improve its utilisation.

This study was designed to determine the effects of replacing wheat flour with cowpea flour in snack foods, on cost of formulation, proximate composition and consumer acceptability of the products.

Review of Related Literature

Origin and domestication of cowpea

Cowpea is a grain legume, commonly referred to as "beans" in Africa and "niebe" in Francophone countries as reported by Appiah et al., 2012. In Ghana, *beans* is a common name for all types of legumes except soya. Moreover, the crop is also named locally amongst the ethnic groups in the country:

- *yor* by Gas
- *edua* or *eduwa* by Akans
- *ayi* by Ewe, and
- *waakye* among the Hausas.

Several researchers have reviewed works on the origin of cowpea. Allen (1983) reported that, cowpea was introduced from Africa to the Indian sub-continent around 2000 to 3500 years ago. Another study by Taiwo (1998) also stated that cowpea originated from Africa, and later to East and West Africa and Asia. Kitch et al. (1998) reviewed the species *unguiculata* to be a West African Neolithic domesticated whose progenitors were the wild weed species, namely, *dekindtiana* and *meusensis*.

In Ghana, cowpea is equally popular and is grown largely in the three Northern regions. For instance, the Upper West and Northern regions recorded 75,969 and 105,841 metric tonnes of cowpea respectively (Ministry of Food and Agriculture, 2011). Other areas of production include the Brong Ahafo and some parts of the Volta regions. The most popular cowpea varieties available in Ghana include *Nhyira*, *Tona*, *Hewale*, *Asontem*, *Asetenapa* and *Videza*.

As a legume grain, cowpeas are rich and low-cost sources of protein and other nutrients (Egounlety & Aworh, 2003). In addition, the crop is rich in dietary fibre and carbohydrates. Minor compounds include lipids, polyphenols, and bioactive peptides (Rochfort & Panozzo, 2007).

Processing of cowpea grains

Cowpea passes through several processes before they are used in food preparations. These processes include cleaning, drying, sorting, splitting and milling under conditions which assure a minimum degree of mechanical damages (Uebersax et al., 1991). Other steps like dehulling and roasting may be included, depending on its intended use. Table 1 shows the processing methods.

Table 1   Processing of Cowpea Grains

Process	Description
Cleaning	Cleaning can be done by running the grains over gravity tables or hand picking dead matters, leaves, weevils, diseased grains and any other unwanted materials (Uebersax et al., 1991).
Sorting	The cleaned cowpea is graded according to their seed size, using separators. Another, by forcing air through the gravity table, products of the sought-after size are effectively separated out, while outsized product and foreign material fall below into a separate area.

Process	Description
Dehulling or Decortication	The process of removing seed coat of legume before use. Dehulling, can be done manually or mechanically, depending on the type or quantity of the grain involved. According to Akinjayeju and Enude (2002), the outcome of dehulling helps improve the functional attributes such as appearance, texture, cooking quality, palatability and digestibility of their products. Traditionally, dry beans are soaked in water to loosen the seed coat, decorticated by either manual rubbing or stirring the wet beans in a mortar and floating off the seed coats in water, and then grinding to a paste either on a stone, in a mortar, with an electric blender or in a commercial plate mill (Dolvo et al., 1975) as reported by Singh (2016).
Milling	Once dehulling has been completed, the grains are milled, mostly with plate mills (Phillips & et al., 2003). This is a critical step in legume processing.
Sieving	The sieving process removes the undesirable deposit. For dry-milled cowpea flour, sieving helps to achieve different ranges of particle sizes. Wet sieving can be done using cheese-cloth or muslin cloth while dry sieving can be done with different kinds of local or standard sieves. (Fasoyiro et al., 2012).
Processing undehulled grain into flour	Undehulled or hulled cowpea splits are either ground dry into flour or ground wet into a batter for other food uses, often in combination with cereals and millet. The properties of the product, such as mouth feel, texture, and others are impacted by the composition of the flour, the fineness of the grinding and the cooking conditions (Singh, 2016). In the preparation of flour from undehulled cowpea, the addition of seed coat to produce acceptable product has been a challenging factor, particularly with respect to texture and flavour (Alobo, 1999).

Utilisation of cowpea in Ghana

Cowpea is a multifunctional crop, it serves as a source of food for man and livestock, and serving as a valuable and dependable revenue-generating commodity for farmers and grain traders (Langyintuo et al., 2003; Singh, 2002). In Ghana, the crop is consumed in the various stages of development other than the legumes. The stages include the fresh green leaves, dry leaves, green pods, green beans and dry grains. The most common is the dry grains, which contain significant nutritional value. It is either cooked whole or milled into flour for use (Timko et al., 2007).

Cowpea has found utilisation in various ways, in both the traditional and modern food processing in the world. In Ghana, most cowpeas are cooked with vegetables, spices, and palm oil to produce a thick soup, stews and sauces that accompany the basic staple, notably rice, cassava, yam, or ripe fried plantain. The seeds are also decorticated, ground into flour or paste, mixed with chopped onion and spices, and is either deep-fried (*koose*) or steamed (*tubani*). Some are ground or crushed into meal that is used from bean salads to buns, fritters, and stand-alone vegetarian dishes. Cowpeas are easy to prepare and provide far more nutrition than many other legume species.

The nutritional value of cowpea

Cowpea has a nutritional profile that suits all ages. The nutritional value of cowpea is in the composition of its grain. According to Boukar et al. (2010), the grain provides cholesterol-free protein up to around 30% in some varieties, fibre, magnesium, potassium, B vitamins, and resistant starch. Another study by Rochfort, and Panozzo (2007), revealed that cowpea provides a good source of protein (18%–35%), which was evident in culinary traditions, where cowpeas were used as an important complementary dietary item to grain-based meals.

Health benefits of cowpea

Cowpeas are not only versatile and delicious, but also important for human health, offering a number of health benefits when consumed. Many researchers have revealed that cowpea is effective at binding and lowering blood cholesterol in the body (Bazzano et al., 2001; Winham & Hutchins, 2007.). Further, Vitamin B1 (thiamine) and various flavonoids found within cowpea have recently gotten some great attention for their role, as they can help reduce inflammation and promote normal heart functioning (Anderson et al., 1984). Regular consumption of cowpea and other legumes is reported to have the ability to reduce serum cholesterol, improve diabetic therapy, and provide metabolic benefits that aid in weight control.

The antioxidant effects of cowpeas are of particular interest to the natural health community, because cowpeas are highly associated to lower levels of chronic illness and cancer. (Bazzano et al., 2001; Winham & Hutchins, 2007). Evidence shows that legume based ingredients have been recently

used to develop functional breads intended to evade cardiovascular disease (Nilufer et al., 2008; Vittadini & Vodovotz, 2003)

Dietary fibre is one of the best solutions for a wide range of stomach issues, such as constipation or diarrhoea, however, cowpea can help to absorb water and loosen up the stool, bulking up bowel movements and stimulating peristaltic motion. According to Howarth et al. (2001), soluble fibre and resistant starches in cowpea may help suppress appetite and manage blood sugar as compared to other sources of carbohydrates. According to the report, cowpea exhibit a low glycemic index (GI) and produce a relatively flat blood-glucose response.

Economic importance of cowpea

Cowpea is versatile, providing food for human and feed for livestock. Additionally, the crop is an income generating commodity for farmers, small and medium-scale enterprises.

It is documented that cowpea forms a major component of tropical farming systems because of its ability to improve marginal lands through nitrogen fixation as cover crop (Sanginga et al., 2003). The crop is drought tolerant and its relatively early maturity and nitrogen fixation characteristics fit very well to the tropical soils where moisture and low soil fertility is the major limiting factor in crop production (Hall, 2004; Hall, et al., 2002).

The full economic potential of cowpea will only be realized if other value-added products, especially those targeted at the ever-growing urban population, are introduced. For example, converting cowpea flour into cost effective snack products and baby food might bring about a rise in the price of the commodity, which will also bring higher returns to the producer (Appiah et al., 2012).

Consumer acceptability test

Consumer acceptability test requires relatively larger sample size between 75-150 consumers (Jones et al., 1955). This is to ensure greater confidence regarding the interpretation of the results. Samples are prepared properly. Facilities are well designed and labelled, white or off-white colour more preferable. Good lighting and ventilation should be controlled. Temperature is also controlled to obtain the same temperature for all samples. Volume served should be equal for all samples. For experimental design considerations, samples are labelled with random 3-digit codes to avoid bias (Jones et al., 1955).

Materials and Methods

Study area

The product preparation and sensory evaluations were conducted in Takoradi, in the Western region, Ghana. The proximate analyses of the samples were, however, conducted at the Nutrition laboratories of the School of Agriculture, University of Cape Coast.

Materials used for the study were purchased from a local market in Takoradi. The items purchased included cowpea grains (black-eyed variety), wheat flour (soft), chicken, fresh chilli pepper, carrot, sweet pepper, tomatoes, eggs, onion and salt.

Cowpea flour preparation

The cowpea was examined to ensure it was disease-free, and was then sieved to remove foreign particles, to ensure wholesomeness. The cleaned seeds were divided into two portions and treated as follows: The first portion was manually dehulled by pounding with a little water for about 20 minutes. This was followed by a vigorous hand-rubbing to separate the seeds from the seed coat, then the seed coats were detached from individual seeds. The dehulled seeds were spread on a clean table and sun-dried for 12 days till the grains were bone-dried. The second portion was milled in the dry state, using a locally fabricated attrition, and was then passed through a 250 μm mesh sieve to obtain fine cowpea undehulled and dehulled flours, as shown in Figure 1.
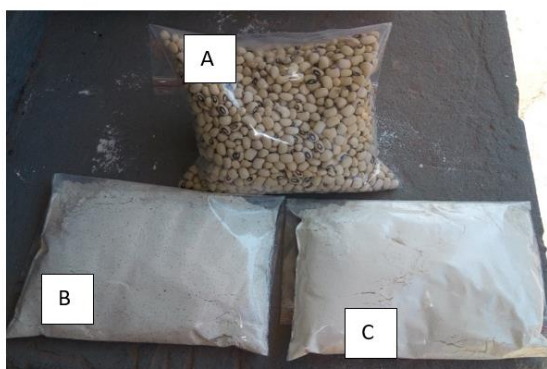
A. Cowpea grains B. Undehulled Cowpea Flour (UCF) C. Dehulled Cowpea Flour (DCF)

Figure 1   Whole Cowpea Grains and Flours

Products preparation

In the preparation of *Kum-Allory*, flours of the undehulled and dehulled cowpeas were beaten separately with a wooden ladle till a smooth, foamy and light consistency batter was obtained. The pastes were used to substitute for wheat flour at 25%, 50% and 100% levels to obtain the new formulation for the base of the product. Five to ten millilitres of water was added to the mixtures to attain the appropriate consistencies. The batter mixtures were then poured into already labelled patty tins of approximately 4cm thickness. Each mixture was filled with toppings of vegetables, chicken flakes, chicken stock or well-seasoned egg for binding. Formulations were baked in a hot oven at temperatures of 175°C for 20mins, cooled, packed in zip-lock bags and stored at ambient temperature for further use.

In the preparation of the Quiche Lorraine products, half fat to flour was rubbed-in to obtain a fine-crumbs texture. A soft pastry dough was formed with 15ml cold water, wrapped in a polythene and allowed to stand for 30 minutes. Vegetables, chicken and custard were prepared ready as toppings. The dough was rolled and lined in muffin tins of approximately 4cm thickness. The dough was filled with the toppings and seasoned eggs for binding. The mixture was baked in a hot oven at temperature of 175°C for 30mins, cooled, packed in zip-lock bags and stored at ambient temperature for later use.

Proximate composition

The ash, moisture, crude fibre, crude protein, fat, minerals and carbohydrate contents of the flours, were determined according to the methods proposed by the AOAC (2004).

Sensory evaluation of products

One hundred teenagers (aged between 14 and 19 years) were purposively selected from students of a Senior High School in Takoradi. The non-random purposive sampling technique was used in an attempt to sample participants who were interested in the study (Amedahe, 2002). Criteria for selection included the following:

1) participants were to be at least 14 years of age

2) participants should not be allergic to any of the ingredients used in the study, and

3) they were to be available for the period required to conduct the evaluation.

The assessment was in two sessions; mid-morning and late afternoon. This is because the number of product samples were quite large (eight samples) for the participants to evaluate at a time, as that could result in sensory fatigue (Meilgaard et al., 1999). Adequate and uniform lighting and ventilation were ensured in the evaluation hall. Movements and other sources of distraction were also controlled. In the first session, the undehulled samples were assessed. Participants were made to sit in a way that their responses were not influenced by other panellists. The products were chopped into smaller sizes, and wrapped in coded aluminium foils, and were presented to the panellists for evaluation.

Each panellist was provided with a glass of water to rinse and neutralize their mouths after tasting each product.

The panellists were then asked to evaluate the products using a 7-point hedonic scale, where 1 represented *dislike extremely* and 7 *like extremely*. The attributes evaluated include colour, taste, flavour, texture, appearance and overall acceptability.

Statistical analysis

Data collected were subjected to analysis using one-way ANOVA of the Minitab Statistical Package. Independent *T*-tests were used to separate and compare the group means. Significant differences were accepted at probability level of 0.05.

Results and Discussion

Physical characteristics of the products

| Undehulled cowpea products | Dehulled Cowpea Products | Control (wheat based product) |

Figure 2　　　　Physical Appearance of *Kum-Allory* and Quiche Lorraine Products

Table 2　　　　Proximate Analysis of the Nutritional Composition of the Cooked (Processed) Samples of Cowpea

Parameter (%)	Control	25% U	50% U	100% U	25% D	50% D	100% D	SED	Sig.
Dry Matter	33.07[d]	47.38[bc]	44.66[c]	44.15[c]	55.12[a]	48.86[b]	37.16[d]	1.01	***
Crude Protein	23.90[d]	27.39[c]	28.03[bc]	31.51[a]	29.84[ab]	24.85[d]	31.41[a]	0.69	***
Ash	1.61[d]	2.34[bc]	2.82[a]	2.75[ab]	2.90[a]	1.93[cd]	2.39[b]	0.12	***
Crude Fibre	2.75[d]	4.45[a]	2.43[e]	3.57[b]	4.27[a]	3.03[c]	2.89[cd]	0.07	***
Ether Extract	17.46[a]	3.24[cd]	3.05[d]	3.02[d]	3.86[b]	3.72[bc]	3.86[b]	0.15	***
CHO	49.61[d]	60.27[b]	61.37[b]	56.18[c]	57.50[c]	64.18[a]	56.48[c]	0.55	***
Ca	0.64[ab]	0.51[b]	0.50[b]	0.61[ab]	0.64[ab]	0.73[a]	0.65[ab]	0.05	**
Mg	0.12[d]	0.12[d]	0.13[cd]	0.12[d]	0.17[bc]	0.17[b]	0.23[a]	0.01	***

*= *P* < 0.05; ***= *P* < 0.001; Sig.= Significance level
25% U = 25% Undehulled; 50% U = 50% Undehulled; 100% U = 100% Undehulled;
25% D = 25% Dehulled; D = 50% Dehulled; 100% D = 100% Dehulled
SED = Standard Errors of Differences
Means in a row with similar superscripts are not significantly different (*P* < 0.05; *P* < 0.001)

Table 3   **Sensory Evaluation Result for Samples Made From Undehulled Cowpea**

Parameter	604 100% U	704 50% U	804 25% U	904 (control)	SED	Sig. Level
Colour	4.61[b]	4.85[b]	4.89[b]	6.12[a]	0.21	***
Taste	5.26[b]	5.11[bc]	4.68[c]	6.06[a]	0.22	***
Texture	4.92[b]	4.81[b]	4.84[b]	5.57[a]	0.22	**
Aroma	4.88[b]	4.69[b]	4.91[b]	5.96[a]	0.20	***
Attractiveness	5.02[b]	5.10[b]	5.27[b]	6.09[a]	0.21	***
Acceptability	5.37[b]	5.14[b]	5.21[b]	6.31[a]	0.20	***

** = $P < 0.01$; *** = $P < 0.001$
SED = Standard Errors of Differences
Means in a row with similar superscripts are not significantly different.

Table 4   **Sensory Evaluation Result for Samples Made of Dehulled Cowpea Products**

Parameter	304 (control)	204 100% D	404 25% D	504 50% D	SED	Sig. Level
Colour	5.17[b]	5.74[a]	5.49[ab]	5.46[ab]	0.20	***
Taste	5.57[a]	4.59[b]	4.68[b]	4.53[b]	0.25	***
Texture	4.89	5.26	5.26	4.99	0.22	NS
Aroma	5.72[a]	5.40[ab]	5.13[b]	5.36[ab]	0.21	***
Attractiveness	5.51	5.86	5.65	5.61	0.20	NS
Acceptability	5.95[a]	5.51[ab]	5.33[b]	5.25[b]	0.22	***

NS: Not Significant, *** = ($P < 0.05$), SED = Standard Errors of Differences
Means in a row with different superscripts are significantly different.

Table 5   **Costs of Producing Quiche Lorraine (control) and *Kum-Allory* Products**

Items	Quiche Lorraine (control) Cost of Production		*Kum-Allory* Cost of production	
	Quantity	Gh₵	Quantity	Gh₵
Wheat flour cowpea flour (kg)	1	15.0	1	9
Shortening (g)	450	7.0	-	-
Chicken (g)	500	22.5	200	9
Vegetables (g)	250	25.0	100	10
Eggs (each)	8	8.0	5	5
Custard or stock (ml)	500	5.5	30	5
Spices (g)	30	7.5	20	5
Fuel/ power	-	6.0	-	6
Other cost		20.0		20
Total cost		**116.5 Gh₵**		**69 Gh₵**
Net Weight finished product (kg)		1.630		1.835
Cost Gh₵ per Kg.	**116.50/1.630 =**	**71.50**	**69/1.835 =**	**37.60**

Source: Field data, 2017. ($1 US = 5.00 Gh Cedis). Gh₵ is The Ghanaian cedi is the unit of currency of Ghana.

Discussion

Physical characteristics of *Kum-Allory* products

It can be realised from Figure 1 that the shape and appearance of the products were similar to the control products. The UCF samples appeared and felt like it was a cup cake, because particle cohesion was weaker than for the other samples. This might have influenced panellists' preference for such products. This appearance was due to its foaming ability when whipped at appropriate viscosity, in a similar way as cake products do. Several studies have reported that the functional properties of cowpea give its products the attractive round shape, golden brown crust and spongy texture (Hung, & Kaveh, 1988; Okaka & Potter, 1979). Dehulling of the grains is reported to result in refined cotyledons with products exhibiting good appearance, texture, and cooking qualities (Singh, 2016).

The control products appeared gummy and dumpy when broken, but the cowpea based products patted spongy and crumby like cake touch. The particle cohesion of the 100% cowpea products were relatively weaker due to lower particle cohesion, and this made them quite delicate, compared to the other products.

Proximate composition of products

The moisture content of the cowpea products ranged between 48.36 and 54.93%. The crude protein content of the *Kum-Allory* products was significantly ($P < 0.001$) higher than that of the Quiche Lorraine products. Similarly, the protein content of the products made with undehulled flours (50% and 100%) were higher than the dehulled counterparts.

Table 2 also indicates that, the ash content in the *Kum-Allory* (undehulled and dehulled) products were significantly ($P < 0.001$) higher than that of the control. Comparatively, the mean scores of the ash content in the products made with (50% and 100%) undehulled flours were higher than that of the dehulled products, except for products with 25% dehulled flour which was significantly higher ($P < 0.001$) than that of the undehulled flour products.

From Table 2, crude fibre content of the products was significantly ($P < 0.001$) higher than the mean score of the control. Comparatively, there was no significant difference ($P > 0.05$) in the mean score of the crude fibre content in the 25% undehulled and dehulled products. However, there was significant difference ($P < 0.001$) in the crude fibre content (50% and100%) of the undehulled and dehulled products respectively. The results of the current study are consistent with findings of Olayiwola et al. (2013) who reported a significantly ($P < 0.05$) higher contents of crude fibre of cowpea flour (10.79%, 10.56% and 10.36%) for all recipes compared with the control recipe (100% cocoyam flour).

Table 2 also revealed that the mean score of the fat content in the control product reduced significantly ($P < 0.001$) from 17.5% to 3.2% in the cowpea based products. Excessive intake of dietary saturated fats has been associated with the development of hypertension, cardio-vascular diseases, obesity, cancers of the colon, breast and prostate (Bruhn et al., 1992; Jiménez-Colmenero et al., 2001). It is observed in the same table that carbohydrate content of the cowpea-based products was significantly ($P < 0.001$) higher than that of the control. However, the carbohydrate content increased significantly in the 25% and 50%, but reduced in the 100% products respectively. This result suggests that carbohydrate content in the cowpea products decreased with an increase in inclusion rates of the cowpea flour. The calcium content of the cowpea-based products was significantly ($P < 0.01$) lower than that of the control products. Comparatively, there was significant difference ($P < 0.01$) in the levels of calcium content of 25%, 50% and 100% undehulled products. Similar observations were made in the dehulled products. This result suggests that calcium content in cowpea products fluctuates with an increase in an inclusion of cowpea flour.

Sensory evaluation

The results of the sensory evaluation of the undehulled cowpea products, are presented in Table 3. It was realised that the colour liking was significantly ($P < 0.001$) lower in *Kum-Allory* than the Quiche Lorraine products. The taste, aroma, texture, flavour, attractiveness and acceptability ratings of the control product was significantly ($P < 0.001$) higher than the experimental products. These differences could be explained by the lower fat content of the cowpea-based products (Table 2).

Results on the sensory evaluation of dehulled cowpea products is presented in Table 4. The mean scores ranged from 4.53 to 5.95. Among these samples, sample 504 had the lowest sensory value ranged (4.53-5.61) while the highest sensory value was reported in the sample 304, similar to the control sample (4.89–5.95). The results indicated that there are significant ($P < 0.05$) differences in the colour, taste, aroma and acceptability, whilst it was observed that there is no significant ($P > 0.05$) difference in texture and other parameters of the dehulled cowpea samples. The similarity in the rating of the products is an indication that the products were similar in appearance and taste, and therefore, when such products are in the market, consumers would not select against them.

Costs of producing Quiche Lorraine and *Kum-Allory* products

The costs of producing the products are presented in Table 5. It is obvious from the results that the cowpea-based product is much cheaper, compared to the control products. The total cost of producing about 1.835 kg of *Kum-Allory* was GhȻ 69.00, whiles that of producing 1.630 kg of Quiche Lorraine products was GhȻ 116.50. It implies that the unit cost of the new product which is GhȻ 37.6 is lesser than the per unit cost of the control (GhȻ 71.50).

Shelf-life of the new product

The new products, prepared from the flours of whole and dehulled cowpea have a short shelf life outside the refrigerator. It is therefore concluded that the product cannot stay outside the refrigerator for more than 24 hours (280°C), but could stay for a week under refrigerated (4°C) condition.

Conclusions and Recommendations

From the result obtained, it can be concluded that wheat flour can successfully be substituted with 100% cowpea flour snack products without adverse effects on acceptability, but with reduced costs, up to about 47% in the cowpea-based products. Also, cowpea-based products had higher yields during production, thus higher quantities of batter were obtained, compared with the wheat flour products which will result in high profit. Above all, the cowpea-based products were higher in crude protein, with lower fat contents, hence, an ideal product for diabetics and cardiovascular patients.

It is recommended that consumer education on health benefits of consuming cowpea-based products, to help alleviate protein malnutrition among rural folks, especially women and children. Snack producers should adopt *Kum-Allory* product, and commercialize it for reduced production costs for improved profit margins.

Author Biographies

Patience Darko holds a Bachelor of Education in Home Economics (Food and Nutrition) from University of Education, Winneba. Ms Darko has taught for the past 15 years and is currently teaching at Archbishop Porter Girl's Senior High School, Takoradi. She is an MPhil student near completion and she teaches in Home Economics (Food and Nutrition) at the University of Cape Coast. Her areas of interest are Nutrition and Health Education.

Professor Sarah Darkwa is a professor of Food Science at the University of Cape Coast where she has taught courses in Food Science since 2000. She has been a professor for the past 22 years. Professor Darkwa served as a Head of Department of VOTEC (2010-2013) and is currently the Vice Dean of the Faculty of Science and Technology Education, University of Cape Coast, Ghana.

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The Emerging Identities of Student Teachers in Handicraft and Home Economics in Estonia

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Teacher education plays a central role in the formation of their professional identity. Although the field of teacher identity studies is broad, there has been little research on handicraft and home economics (HHE) student teachers in particular. This qualitative study, which was undertaken in an Estonian university, focuses on identity formation among five such student teachers during their first year of teacher education by applying a narrative method and thematisation to quantitatively analyse the participants' writings. Theming the data shed light on the developmental aspects of first-year learning and revealed the existence of three types of student teacher: gentle practitioner, self-developer and dewy-eyed beginner. The results demonstrate a need for flexibility in teacher education programmes, including supportive and purposeful encouragement, because of the students' varying backgrounds and experiences and the individual nature of teacher identity formation.

KEYWORDS: STUDENT TEACHER IDENTITY; TEACHER STUDIES; HANDICRAFT; HOME ECONOMICS

Introduction

Becoming a teacher is not only a matter of education; many societal factors affect the general perception and prestige of the profession (Bergmark et al., 2018), and these same factors influence a potential candidate's decision to enter teacher education. Once enrolled, the programme's efficacy in shaping students' identities as teachers so that they satisfy the demands of the relevant educational system becomes a key issue. Because the process of becoming and being a teacher is significant, identity studies have come to represent an extensively researched area in the field of teacher education (Izadinia, 2013). Knowing more about how teachers' identities are formed and the various factors that influence this during initial teacher education will enhance understanding of the process of becoming a teacher.

The identity development of class (Anspal et al., 2012), music (Ballantyne et al., 2012) and many other types of teacher (Ballantyne & Grootenboer, 2012; Hall, 2010) has been explored, but studies on prospective teachers in home economics or crafts are less common. The present study therefore focuses on student teachers of handicraft and home economics (HHE) which is taught as one subject in Estonian schools. With an awareness that context influences identity development (Flores & Day, 2006), the aim is to expand general understanding about identity formation among student teachers in different subject areas. This information will be valuable for the development of effective teacher education programmes, specifically for supporting student teachers throughout their educational journey (Estola, 2003) and for planning more fluent learning paths for them (Ahonen et al., 2015). To reveal how Estonian student HHE teachers form different identities, this study analyses their own writing by using narrative methodology (Clandinin & Caine, 2008) to collect their stories and interpret their personal experiences of the first year of the two-year master's programme.

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The Formation of Identity in Teaching

Becoming a teacher requires developing at both the personal and the professional level (Meijer et al., 2011), and this development can be seen as the formation of identity as a teacher. A review of identity studies among Dutch teachers by Beijaard et al. (2004) reveals the complexity of the concept and identifies four vital features of professional identity development in teaching:

1. It is a dynamic and ongoing process. In addition, Walkington (2005) highlights the dynamic nature of student teacher identity through the continuous formation and reformation of beliefs about teaching and being a teacher. Bullough (2008) states that students' personally and culturally embedded self-conceptions are resistant to change, as change requires self-study, which is why teacher education must be "long and intense" (p. 229).

2. It implies both person and context. One side of identity formation among student teachers is personal; it relates to an individual's own experience of learning and the meanings they create through the education process (Farnsworth et al., 2016; Flores & Day, 2006). The other side is a socially constructed negotiation of the meanings (Wenger, 1998) that are contextually situated and only understandable in that context. Beauchamp and Thomas (2009) further suggest that community heavily impacts new teachers whose identities are relatively tentative.

3. It is formed of various sub-identities, as related to these different contexts and relationships (Beijaard et al., 2004). During their studies, student teachers are often facing dilemmas, tensions and struggles between what they desire and what is possible in reality (Beijaard et al., 2004; Pillen et al., 2013; Rogers, 2011). For example, in addition to the general context of teaching in the outside world, common media portrayals of teachers can also influence how they perceive their identity (Estola, 2003).

4. It is related to agency. Eteläpelto et al. (2013) define agency in teaching as directed work-related phenomena in which a teacher exerts influence, makes choices or takes a stance in ways that affect their work and/or their professional identity. In teacher education, agency can be developed during teaching practice in schools.

Adding to the studies that emphasise contextual factors, Beauchamp and Thomas (2009) draw on research that shows that the choice of subject may also affect identity since some disciplines have particular teaching cultures. In some humanities, such as art or music, the dilemma of being both artist and teacher is also present (Ballantyne & Grootenboer, 2012; Hall, 2010).

It has been widely established that HHE teachers should emphasise a broader understanding of the subject rather than having a narrow focus on practical skills such as cooking and sewing (Paas & Palojoki, 2019; Dewhurst & Pendergast, 2008; Hjälmeskog, 2013). In Estonia, HHE is firmly rooted in history and tradition. Although the aims of the subject have evolved in line with societal and curricular changes, there is a great deal of work to do in terms of gaining general acknowledgement of HHE's importance (Paas & Palojoki, 2019). Discussions about the status of these subjects have occurred in other countries (Dewhurst & Pendergast, 2008; McGregor, 2010; Owen-Jackson & Fasciato, 2012), and these debates may themselves influence a student teacher's emerging professional identity given its connection to social context and relationships.

The Challenges of Teacher Education in Estonia

Educational systems in many countries, including Estonia, are struggling with ageing teaching staff and a shortage of young teachers. There are many reasons for this, including the diminished prestige of the teaching profession and its low income compared to other intellectual disciplines (Keskula & Loogma, 2017).

Teachers' education is also relevant to this situation since the qualification status of those already working in teaching is critically important to educating new teachers. Student teachers acquire their experience and understanding of the subject from being involved in everyday school life and will work with qualified teachers as their supervisors during practical modules. This role of supervisor during training is therefore significant in supporting the formation of the student teacher's professional identity.

At the moment the most common way of becoming an HHE teacher in Estonia is to complete training at a teacher education institution, following either the integrated/concurrent or the consecutive model (Sarv, 2014). In the consecutive model, students complete a two-year teacher-training master's course after obtaining a BA in their subject specialisation. After completing their subject degree, therefore, graduates could enter professions or subjects other than teacher education. This also means that some student teachers complete their subject studies without a teaching career in mind (Löfström et al., 2010). One consequent challenge is how to lock promising candidates into teaching earlier and to provide them experience of teaching practice.

A range of backgrounds can be seen among entrants to HHE teacher education. Owen-Jackson and Fasciato (2012) investigate student teachers in design and technology, which covers HHE subjects, in England and find young, freshly graduated students as well as experienced professionals of other fields beginning their postgraduate training having already achieved partly relevant subject expertise. Likewise, incoming Finnish student teachers in home economics have been found to be heterogeneous in terms of age and other background factors, for example vocational education as a cook (Soljanto & Palojoki, 2017). Changes in the age of student teachers can also be seen in the current statistics. In Estonia, those who complete teacher education are, on average, slightly over 30 years old (Selliov & Vaher, 2018). This heterogeneity forms a challenge for teacher educators since they have to recognise and acknowledge the various backgrounds of student teachers in order to support their process of becoming a teacher.

Research Questions

The research questions that this study aims to address are as follows:

- What experiences of identity formation do Estonian student HHE teachers have during the first year of their teacher education?

- What kinds of identities emerge in these stories of becoming a teacher?

The study was conducted in an Estonian university where teacher education is a main area of both research and teaching. We focus on first-year master's student HHE teachers.

Methodology

Narrative research in teacher education

The use of narrative research in education studies has been expanding since the late 1980s (Clandinin, 2016; Elliott, 2005). Cortazzi and Jin (2006) note the importance of narrative approaches for four core reasons: First, it focuses qualitatively on participant experience and the meanings they give to it. Next, a narrative perspective is concerned with representation and voice, and, third, it is characterised by an emphasis on both personal and professional qualities. Finally, it allows the research activity itself to be explored as a story (pp. 27-29).

More specifically, according to Clandinin (2016), narrative enquiry relies on a Deweyan view of personal experience grounded by two criteria, namely interaction and continuity. It is able to connect to the research space through dimensions of temporality, place and sociality (Clandinin, 2016; Clandinin & Caine, 2008). Moreover, the meaning of an experience is never detached from the environment in which the individual acts; as Chase (2005) states, experiences are socially constructed forms of action. Since teaching is a highly contextualised social practice (Battey & Franke, 2008), the process of becoming a teacher involves feeling connected to the teaching community of practice and becoming part of it (Lave & Wenger, 1991). The process of learning is also about becoming a certain kind of person, of forming an identity (Wenger, 1998).

In terms of representation, the narratives that are collected as research data focus on the experiences of certain groups, often minorities, whose voices might otherwise be unheard (Cortazzi & Jin, 2006). Narratives in teacher education research can therefore be said to represent different levels of experience, such as in initial teacher education, to pay attention to both the individuals and the group to hear their personal stories about their studies and lives (Elbaz-Luwisch, 2007; Schultz & Ravitch, 2013).

The third reason for the importance of narrative research relates to the personal and professional qualities it can reveal that other methodologies may fail to emphasise (Cortazzi & Jin, 2006). Learning processes of becoming a teacher are fundamentally nonlinear and unpredictable, and a narrative approach can provide more possibilities to understand the importance of subjective meaning making of social influences during teacher education (Bold, 2012).

Lastly, narrative research enables investigators to present their studies as stories. In teacher education specifically, stories of becoming (Blair, 2013; Estola, 2003) and being a teacher (Anspal et al., 2012; Søreide, 2006) are a useful means of representing participant experiences in a coherent and meaningful way. In our study, a narrative methodology is appropriate to acknowledging the individual experience and meaning of becoming a teacher and enables a deeper understanding of the relationship between personal perspective and social context.

Participants

All first-year students in HHE teacher education at the time of data collection were asked to participate in the study (*n* = 7). They had previously graduated from the HHE undergraduate degree at the same institution but not in the same year. This group had recently completed their first year of the master's course in which the emphasis is on pedagogical approaches, subject didactics and observing classroom practices through short school visits. During these school visits (six days per autumn and spring term) student teachers are also in front of the classroom to some extent, although not taking the entire responsibility of a teacher.

Participants varied in age from their early 20s to nearly 60. Most had earned a different degree or gained work experience in another professional field before beginning their HHE subject studies; only one had entered university directly from high school. There were two working teachers in the group, one with over 20 years of experience. This created a remarkably diverse backdrop for studying the emergence of teacher identities that would enrich the research data with a range of perspectives reflecting these different individual experiences.

Ethical issues

The first author held a dual role as both lecturer and researcher, conducting studies with participants who were also students and supervisees. It was therefore essential to address the particular ethical issues that could arise. To minimise the influence of the teacher-student power relationship, participation in the study was voluntary, and those who chose to participate were given no special reward. Guidelines from the Finnish National Board on Research Integrity (2019) were followed throughout the process. Information about the study was provided openly, and matters of anonymity, confidentiality and written informed consent were addressed explicitly to reduce any possible misunderstanding. The student teachers agreed freely to participate in the study and were aware of their right to withdraw at any time.

Data collection

The data for this study was the participants' stories of being first-year students on the HHE teacher education programme. To guide them, eight prompts were provided: How would you describe yourself at the beginning of your studies and now? What has changed? What was your view of being an HHE teacher before your studies? What is your understanding of being an HHE teacher now? What important moments in the first year most changed/supported your understanding of being a teacher? How do you imagine next year? Where do you want to develop as a subject teacher? Describe what you need to study further as a teacher and why these areas are important to you.

Participants received these guiding questions via email in June 2018 and five of the seven student teachers submitted their stories (Table 1; not their real names). Those who withdrew participation did so for personal reasons, including maternity leave and a lack of time to make substantial contributions. The final age distribution therefore shifted to between 20s and 40s as the most experienced teacher withdrew.

Table 1   **Participant Description**

Participant	Age (years)	Background experience
Anneli	42	Working teacher
Kadri	44	No teaching experience
Piret	42	Short-term substitute teaching experience
Triin	38	Past teaching experience; currently not working as a teacher
Maria	23	Directly from high school, no teaching experience

Data analysis

The stories or *field texts* collected represent the participants' reflective understanding and need to be understood as describing the relationships between different aspects of their experience (Clandinin, 2016). Data was entered in Atlas.ti (Version 8) software to identify common thematic elements across participants and the reported events (Riessman, 2006).

The stories were recorded in Estonian, and so the first author handled the initial reading, coding and categorising (Friese, 2016). It was then necessary to translate the data into English, ensuring that nuances of expression were maintained, to facilitate further analysis and discussion of the themes with the co-author. The thematisation was aimed at capturing the meanings behind the codes in each of the categories designating the challenges of becoming a teacher.

Besides these categories and themes, a typology of narratives was created (Riessman, 2006). Initially, this involved creating a condensed coherent story for each participant and devising a descriptive name for it. If similarities were perceived in three or more stories, these were combined into one "type". Established types differed greatly in terms of previous experience. This is how three narrative types were formed, in which one varied more significantly from the other two. It comprised writings from student teachers, who shared a love of handicraft and self-development, and had already studied and worked in another area, with one also having a short period of teaching experience in a different subject.

The stories contributed by the participants enabled a narrative description of several discernible identities in first-year student HHE teachers. To verify the story types, they were shared and discussed with the participants, and approval was received (Clandinin & Caine, 2008).

Results

Experiences of becoming a teacher

The participants' narrated experiences of their first year of teacher education capture the process of becoming a teacher. Their reflections on the personal changes they perceived are highly individual in light of their varied backgrounds and experiences as former school and university students, as mothers and, in one case, as a working teacher.

Studying teacher education was generally perceived as an opportunity for personal development and reflection. Participants recognised self-awareness during their studies:

> There was a lot of looking inside yourself, self-analysis and self-discovery. In everyday life, we do not do this very often, so I am pleased that we were forced to do so (Kadri).

During such self-discovery, several of the student teachers described nuanced possible futures; different feelings, such as confusion and concern about content or pedagogical knowledge, emerged in their reflections on being a teacher or student practitioner during their studies:

> I am not as competent as I should be (Kadri)

> Feeling insecure in front of the class (Piret)

and

> I need to work with professional language (Piret)

are just some examples. All participant stories shared the idea "I have lot to learn about teaching".

The first year of teacher education provided the participants with opportunities to become aware of the complexity of the teaching profession and associated activities. Their visions of a teacher's role expanded with reference to various aspects, including lesson planning, student motivation, availability of resources and taking responsibility as a teacher.

> Now I can see that the handicraft and home economics teacher has a lot of freedom, but also more responsibility, more choices, but also the boundaries set by the economic situation of the school. (Triin)

The most altered area of understanding was around the nature of HHE as a subject. By comparing the contemporary version of HHE they encountered in their first year with their previous school experience of it, participants became aware of its broadened content and shift in emphasis from thematic teaching to learning outcomes. For example:

> In contrast to my personal school experience when only the subject content was important … for example, home economics meant just cooking, or at least I understood it that way. (Piret)

They noticed that this change of focus creates a contradiction as teachers in HHE have to constantly justify the importance of the subject to "outsiders", including parents and students, to be recognised and valued.

Narrative typology

The stories written by the student teachers revealed three types of identity after their first year of teacher studies, namely the gentle practitioner, self-developer and dewy-eyed beginner. These types were derived from the participants' experiences, but they do not correspond to any of the individuals; these descriptive names are metaphors, for example, "dewy-eyed" reflects the inexperienced student.

The gentle practitioner

The working teacher in this study is represented by the gentle practitioner; her love of making things and cooking attracted her to teaching HHE several years ago. The gentle practitioner strives to learn and gain experience that is relevant to her work. As an educator, she seeks answers to questions relating to daily school life, such as how to motivate her students and help them master different skills. During her time in education, she has noticed that the role of subject teacher has changed and become more complex, and she is often required to justify the need for HHE, especially to parents.

She is particularly gentle and caring, perhaps even too much so. She is aware of the importance of self-assertion, but managing the intense first year of the master's and balancing her personal life, work and studies has caused significant stress.

> I just wanted to learn and gain new knowledge and experience. Of course, I overestimated my abilities. In the last three years, I have lived beyond my physical and mental resources. Continuous stress, fatigue and apathy have made my studies difficult. (Anneli)

The gentle practitioner aims to finish her studies and acquire qualification so that she can continue working in schools.

The self-developer

The self-developer (narrative compiled from three writings) focuses on handicrafts and learned about home economics during bachelor studies. At first, she did not intend to become a teacher, but the influence of others led her to teaching; it was not her dream but was somewhere in the back of her mind. For the self-developer, learning is a goal-oriented activity that involves self-discovery and continuous self-analysis. She is particularly self-aware in the process of becoming a teacher, but she knows this awareness needs time and experience. The following three excerpts demonstrate this awareness.

> It's probably the feeling that the more you know, the more you realise how little you actually know. (Kadri)

> These are the moments when I realise that I don't know anything about being a teacher and there is still a lot to learn. (Piret)

> I can't be someone I am not, but I still don't know exactly who I am. (Triin)

A self-developer is critical of herself and wants to give her best. For this reason, concerns arise about being incompetent, inadequate, soft and insecure. Nevertheless, she notices opportunities for additional learning.

This academic year has completely changed her understanding of the subject and of teaching. Her initial understanding was based on her own school experiences and on those of her children. She values the potential and creativity of the subject but feels that the freedom a teacher has can itself be a challenge with responsibilities.

Dewy-eyed beginner

The dewy-eyed beginner represents the youngest student teacher in this study. She was doubtful about continuing at the master's level and indecisive about her choice of subject. Being inexperienced, she believes acquired knowledge will be necessary in the future but is less so at the present time.

The dewy-eyed beginner wants to become a teacher because it involves continuous learning and self-development. However, she is currently unaware of her specific needs or the so-called holes in her development as a teacher because she has no practical experience in front of a class. A bowl metaphor was used to describe the beginner's experience of the first year:

> At the moment, I feel like a bowl in which all the necessary components have been put and are waiting to be mixed. And after tasting, you will understand what is missing. (Maria)

The master's had, however, already expanded her understanding of the nature of the subject teacher:

> I thought before that a handicraft and home economics teacher doesn't have a lot of homework (to control students' writings, etc.). But when I started learning [in the master's programme], it turned out that it is the same amount [as other teachers], if not more. (Maria)

Discussion

The results of this study outline the experiences of student HHE teachers in their first year of teacher education in an Estonian university. In this first year, the emphasis is on theoretical studies that are intended to prepare students for independent practical experience in the next academic year. They can also be seen to have begun developing as teachers and their perception of subject teaching evolves through short visits to schools. Similarly, Anspal et al. (2012) describe how first-year teaching students explore their motives for becoming teachers and relate them to previous school experiences as well as their perceptions of the different roles and competencies associated with the teaching profession. Their work also emphasises the positive but somewhat naïve perspective of beginners which the present study also identified in the insecurity of the youngest participant.

There is a need to understand the variety of adult learners to better meet their needs (Barnett, 2013), and the three types of emergent identity that unfold in the participants' stories reflect the differing needs of student HHE teachers in Estonia. In particular, the narrative of the gentle practitioner conveys a preference for practical knowledge and skills to manage everyday teaching; the self-developer wants to reflect on personal growth and engage deeply with her studies to acquire experience; and the dewy-eyed beginner aims to capture an overall impression of herself in relation to learning and teaching. Furthermore, the metaphor of the bowl, in which learned pieces of information are ingredients waiting to be mixed, provides a pictorial view of a young student teacher who has encountered a broad area of pedagogical studies and finds herself confused. These three narratives demonstrate the complexity of becoming a teacher in the formation of understanding about the self and the profession (Walkington, 2005); the interrelation of what one says, does and how one relates to others (Kemmis et al., 2014).

Our findings support the concept that identity is formed by attributing meaning to personal experiences of learning (Flores & Day, 2006) and under the influence of context (Lave & Wenger,

1991) which, in this case, is teacher education and short school visits. The three types of teaching student described show three different paths to becoming an HHE teacher in this setting. As Izadinia (2013) argues, teacher education programmes should recognise the prior experience and learning of the students and give them a voice in the training process. It is particularly important in our subject area to acknowledge the differences in student background to provide individually meaningful tools (such as digital or handwritten diaries) that support the development of professional teacher identity.

While Estonian student HHE teachers may come from many areas related to textiles or food, their readiness and motivation to acquire the content knowledge that a subject teacher needs are explored during the application process (Paas, 2015). This study focuses on the first of two years of master's study and provides identity paths based on those early experiences of the student teachers. However, the nature of identity development is dynamic and perceptions about teaching are likely to form and be reformed throughout the education process (Beauchamp & Thomas, 2009). Moreover, identity is a negotiated experience and a learning trajectory (Wenger, 1998) which in this context means learning to build an identity as a teacher. These initial experiences are important for continuing the teacher studies and for self-discovery about one's abilities and potential challenges in the specific subject. However, we should also be aware that student HHE teachers' perceptions of the subject are also likely to have been influenced by their own school teachers (Dewhurst & Pendergast, 2008).

Having engaged first-year students in this study, we may reasonably predict that they will make deeper discoveries about themselves and teaching as they progress through further phases of their studies, and that this will contribute to their ongoing identity development. Additionally, Walkington (2005) indicates that observational visits to schools give student teachers significant insight into how much work teachers do and how much management and preparation occur outside of the classroom, especially in practical subjects such as HHE. Through this, early, idealistic views of teaching are replaced with more realistic comprehension (Anspal et al., 2012).

These student teachers' first-year experiences are at the very beginning of their identity development, and the teaching experience they will gain in the subsequent year will be crucial for them to confirm or challenge their developing identities in real school context (Ballantyne et al., 2012). Therefore, there is a need for further research to explore how second-year experiences affect the student teachers' expectations of the profession and how their ideas about the nature of HHE will correspond with a real school environment.

This study indicates how the background heterogeneity of student teachers creates different starting positions in their pedagogical studies, as we have shown in our results. These differences require teacher education to be adequately flexible to serve various types of student in supportive and purposeful ways and to meet the learning needs of all students (Barnett, 2013). Flexibility can be achieved by taking account each student teacher's educational and work experience by planning individual learning paths for those who are working in the school while they are studying, and for those who have freshly started their teacher education. Applying digital technology and blended learning can be good tools for achieving this (Jonker et al., 2020).

The first year of teacher training challenges a student's capacity for self-management, develops their understanding of themselves and expands their comprehension of the teaching profession and their subject. They are required to reconcile sometimes conflicting knowledge from their past experiences, for example what they learned at university, with what they observe in school visits. Each student teacher carries their past experiences throughout their studies, and this will influence their learning trajectory, the following year's teaching practice and their future career as a teacher.

However, it is important to bear in mind the possible limitations of the study. Using stories as representing the student teachers' experiences may itself be a limitation given that this retrospective view relied on their ability to remember activities and feelings over the course of the year. To mitigate this, guiding questions were applied to concentrate on particular aspects of their past experiences and future perspectives. Nevertheless, such narratives are dependent on the context of both storyteller (student teacher) and audience (researcher) and are not intended to represent truth but "how experience is endowed with meaning" (Sandelowski, 1991, p. 165). As a consequence, the results of this study are not representative of or generalisable to all students in this subject area. Another limitation is the size of the group which was determined by the low number of student HHE teachers in their first year of study at this particular university and their voluntary participation.

Conclusion

Though based on a small student group, we conclude that teacher education should be more responsive to the development of teacher identities by acknowledging students' previous experiences. Instead of converging all forms of teacher education, there should be more individualised paths that allow divergence at a systemic level. Although the structure of teacher education in Estonia is unlikely to change anytime soon, we should nevertheless work to find the most effective ways of preparing new teachers through the acquisition of necessary competencies during their two years of study.

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Alternative Childcare Arrangement of Working Mothers in Sekondi-Takoradi Metropolis, Ghana

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Abstract

This research identifies alternative childcare arrangements of working mothers with children aged 0-3 in the Sekondi-Takoradi Metropolis and examines factors that influence mothers' choice of alternative childcare. The research design is a descriptive survey. The population for the study constitutes working mothers with children aged 0-3 years, who were teachers, nurses, bankers, traders, seamstresses, and hairdressers in Sekondi-Takoradi Metropolis. One hundred and fifty (150) respondents were conveniently sampled and a purposive sampling technique is used to select four Reproductive and Child Health Centers. The study results indicated that working mothers use relative and non-relative care as alternative childcare arrangements and considered good quality child care and trustworthiness of caregivers as important factors influencing their choice of alternative childcare. This research only examines alternative childcare choices of 150 working mothers who are teachers, nurses, bankers, hairdressers, seamstresses, and traders. The practical implication from this study is that alternative childcare arrangements selected and used by working mothers depict their family structure, ages, number of children, monthly earnings, and the kind of work they do. The working mothers should develop a good relationship with caregivers to ensure that children are not abused in their absence.

KEYWORDS: WORKING MOTHERS; MATERNAL EMPLOYMENT; CHILDCARE; ALTERNATIVE CHILDCARE; CHILDREN

Introduction

Over the last century, many countries have experienced a significant rise in female labour force participation, especially women with young children. In Ghana, the 2010 Population and Housing Census revealed that 54.8% of Ghanaian women are economically active, as compared to 50.1% in the 2000 Population and Housing Census Report, 51% in 1984, 47% in 1970, and 39% in 1960 Population Census (Ghana Statistical Service [GSS], 2010). Additionally, the Ghana Statistical Service Census Data puts females in public sector employment at 4.5%; 4.2% for females in the private formal sector and 90.9% for females in private informal sector employment (GSS, 2010).

Deacon and Firebaugh (1988) classed employment demands and household work performance of couples into traditional, additive, transitional, and reversed traditional roles. Within the traditional society, roles for both men and women have been stereotyped. Women are responsible for performing household and family work such as childcare, cooking, washing, cleaning, and managing the family. Traditional roles of women kept them at home and attracted no wage gain. However, as society evolved, there has been a shift from the traditional roles to additive and transitional roles. The additive roles enable women to maintain their traditional roles and add a new dimension; which is a gainful economic activity outside the home while the transitional roles allow for division of household labour among couples.

Women and mothers have for centuries been economically active the world over. Maatta (2008) states that "African women especially those from Ghana and Zambia in the 1950s and 1970 were the most

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economically active when compared to other African countries" (p. 55). However, they could still attend to childcare needs because without needing alternative childcare because the economic activities revolved around household production. Hansen et al. (2006) explain the concept of maternal employment as the engagement of mothers within the labour force whiles they are still caring for children aged 0-13 years. In Ghana, maternal employment cuts across both formal and informal employment and is either within the public or private sector. Formal sector employment in Ghana is regulated by the Labour Act (651) of 2003 which provides general work conditions for workers including women, their leave entitlements during pregnancy and after birth. The Labour Act (2003 §§ 1-3) states:

> A woman worker, on the production of a medical certificate issued by a medical practitioner or midwife indicating the expected date of her confinement, is entitled to a period of maternity leave of at least twelve weeks in addition to any period of annual leave she is entitled after her period of confinement.

> The period of maternity leave may be extended for at least two additional weeks where the confinement is abnormal or where in the course of the same confinement two or more babies are born.

However, the informal sector in Ghana which employs the majority of working mothers is not regulated by any labour law thus periods of respite after childbirth is determined by workers themselves or their employers.

Childcare is an umbrella term referring to any form of non-parental care that occurs on a regular basis (Huston et al., 2002). It is when a child is supervised and cared for by a non-parent or caregiver. A World Bank Report (2001) states that expanded income-earning activities of women in Ghana is requiring them to increase their use of available alternative childcare arrangements, which ranges from relative care to enrolment in childcare centers. Karpilow (1999) defines alternative childcare as care by a relative such as a grandmother or an aunt; in-home care by non-relatives such as a babysitter or nanny; and care in group settings such as centers and family child care homes. Similarly, Kimmel (2006) categorized childcare choices into five composite modes of care namely parental care, relative care, nanny or baby sitter care, non-relative care, and center-based care.

According to the Gender Database of the World Bank (2001), several factors influence the demand for various types of alternative childcare arrangements in Ghana. These factors include the nature of the mother's work, place of work (in her home or remote location), number and ages of children, and income levels.

Problem definition

Maternal employment and childcare are important research areas the world over because of the effects on both mother and child. Observation in Sekondi-Takoradi Metropolis of the Western Region of Ghana, reveals that most of the economically active women are in their childbearing age. The fundamental question that needs answers is, who cares for their children while they work?

Research objective

The objective of this study is to identify the alternative childcare arrangements used by working mothers with children aged between 0-3 years and examine the factors that influence working mothers' choice of alternative childcare in the Sekondi-Takoradi metropolis.

Research questions

1. What are the alternative childcare arrangements used by working mothers with children aged between 0-3 years in the Sekondi-Takoradi metropolis?

2. What are the factors that influence working mothers' choice of alternative childcare arrangements in the Sekondi-Takoradi metropolis?

Theoretical Framework

Preferences and Constraints Model

This model of childcare selection by Casper and Smith (2004) was developed from Becker's (1981) model of household production. The model states that families make decisions about their welfare subject to their constraints and preferences. This theory argues that parents weigh their preferences for different types of childcare services against competing preferences such as things that could be purchased with the money used for childcare and constraints such as time, money, employment schedules among others. The "Preference and Constraints" model emphasizes the economic costs and benefits mothers derive from using alternative childcare. Emlen (1998) states that parents' satisfaction is not predicted by the type of care, the intensity of care, or observable quality of care, but instead by the amount of flexibility the mothers have in the workplace and family, in relation to the alternative care arrangements chosen.

Notwithstanding assumptions of the theory, parents may prefer a care center with a focus on the developmental outcome of the child. However, if such alternative childcare is too expensive or not available to provide childcare during the parents' working hours, the family may choose relative care, which is relatively less expensive and provides care during non-traditional hours (i.e., at night, in the evening, and weekends).

The Ecological Systems Theory

The Ecological System Theory otherwise known as Human Ecology theory developed by Bronfenbrenner (1979), states that human development is influenced by different types of environmental systems. Personal characteristics of family members and the developing child are viewed as important elements in understanding parental behaviours in relation to child care choices. Bronfenbrenner (2002) identified five levels of ecosystems within the ecological system that are interconnected and are hierarchical namely; micro-system, meso-system, macro-system, exo-system, and chrono-system.

The micro-system encompasses the relationships and interactions a child has with the immediate surroundings such as the family, peer group, school, neighbours, teachers, caregivers. Interrelations between two or more micro systems such as parents and caregivers, children, and the school constitute the child's meso-system whereas the exo-system is an interaction between the micro and meso systems of a child's environment. Berk (2000) describes the macro system as the actual culture of the child. He explains that the macro-system encompasses values, customs, and beliefs of the community and society which defines the totality of a growing child. The ecological system is an active system, which is constantly developing and evolving. The chrono-system includes change or consistency over time not only in the characteristics of the person but also the environment in which that person lives. Examples of these changes are divorce, change in socioeconomic status, change in employment such as retirement or redundancy, and change in place of residence.
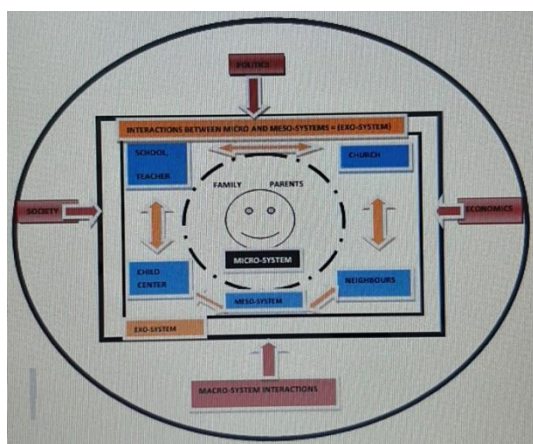

Figure 1   Ecological Systems Theory of Alternative Childcare Choice (Kumatia, 2014 p. 21)

Concept of Childcare and Alternative Childcare

Childcare is an umbrella term referring to any form of non-parental care that occurs on a regular basis (Huston et al., 2002). It includes care for a child by persons other than their biological parents such as relatives—grannies, aunties, sisters, nannies among others. According to Olson (2002 p.10), childcare also means "caring for and supervising a child or children, usually from newborn to age thirteen either by a parent or non-parent". Again, Youcha (1995 p. 13) defines childcare as "services which include actions or skills of looking after children by a day-care center, babysitter, or other providers". The term childcare service is typically linked to care provided by persons other than the child's parents (Olson, 2002). Youcha (1995) stresses that childcare includes socializing a child into society, putting institutional structures in place to cater to the educational, emotional, and health needs of babies. She said that children of working mothers can be cared for at home by extended family members, babysitters or nannies; outside the home in day-care, preschool, and in educational settings such as early childhood education centers, nursery, and kindergarten.

This research adopts Kimmel's (2006) categorisation of childcare and thus will categorize childcare types into four types namely:

- center-based care
- family care
- relative care, and
- non-relative care or in-home care.

Factors Influencing Childcare Selection

The choice of child care by families is a complex process that often occurs in conjunction with family decisions about employment (especially mother's employment). The common economic theory of child care choice argues that families (mothers) will consider both the quality and cost of various non-parental arrangements in maximizing their satisfaction (Meyers & Jordan, 2006). The cost of using parental care is lost wages and this will be weighed against the cost of alternatives and the value associated with different types of childcare care to determine optimal arrangement (Casper & Smith, 2004).

However, sociological and cultural theorists have argued that viewing child care choice from a primarily economic perspective results in the exclusion of many factors that play a critical role in child care choice decisions (Fuller et al., 2002).

In this research, the researcher uses an ecological model to organize and integrate previous research findings on factors that influence a mother's child care selection. These factors include individual level characteristics such as income, education, race and ethnicity, family structure, employment structure, children's age, gender, and other characteristics.

Research Methodology

The research design used for the study was a descriptive survey. A survey involves acquiring information about a group by asking questions, tabulating, and describing answers (Jackson, 2009). A major strength of a descriptive survey is its ability to acquire information from a larger sample due to the instruments used to collect data and the flexibility in administering the instruments. This design was chosen to enable the researcher to describe the characteristics of the population by inferring from what was found out about the sampled group and help answer the research questions and the purpose of the study.

The population for the research included all working mothers with children aged between 0-3 years in the Sekondi-Takoradi metropolis. The target population was categorized into six; comprising teachers, nurses, and bankers who made up working mothers within the formal sector whiles traders, hairdressers and seamstresses made up working mothers within the informal sector. The total sample size used for the research was 150 respondents comprising 25 mothers each from the various occupations selected. 150 was used because it is an ideal sample size considering the research design used for the study. A convenience sampling procedure was used to select working mothers who had children aged 0-3 years. According to Jackson (2009), convenience sampling is a non-probability technique where subjects are selected because of their convenience, accessibility, and proximity to

the researcher. Purposive sampling was used to select four Reproductive and Child Health Care Centers from various hospitals and clinics within the metropolis. According to Creswell (2007), a purposive sampling procedure is also a non-probability sampling technique where the selection of respondents or sites is based on the researcher's interest in characteristics possessed by respondents or the sites. The Reproductive and Child Health Centers (R.C.H.C) selected were the Effia-Nkwanta Regional Hospital, Metro Hospital, Kwesimintim Polyclinic, and New Takoradi Health Center. Respondents were selected using the information in their Child Health Record Booklet and mothers who were employed either as Teachers, Nurses, Bankers, Traders, Seamstresses, and Hairdressers were selected.

The questionnaire for data collection had an introductory part with information about the researcher and the aim of the study. It also assured respondents of ethical issues. The Bio-data section contained five items to elicit responses on mothers' age, marital status, occupation, managerial position, and level of education. Section A helped to elicit information from working mothers on alternative child care arrangements used. It contained six items, starting from 6-11. All six items were close-ended questions. Section B consisted of 12-20 items that were designed to elicit information from mothers on factors influencing their childcare arrangements. It contained 9 items of which 3 were close-ended whiles 6 were rating or Likert scale questions.

Data collection was done over a six-week period, taking into consideration the scheduled post-natal care dates for the various R.C.H Centers. Questionnaires were completed personally by respondents. For analysis SPSS (Version 16) was used to generate frequencies and make summaries of respondents' responses and for drawing conclusions.

Ethical consideration

The study was approved by the Department of Home Economics Education, University of Education, Winneba in partial fulfilment for the award of a Master's Degree in Home Economics. All respondents were informed and approval sort before responding to the questionnaire. This was contained in a statement on the questionnaire disclosing confidentiality. Also, letters were sent to all Health facilities used for the study seeking their permission.

Results

Table 1   Number and Ages of Respondents' Children

Occupation	Participants' no of children			Ages of children				
	Children per respondent	*n* respondent	% respondent	0-6 months	7-11 months	1 yr +	2 yrs+	3 yrs
Teachers (*N* = 25)	1	7	28%	2	1	1	1	2
	2	12	48%	4	2	2	2	2
	3	6	24%	1	2	1	1	1
Nurses (*N* = 25)	1	15	60%	3	2	1	6	3
	2	9	36%	1	2	1	3	2
	3	1	4%	0	0	0	0	1
Bankers (*N* = 25)	1	22	88%	4	6	3	7	2
	2	3	12%	0	1	0	0	2
	3	0	0%	0	0	0	0	0
Traders (*N* = 25)	1	6	24%	0	0	2	1	3
	2	5	20%	0	0	2	1	2
	3	14	56%	0	2	3	0	9
Hairdressers (*N* = 25)	1	12	48%	2	1	3	4	2
	2	5	20%	0	0	1	1	3
	3	8	32%	0	0	0	3	5
Seamstresses (*N* = 25)	1	10	40%	2	1	3	2	3
	2	8	32%	1	1	2	1	3
	3	7	28%	0	1	2	1	3
Total		**150**						

Note: Field data 2014

Table 1 shows that seven teachers (28.0%) had one child, 12 (48.0%) had two children while six (24.0%) had three children. Fifteen (60%) out of 25 nurses had one child, nine (36.0%) had two children, while only one (5.0%) had three children. Similarly, 88.0% of bankers had one child and three (12.0%) said they had two children.

Table 1 shows 14 traders (56.0%) had three children whereas six (24.0%) and five (20.0%) had one and two children respectively. Twelve (48.0%) hairdressers and ten (40.0%) seamstresses had one child each, 5 (20.0%) hairdressers, and eight (32.0%) seamstresses had two children each. Finally, eight (32.0%) hairdressers and seven (28.0%) seamstresses had three children each. This implies that teachers, nurses and bankers representing 50.0% of respondents within the formal sector had children aged between 0-6 months and 2 years respectively. Traders, hairdressers, and seamstress had a majority of their children between the ages of 1 year and 3 years respectively.

Table 2   Where Respondents Leave Their Children While Working

	Teachers		Nurses		Bankers		Traders		Hairdressers		Seamstresses	
	Freq.	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Home	4	16	6	24	5	20	4	16	7	28	7	28
Relative's House	8	32	8	32	9	36	7	28	3	12	2	8
Non-relative's House	7	28	11	44	11	44	8	32	5	20	3	12
Work	6	24	0	0	0	0	6	24	10	40	13	52
TOTAL	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**

Note: Field data 2014

Summary of Table 2 results show that 44% each of nurses and bankers and 32% traders left their children in non-relative's house, while hairdressers 40% and seamstresses 52% sent their babies to work. However, about one-third of the teachers left their children in relative's house.

Table 3   Location Where Respondents Leave Their Children

	Teachers		Nurses		Bankers		Traders		Hairdressers		Seamstresses	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Close to work place	12	48	18	72	17	68	15	60	19	76	21	84
In neighbourhood	13	52	7	28	8	32	10	40	6	24	4	16
TOTAL	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**

Note: Field data 2014

Table 3 results show 102 (68%) respondents left their children at locations closer to their places of work rather than the neighborhood in which they resided which recorded 48(32%).

Table 4   Persons Who Care for Children While Mothers Work

	Teachers		Nurses		Bankers		Traders		Hairdressers		Seamstresses	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Husband	2	8	3	12	2	8	3	12	2	8	1	4
Family member	13	52	2	8	9	36	13	52	11	44	14	56
House help/ Nanny/Baby sitter	10	40	20	80	14	56	9	36	12	48	10	40
Friend	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**

Note: Field data 2014

The results show that children of teachers (52%), traders (52%), and seamstresses (56%) were cared for by a family member that is grandmother, aunties, siblings, cousins, and other blood relations (relative care). Nurses (80%), bankers (56%), and hairdressers (48%) employed the services of house-helps/nannies/babysitters which is known as non-relative or in-home care.

Table 5   How Respondents' Children are Cared for

	Teachers		Nurses		Bankers		Traders		Hairdressers		Seamstresses	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Alone	6	24	2	8	3	12	5	20	8	32	9	36
In a group	19	76	23	92	22	88	20	80	17	68	16	64
TOTAL	25	100	25	100	25	100	25	100	25	100	25	100

Note: Field data 2014

The results show the majority of respondents (78%) claimed their children were cared for in groups with other children and only 22% claimed their children were cared for alone.

Table 6   Factors That Influenced Respondents Choice of Alternative Childcare

		Teachers	Nurses	Bankers	Traders	Hairdressers	Seamstress
Cost of alternative childcare							
Very Important	Freq.	21	20	19	21	19	15
	%	84	80	76	84	76	60
Important	Freq.	4	5	6	4	6	10
	%	16	20	24	16	24	40
Quality of care provided							
Very Important	Freq.	24	24	23	23	21	22
	%	96	96	92	92	84	88
Important	Freq.	1	1	2	2	4	3
	%	4	4	8	24	16	12
Environment or neighborhood in which your child will be cared for							
Very Important	Freq.	18	21	21	22	18	21
	%	72	84	84	88	72	84
Important	Freq.	7	4	4	3	7	4
	%	28	16	16	12	28	16
Distance from home or workplace							
Very Important	Freq.	21	22	22	20	19	20
	%	84	88	88	80	76	80
Important	Freq.	4	3	3	5	6	5
	%	16	12	12	20	24	20
Convenience to mother							
Very Important	Freq.	20	20	20	21	20	21
	%	80	88	80	84	80	84
Important	Freq.	5	5	5	4	5	4
	%	20	20	20	16	20	16
Trust (those who will be caring for children)							
Very Important	Freq.	22	23	21	22	22	18
	%	88	92	84	88	88	72
Important	Freq.	3	2	4	3	3	7
	%	12	8	16	12	12	28

Note: Field data 2014. Options for respondents to choose: *very important* (VI); *important* (I); *not sure* (NS); *less important* (LS); *not important* (NI). However, none of the respondents chose *not sure*, *less important* or *not important*

The results presented show that respondents agreed that all the factors listed above influenced their choice of alternative childcare, however (91%) considered *quality of care provided* as the most important factor while (85%) considered *trust in the people who care for their children* in their absence as the most important factor to be considered.

Discussion

Research Question 1: What are the alternative childcare arrangements used by working mothers with children aged between 0-3 years in the Sekondi-Takoradi metropolis?

The study depicts that teachers' and traders used relative care outside their homes, while nurses and bankers used non-relative care outside their homes. However, hairdressers used non-relative care but at their workplaces because their children were with them at work and cared for by a nanny, babysitter or house help. Seamstresses, on the other hand, used relative care at their workplaces. Their children were cared for by a family member while they work. Generally, the results show that respondents rely on access to relatives or non-relatives in choosing alternative childcare arrangements. Respondents used home-based care because they had access to relatives or non-relatives, flexible work schedules, and preferred to have their children close to the neighbourhood within which they reside. Teachers, nurses, bankers, and traders used relative and non-relative care as alternative childcare arrangements because it does not conflict with their work schedules. Also, their family structure gave them access to relatives/family support and they had younger and fewer children. However, hairdressers and seamstresses who had control over the nature of their work preferred to send their children to work.

Seo (2003) posits that the ecological system theory of childcare selection by working mothers explains why even better-educated parents would go for relative care within their neighbourhood because there is a relationship between parental beliefs, behaviours, and childcare choices. Again, Johansen et al. (1996) in their study found out that mothers with greater access to relatives or caregivers appear to place less value on the educational aspects of early childhood care. Rodd (1997) also said working nursing mothers mostly prefer their relatives to be with them, consequently, mothers most often leave their children with their family members in the house. According to Han (2004), the ages and number of children a mother also determines what types of alternative childcare to use. He explains that when children are relatively younger parents prefer home-based care because it is difficult to find a center-based care center that will provide all the component childcare. This explains why respondents are using relative care and non-relative care. These findings are consistent with the assumptions of the *preferences and constraints* model that parents choose alternative childcare based on their preferences such as access to relatives or non-relatives (care givers).

Research Question 2: What are the factors that influence working mother's choice of alternative childcare arrangements in Sekondi-Takoradi metropolis?

With regard to the factors that influence working mothers' choice of alternative childcare arrangements in Sekondi-Takoradi metropolis, the study revealed that more than 90% of teachers, nurses, bankers, traders, and seamstresses viewed the quality of care provided for their children as the most important factor that affected their choice of alternative childcare arrangement while hairdressers indicated that trust for those who will be caring for the children. Spodek (1995); Shonkoff and Phillips (2000) in a similar study found out that the quality of child care arrangements was essential to the development of a child. They explain that if this quality is not provided, it affects the effective relationship between the mother and the child. Quality childcare as outlined by Bredekamp and Copple (1997) encompasses several aspects such as responsive caregiving, high staff-to-child ratios, responsive environment, competent staff, cultural and linguistic continuity, primary caregiving among others. These aspects of quality childcare and its rippling effect on childhood development inform mothers' choices.

The responses from respondents give an indication that the ecological systems theory by Bronfenbrenner (1979) is the best theory applied in the choice of alternative childcare arrangements. This is because all respondents indicated that the factors were important in their choice of alternative childcare. Ecological systems theory gives a holistic view of childcare choice as outlined by Bronfenbrenner (1994) in his systems level of interaction and interconnectedness.

Fuller et al. (2002) said that in the choice of alternative childcare social, cultural, economic and environmental conditions all come into play and that if the emphasis is laid on economic conditions other important factors will be significantly affected. The ecological systems theory dwells on this assumption and explains human behaviour based on interactions between levels of systems in their environment. Again, on trust in caregivers, the majority of respondents (70%) agreed that it is an essential component in choosing alternative childcare. Spodek (1995) states that human life depends on modelling and emphasized that the caregivers must exhibit trustworthy behaviours for children to emulate and that will influence their future living.

Findings

Teachers used relative care in or outside their own homes; nurses, bankers, and traders used in-home care or non-relative care outside their homes and hairdressers; seamstresses used non-relative care by house helps, baby sitters, or nannies at their places of work.

Quality of care to be provided for children was the most important factor that influenced teachers, nurses, bankers, trader, and seamstresses in their selection of alternative childcare and trust was the most important factor that influenced hairdressers.

Conclusion

The alternative childcare arrangements selected and used by working mothers depict or reflect their family structure, ages and number of their children, and the kind of work they do (the flexibility in their work schedules, access to maternity leaves).

Good quality childcare is an essential component of holistic childcare. It helps mothers to relax and be at ease since they know their children will be well cared for. Additionally, children have all aspects of their development catered for, that is, social, emotional, physical, and psychological.

Recommendations

Working mothers should develop a good relationship with caregivers to ensure that children are not abused in their absence. Mothers must ensure that blood relation or hired caregivers are mature and have enough experience in childcare to provide safe and quality care.

There should be a National Early Childhood Care Policy that will factor in the needs of children aged 0-3 years. This will improve the quality of care to be given, reduce trust issues and the risk of using unqualified caregivers as well as reduce the cost involved in engaging the services of private alternative childcare providers.

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The Future of Home Economics Teaching: Teachers' Reflections on 21st Century Competencies

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Abstract

Home economics (HE) teachers are obligated to develop their education so that the subject is current and promotes the well-being of the individual, family and larger community. This qualitative study provides insight into the student competencies and skills that Finnish HE teachers perceive to be important in the future and also how HE teaching should evolve to meet these needs. Data about future competencies and teaching practices among Finnish HE teachers were collected during an in-service training session that was organised after recent curriculum changes and updates. An interactive online discussion was used consisting of written reflections of 14 upper-secondary Finnish HE teachers that taught 21st century HE competencies (e.g., housing, textile care, food preparation and consumer skills). They said that this combination of skills promoted pupils' reflective thinking, which they will need at home, work and in the wider society. Teachers also said that personal development skills help build students' self-confidence and facilitate the joy of learning, which promotes wellbeing. Teachers valued HE literacy skills including housing and textile care, consumer knowledge and recipe literacy. Teachers also highlighted digital technology skills as important HE skills. Concerning the future of HE teaching, the teachers aimed to reduce teacher-directed lecturing and reduce contents and cooking in their lessons. Instead, they aimed to increase student-centred learning through the use of suggested pedagogical tools.

Introduction

Today's homes are involved in shaping the future since the lifestyle choices people make in everyday life have a far-reaching impact on both a local and global level. Societies are also changing rapidly and coming generations will face multiple societal and environmental challenges such as climate change, globalization, poverty and economic inequalities. Today's educational institutions need to prepare the future generation for the challenges of a constantly changing society and somehow capitalize on the novel pedagogical potential of digitalization. Recently, many countries have pursued school reforms that emphasise 21st century skills or competencies (Dede, 2010) that emphasise creative knowledge work in a digital society.

The future of Home Economics (HE) is a recurrent topic in the HE profession and the future development of the discipline has been addressed by various researchers (e.g., Harden et al., 2018; IFHE, 2008; McGregor, 2008a, 2011; Pendergast, 2012; Smith, 2019). Despite active research on the future of the discipline and profession, the view of the future direction of HE as a school subject has

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gained modest scholarly attention. Dixon (2017) studied six Home Economics teachers' perspectives of the possible future direction for HE education in New Zealand. Her study showed that teachers believe in the future of the subject that it creates meaningful future outcomes for the students despite the fact the public does not see it that way. The skills that the interviewed teachers mentioned were cooperation and collaboration, critical thinking and problem solving.. This study continues the discussion on the future direction of HE education from teachers' perspectives.

In the field of HE science, there seems to be a need for the research on teachers' views and perspectives of how their subject should evolve. Thus, the purpose of this study is to investigate and explain what Finnish HE teachers perceive as necessary future skills for students.

The present study asserts that HE is critical when it comes to teaching future skills for life beyond formal schooling. HE has tackled such issues and it has the potential to provide the tools for sustainable practices in everyday life (e.g., Haapala et al., 2014; Øvrebø, 2015). HE as a school subject has always been multidisciplinary in nature and the subject's goal has been to improve the quality of everyday life for individuals, families and households (Arai & Ohta, 2005; Elorinne et al., 2017). The multidisciplinary nature of home economics means that there is a wide variety of research issues and disciplines (e.g., food, family, consumer and education sciences) applied and theorised. As McGregor (2011) has argued, HE is fragmented and there are many specializations, which are too far from its original common core. However, HE is intricately linked to promoting a quality life in the context of school and adult education and its multidisciplinary approach can be a resource for HE teachers (IFHE, 2008). For example, the multidisciplinary nature of HE is beneficial when HE teachers educate young people to address the problems that are present in an age of climate change (McGregor, 2012). According to Finnish curriculum guidelines, HE teachers decide on what everyday skills they will teach to their pupils.

As we previously mentioned, research tradition of HE is fragmented and closer examination shows it is focused on particular content areas, such as education about food (Höijer et al., 2011; Murphy, 2011), nutrition (Hokkanen & Kosonen, 2013) and consumer strategies (McGregor, 2008b). Other recurrent themes are food preparation and the use of recipes (Brunosson et al., 2014; Granberg et al., 2017); food literacy (Brante & Brunosson, 2014; Ronto et al., 2017); citizenship and gender equality (Arai & Ohta, 2005) and sustainable development (Dewhurst & Pendergast, 2011; Gisslevik et al., 2017; Haapala et al., 2014). In addition, there is also research from a broader perspective such as professional practice (e.g., McGregor, et al., 2008), professional development (Kuusisaari, 2013, 2014; Smith & de Zwart, 2016) and philosophy (e.g., Nickols & Collier, 2015; Vaines, 1990) and how these impact the practice of HE (e.g., Benn, 2009; Smith, 2009).

From a HE subject point of view another interesting strand of HE education research is HE pedagogy and curriculum studies, which have focused on pedagogical perspectives for HE education (Smith, 2017), pedagogical approaches to support students in the development of critical thinking, employability and lifelong learning skills (Poirier et al., 2017) and a comparison of contemporary curricula from Finland, Norway and Sweden (Tuomisto et al., 2017). This study contributes to research on the future direction of HE pedagogy and HE curriculum from teachers' perspectives.

It is notable that earlier studies focused on students' critical thinking and certain individual skills yet little scholarly attention has been devoted to an analysis of the broad spectrum of HE skills. Paas and Palojoki (2019) did a comprehensive study of Estonian Handicraft and HE teachers' aims and challenges. Our research continues the discussion of the variety of HE skills by studying Finnish HE teachers' views on the skills they considered useful and necessary in young people's future lives. This study analyses the teachers' perceptions of what they address as important future skills and competencies in HE classes and what they think they need to change in their teaching. The aim of the study was to analyse teachers' perspectives on how the contents of HE and their teaching should evolve as a school subject. The research questions were the following:

1. What skills and competencies do HE teachers expect to be important to students in the future?
2. What do teachers consider as developmental goals to improve in their own teaching practices?

21st Century Competencies and Skills and Their Interpretation

There are several definitions for the concept of 21st century competencies (Ananiadou & Claro, 2009; Binkley et al., 2012; Dede, 2010) that have been recommended by diverse organizations such as Organisation for Economic Co-operation and Development (OECD) (2005) and the Directorate-General for Education, Youth, Sport and Culture (2008). These have been widely adapted and included in national curricula in many western countries. In this study we consider the term 21st century competencies as an umbrella concept of desired skills and competencies for a person to survive in a future society (Binkley et al., 2012). The emphasis is on higher level thinking skills (creative thinking, problem solving and critical thinking), communication and collaboration skills as well as tools of digital technology and digital literacy skills. Moreover, the framework of an ever-changing world with both global and local citizenship demands certain life skills and intrapersonal responsibilities are seen as prerequisites for the future. For example, the cultivation of students' creative and innovative skills is vital and present-day students are expected to engage in creating and sharing by capitalising on versatile digital technologies (Hakkarainen, 2009).

Although the term 21st century competencies and skills might seem rather recently introduced (Salas-Pilco, 2013), actually skills, such as critical and analytical thinking and problem solving are noted by philosophers and educators from ancient Socrates to 20th century John Dewey (Silva, 2009). The inclusion of 21st century competencies and skills in national curricula can be seen as a two-sided matter; on the one hand, 21st century competencies can be considered as a political way to manage and control human capital via education and on the other hand, these competencies can be seen as individuals' necessary skills for the future.

The terms *competencies* and *skills* have been used interchangeably in the literature. According to Wang (2019), *competency* is an integration of knowledge, skills, attitudes and values that are required for citizens to participate fully in society in the 21st century (Ananiadou & Claro, 2009; Directorate-General for Education, Youth, Sport and Culture, 2008; National Research Council, 2012; Voogt & Roblin, 2012). According to the European Commission's CEDEFOP glossary (CEDEFOP, 2014), *a competence* includes cognitive elements such as the use of theory, concepts and tacit knowledge and it also involves technical skills and interpersonal attributes such as social or organizational skills and ethical values. Home Economists McGregor and MacCleave (2007) have emphasised that *competent* professionals are able to solve practical problems in a creative and holistic manner instead of mastering a set of discrete skills. Thus, competencies encompass ways of thinking and knowing (e.g., analysis, synthesis, interpretation, critical reflection) and transforming thinking in response to diversity and change. The CEDEFOP (2014) glossary defines *skills* simply as the ability to perform tasks and solve problems. Generally, in the HE literature, skills have a broader meaning than a mere ability to perform tasks and solve problems as it also includes critical thinking and capabilities to participate in society as an active citizen (Smith & de Zwart, 2010). In the context of HE, Aulanko (2008) states that skills are difficult to explain in words because skills contain theoretical knowledge and technological abilities. For example, cleaning skills combine theoretical knowledge of what and how to perform a task, tacit knowledge as well as the ability to use and apply equipment and materials. A skill also comprises cooperation between the machine and body and these skills are learned through training (Aulanko, 2008). To conclude, a competence in this study refers to a broader concept than skills that comprises skills in the above-defined broad sense together with knowledge, attitudes and ethics (CEDEFOP, 2014; Ananiadou & Claro, 2009). Thus, HE competencies involve acquiring and mastering of such living skills that are vital in the society. HE competencies can be seen not only as skills necessary for living in the home and society but also as competencies for improving the quality of everyday life for individuals, families and households. Smith and de Zwart (2010) have noted that HE also provides individuals with practical life and independent living skills.

Home Economics in the Finnish Curriculum and 21st Century Competencies

The latest Finnish National Core Curriculum for Basic Education [FNCBE] (Finnish National Board of Education [FNBE], 2014) sees 21st century skills as transversal competence that is embedded in each school grade and subject including HE. The FNCBE (FNBE, 2014) emphasises the acquisition of 21st century skills and preparation of students for the challenging and changing working life, without mentioning 21st century skills explicitly. The curriculum shifts the focus from content knowledge (what teachers should teach) towards teaching the students higher-level learning skills such as collaborative learning, multiliteracy and digitalization together with subject knowledge.

There are seven transversal competences in grade 7-9:

- thinking and learning to learn (T1)
- cultural competence, interaction and self-expression (T2)
- taking care of oneself and managing daily life (T3)
- multiliteracy (T4)
- ICT competences (T5)
- working life competence and entrepreneurship (T6), and
- participation, involvement and construction of a sustainable future (T7).

These transversal competencies and environments that are supportive for learning are introduced in the subject-specific curriculum. However, the curriculum does not provide detailed guidelines about the actual teaching of HE, the detailed content that should be covered or what materials and techniques should be used. For example, the teaching of HE guides young students to think critically and become aware of various social, environmental, cultural and economic issues related to everyday life.

Home Economics is compulsory in the 7th grade and an optional subject in 8th and 9th grades. The objectives of instruction in HE are: Practical work, Cooperation and Interaction and Information management (FNBE, 2014; NCBE, 2016). These objectives are pursued in teaching through key content areas of HE, which are in the FNBE (2014) for grades 7-9 (students aged between 13-16 years):

- Food knowledge and food culture (food preparation and baking, choices and habits related to food, nutrition, food safety and economical and ethical food choices);
- Housing and living together (family, textile care and house management, home technology, use of services and home design) and;
- Consumer and financial skills at home (consumer rights and responsibilities, ability to make informed and responsible decisions, use media and technology, budget and use money in households) (FNBE, 2014; NCBE, 2016).

The development of future teaching

The development of an HE subject is not only a matter of developing the content but also the methods and practices of teaching it. For this reason, we also examine what teachers think about how their teaching should evolve. Reflection and the use of theoretical knowledge are the basis for the development of teaching (Kessels & Korthagen, 1996; Kuusisaari, 2010; Lunenberg & Korthagen, 2009). According to the studies focusing on the development of teaching and the teacher's self-reflection (e.g., Kessels & Korthagen, 1996; Loughran, 2002), the teacher's pedagogic thinking (Kansanen et al., 2000) and the teacher's practical wisdom (Lunenberg & Korthagen, 2009), the development of teaching involves combining research-based theoretical knowledge and teachers' own self-reflection. Regarding the development of HE teaching, Kuusisaari (2016) found that the HE teachers who were able to develop new teaching practices collaboratively were the ones who reflectively questioned their existing practices, then consciously aimed to create new practices and then based the development of new ideas of teaching on theoretical knowledge, namely learning theories. The in-service education, which is the context of the present study, was based on the concept of *developmental collaboration* (Kuusisaari, 2016).

Developmental collaboration can be described as a theory-based further development of ideas through questioning them, forming new ones and making them more concrete in peer-to-peer collaboration (Kuusisaari, 2016).

Method

The context of the study and data collection

The context of this study is an in-service education course that was arranged for volunteer HE teachers in metropolitan area to develop new teaching practices and adjust their expertise to FNBE (2014) changes. The first author designed this training with an experienced HE teacher, worked as an educator on the course and collected data. This in-service education course was organised in the theoretical framework of educational Design-Based Research (DBR). Educational DBR represents a

research strategy of the learning sciences that pursues educational innovations through iterative cycles (Bereiter & Scardamalia, 2014; Bielaczyc, 2013; Brown, 1992; Cobb et al., 2009; Collins et al., 2004; Sandoval & Bell, 2004). The data in this study was collected during the orientation phase of the in-service training, when teachers analysed existing teaching practices and the contents of home economics as a subject (during the first and second phase of DBR). The start of the course was organised to support structured reflection to facilitate critical thinking that disrupts hegemonic ways of thinking and teaching of HE. The first phase of research encompassed defining the learning problem, that is, a development goal; the teachers analysed existing teaching practices and the contents of home economics as a subject. The second phase involved designing a thematic teaching unit/programme collaboratively. These (3-5 lessons long) thematic teaching units were derived from teenagers' world of experience and integrated the use of technology into teaching.

The third phase (testing) included the introduction of innovations into school lessons; teachers taught the lessons they developed at school (first iteration) and then shared their results and experiences, which prompted the further development of their lessons. The fourth phase brought results, the final design of innovations into lessons (second iteration). Three teacher teams wrote three articles about developing their teaching units further for other teachers to use. The first author of this article then edited these articles and they were published as a format of free e-publication (PDF); this concluded the design research cycle.

The data consists of 14 teachers' online reflections about their work as teachers of HE. The teachers were experienced home economics educators and their work experience varied from 9-35 years. They were asked to reflect on this question: *What knowledge and skills will young people need in their near future and after 20 years?* Data collection was conducted by using a Moodle online platform, where teachers posted their writings that related to the overall assignment. In total 37 A4 size pages, in Times New Roman 12 pt. font were collected and analysed by the first author.

Analysis of teachers' reflections on future skills and goals

The first author arranged the data collection and its analysis. Qualitative content analysis was conducted on the teachers' written texts posted in Moodle. The teachers wrote their reflections freely and most of the teachers did not answer the presented questions directly. Thus, after careful examination of the written texts, the analysis was focused on those portions of teachers' written texts that related to the research questions. Thus, the data consists of portions of extracted text, that were concerned with the future aspect of the HE subject. In total, 14 teachers had posted 81 posts consisting of several statements or paragraphs. Twenty-five of 81 posts focused directly on the research questions of the present study: 1) students' future skills and 2) goals for developing teaching, while 56 posts were not related to future skills and omitted from the data analysis (see Figure 1).
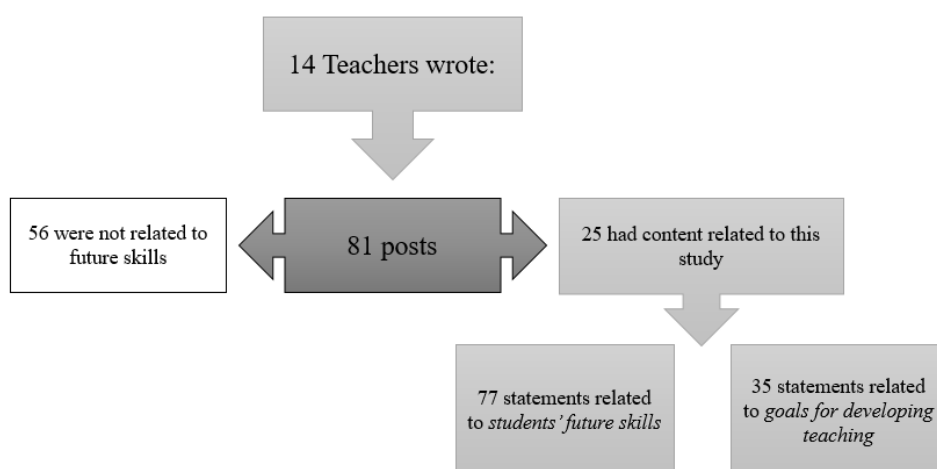

Figure 1   Inductive Data Selection Flow

A deeper qualitative content analysis of the extracted texts (25 posts) was conducted (Elo & Kyngäs, 2007; Graneheim & Lundman, 2003; Saldaña, 2009) by the first author. This analysis was data-driven

and based on inductive analysis (Elo & Kyngäs, 2007). The unit of analysis was a written statement, idea or mentions of students' desired future skills and teachers' development goals for HE instruction (i.e., segmented the text as meaningful ideas or statements); for example, a statement is one meaningful idea or content that could consist of a few sentences or one paragraph.

The coding of data was a cyclical process (Saldaña, 2009) where the first author conducted several cycles of coding to further manage and focus on the salient features of the data. The first author classified these statements and identified emerging codes based on the statement's content (Chi, 1997; Saldaña, 2009, pp. 7-8) in the extracted text. Next, the contents of the statements were carefully classified to one or several of the emerged codes. The classification was reviewed and negotiated with other researchers as a summative reliability check. These codes were grouped according to their main meaning into sub-categories and further categorized to main categories (Elo & Kyngäs, 2007). Figure 2 illustrates the categorization of students' future competencies and skills.
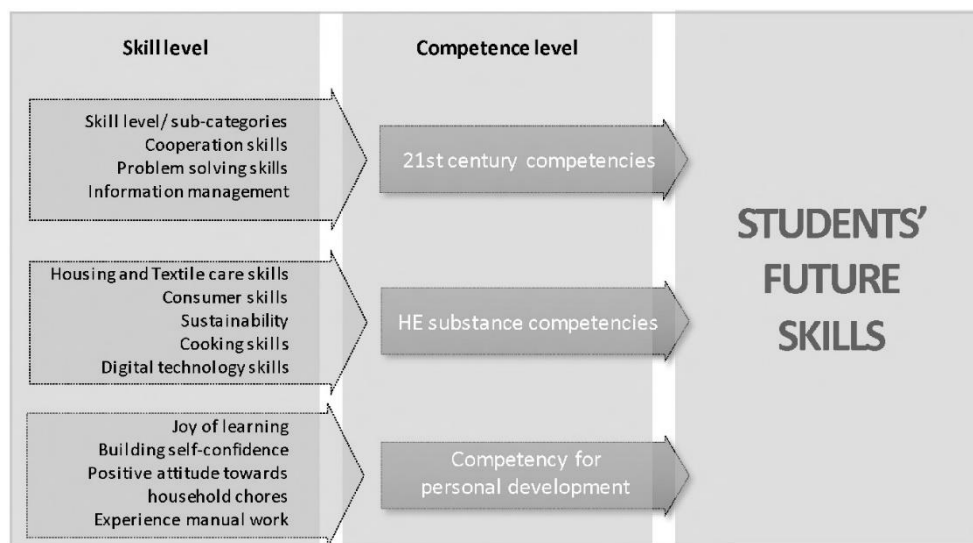

Figure 2   The Categorization of Students' Future Skills

The three main categories that were inductively constructed from the 77 statements related to *students' future skills* were:

1. 21st century competencies
2. HE substance competencies, and
3. competencies for personal development.

The total number of statements related to the students' desired future skills in teachers' writings was 77. A bit over half the statements (f = 41; 53, 2%) were classified as HE substance competencies, approximately one-third of statements (f = 28; 36, 4%) were classified according to the category of 21st century competencies and only ten percent of the statements (f = X; 10, 4%) were classified in the personal wellbeing category.

Further, the 35 statements related to *goals for developing teaching* were inductively classified into three categories of nine sub-categories (see Table 5):

1. teachers' desired changes in their lessons (less)
2. desired pedagogy and implementation (more), and
3. suggested tools for changing teaching (pedagogical tools).

Results

In this chapter, we will first present the results concerning what competencies and skills students should learn for their future (Q1) and secondly, the results of what teachers consider as developmental goals to improve HE teaching (Q2).

The 21st century competencies and connections between 21st century skills and HE skills

According to the results, the teachers saw students' desired future competencies as three-fold including 21st century competencies, Home Economics competencies and Personal development competencies. Thus, teachers' thinking was visible on three levels:

- *21st century thinking* reflects school-level thinking that is influenced by society, politics and global discussion.

- Thinking that takes place on *a Home Economics* level reflects subject level thinking that is influenced by society, HE discipline and the curriculum.

- The thinking about competencies for personal development reflects the individual and personal level of students.

In the following, the contents of the main categories and sub-categories are presented. In the text, the connections between 21st century skills and HE substance skills in teachers' writings are presented after the descriptions of the each 21st century skill sub-category.

The results revealed that despite the fact that HE teachers were subject experts, the teachers considered the 21st century competencies to be important future skills for students and emphasised the teaching of these higher-level thinking and cooperation skills together with teaching HE substance related skills. The category of 21st century competencies included subcategories of skills: *Cooperation*, *Problem solving* and *Information management*. Table 2 presents the results of the analysis of desired students' future 21st century skills: the main categories and subcategories, the numbers of statements and representative quotes.

Cooperation skills were comprised of teachers' statements on negotiation skills, skills needed for learning together with peers and a sense of responsibility. Teachers described these themes by stating how important it is to learn to work and think together as a group. Teachers value the learning of negotiation skills. By this, they especially meant the division of household duties at home and the division of work among group members in education and work settings: *living together*. The sense of responsibility was related to taking responsibility for household duties at home and conducting work and more broadly in society in responsible manner. Cooperation skills were connected to *Housing and textile care* and *Consumer skills* and *Food preparation skills*. Table 1 shows the connections between 21st century skills and HE skills.

Table 1   **21st Century Skills Connections With HE Skills**

21st Century Skills	Cooperation Skills	Problem-Solving Skills	Information Management Skills
	↑	↑	↑
Home economics skills that contribute to 21st-century skills	• Housing and textile care • Consumer skills • Food preparation skills HE literacy	• Consumer skills • Food preparation skills • HE literacy • Housing and textile care skills	• Consumer skills • Digital technology • HE literacy • Housing and textile care skills

The subgroup of **problem-solving skills** also included skills at planning and organisation. Teachers emphasised the ability to plan one's own work order and practical application of knowledge in real life situations. *Problem-solving skills* were connected to *Housing and textile care*, *Consumer skills*, *HE literacy skills* and *Food preparation skills* (see Table 1).

Information management skills consisted of discussions connected to skills at capturing new knowledge, comparing data and information and being able to make discerned and informed choices. Information management skills were connected to *Housing and textile care*, *Consumer skills*, *Technology*, *HE literacy skills* and basic scientific principles of *Housing and textile care* (see Table 1).

Regarding 21st century skills, the teachers highlighted teaching information management, cooperation and problem-solving skills. Interestingly, the problem-solving subcategory included skills at organising, general planning, and planning one's own work, which are typical representations of skills needed not only in running a household but also in working life and more widely in society.

Negotiation skills and having a sense of responsibility were among important Cooperation skills at home and in working life.

To conclude, the connections that teachers have drawn between future HE skills and 21st century skills make visible such higher-level thinking that students can achieve through learning of HE skills for functioning at home, work and in wider society. What the teachers find to be essential competencies of the 21st century can be trained and taught via everyday routines. Competencies for the 21st century were described in this article are higher level thinking that pupils can achieve through everyday actions. Earlier we described the connections that teachers have drawn between future HE skills and 21st century skills and these have provided pragmatic examples on how to achieve higher-level thinking and social awareness (competencies) through accomplishing tasks in everyday life.

Table 2   **Students' Future 21st Century Competencies and Skills**

Category & subcategories [C: Codes of statements] (S: Quantity of statements)	Representative quotation of 21st-century competencies (Statements: 28)
21st-century competencies (S: 28)	
Cooperation skills [C: 9] (S:)	
• Cooperation [C: 1]	I have never favoured individual [practical] tasks; I see it important that students work together and think together how they should accomplish a task. Together students either succeed or fail, experiences of success increase; thus, no one will be left behind. That is the principle. (T14)
• Negotiation [C: 1]	I have purposefully tried now, at the beginning of a new semester, to get my students to negotiate and decide their work duties by themselves in a group [in practical lessons]. I have observed their activities and then asked who is going to do what. This has been quite nice and 7th grade students have really negotiated in a very detailed way the tasks that each of them will have. (T6)
• Cooperative Learning [C: 1]	I think that the important matters to learn in Home economics are cooperation skills and consideration and respect for other people. (T6)
• Responsibility [C: 1]	How can I make it possible [for the students] to really learn to organise, take responsibility, plan and negotiate? How can I teach skills for living together? (T11)
Problem solving skills [C: 4] (S: 7)	
• Ability to plan one's own work [C: 1]	Young people need to learn basic skills: How to apply the knowledge they learn in practice, knowledge about [scientific] phenomena. They also need ways to experience different phenomena. (T8) (This quote also represents cooperation skills.)
• Organisation skills [C: 1]	
• General planning skills [C: 1]	In optional HE [8-9th grade] teaching, I aim to give food for thought [for the learning of capabilities] so that students can learn to face future everyday challenges creatively and show initiative. That is why the course is planned and implemented together with the students. (T6)
• Problem solving skills [C: 1]	
Information management [C: 4] (S: 12)	
• Practical application of knowledge [C: 1]	Maybe the most important aspect is to support a student's confidence that he or she will survive [in life]; students need to feel that they are capable of making the right choices and finding the information they need to survive. (T8)
• Skill at capturing new knowledge and skills [C: 1]	It's difficult to say what skills young people will need in their future life. I'm sure that many of the skills needed in everyday life now will be transformed. The use of electronic services and the amount of information available will grow. (T4)
• Comparing and contrasting skills [C: 1]	Thinking about the mastery of everyday life, the most important challenge in the changing world is the abillity to acquire knowledge and capture new concepts. (T10)
• Discerning informed choices [C: 1]	

Home Economics subject competencies

The main category of HE substance competencies included the following skills subcategories: Housing and textile care, Consumer choices, Food preparation, Sustainability and Technology and HE literacy in general. The subgroup of Housing and textile care was the most emphasised future skill among HE competencies (see Table 2). On the other hand, the least discussed theme in the writings was Sustainability, which was unexpected considering the timeliness of this topic. Table 3 presents the results of the analysis of students' future HE skills: the main categories and subcategories, the numbers of statements and representative quotes.

The discussion related to **Housing and textile care** contained many statements about home management skills that a person needs to organise and manage a home and possessions including cleaning, doing laundry (choosing and using textiles, aftercare of textiles, textile labelling and chemical use) and home and interior design. Among Housing and textile care skills the teachers valued basic scientific principles related to cleaning and textile care and multi-literacy skills related to cleaning and textile care. Housing and textile care were connected to Consumer skills and Cooperation skills in general and especially to developing a Sense of responsibility. Information management skills were also necessary when comparing and contrasting skills. In addition, Food preparation and Multi-literacy skills were linked to cleaning.

As important future skills in the main category of **Consumer skills**, teachers consider budgeting, and multi-literacy related to consumer knowledge and the ability to discern quality and value. Consumer skills were also connected to HE literacy. A further consumer skill would be an ability to evaluate products in terms of ethical production, usability, care and maintenance qualities. In the area of Consumer skills, the teachers considered not only the learning of consumer knowledge but also the practising and training of consumer skills. For example, they wanted the students to think about the choices they have made, prepare budgets and visit markets, all of which inform and enhance practical Consumer skills. Autio et al. (2009) have stressed the importance of consumer education in schools because young people lacked sufficient budgeting skills. For example, online micro loans have been a problem for young people in Finland.

In teachers' writings related to the **Food preparation** skills subcategory, the teachers wrote about the importance of attaining proficiency in basic food preparation skills, the phenomena and basic scientific principles of food preparation. However, teachers also highlighted recipe literacy. According to Brunosson et al. (2014), recipe literacy is a concept that means the ability to comprehend and adhere to recipes. It captures the complex field of knowledge that embraces both theoretical and practical skills needed when using recipes. Food preparation skills were also connected to planning, budgeting, textile care, cleaning and cooperation.

It was a bit surprising that teachers did not stress **Sustainability**. They discussed environmental issues only on a general level and did not mention climate change or global warming. A generational difference in the use of these terms may explain why climate change is not visible in the data. Another explanation may be the case that teachers already teach it and take it for granted (see a quote in Table 3).

Teachers relate **digital technology** to such skills as the use of electronic transactions and services, programming and robotics, specifically robot appliances in the home, blogging and photography. It is notable that the teachers discussed more about technology than sustainability in their writings.Digital technology was also connected to student-centred learning methods and information management skills.

An interesting result was that in addition to multi-literacy skills related to cleaning and textile care areas, multi-literacy related to consumer knowledge and recipe literacy, teachers highlighted general **HE literacy** by which they meant more than just knowing or doing. As Smith (1993, 2009, p. 55) has pointed out long ago, "General literacy has been broadened to include negotiating, critical thinking and decision-making skills". The term *literacy* has been applied to various kinds of literacy such as financial or health literacy (Hira, 2013; Pendergast, 2013). The teachers seem to mean that HE literacy "involves the ability to make decisions and apply knowledge to everyday living" (Smith, 2013, p. 268) and deal with "multiple literacies in a way of interconnecting elements such as skills, culture, systems, and behaviors" (Hira, 2013, p. 115).

Table 3   Students' Future Competencies and HE Skills

Category & Subcategories [C: Codes of statements] (S: Quantity of statements)	Representative quotation
HE substance competencies (S: 41)	
Housing and Textile care skills [C: 5] (S: 15)	
Housing and home management skills [C: 4] Cleaning [C: 3] Multi-literacy skills related to cleaning [C: 1]	Thinking of the near future, I think there should be some teaching connected with daily living. What basic [domestic] equipment shall I [a student] need when I move away from home? What expenses does one have to pay for an apartment? [Guiding students to] consider their future needs. At the same time, of course, to think about the whole budget of living. What does everything a person needs cost? (T1)
Basic scientific principles used in cleaning [C: 1] Basic scientific principles used in textile care [C: 1]	Youngsters need especially to learn basic skills. They need to know how to apply in practice what they have learned. They need to be able to observe [scientific] phenomena and try to experience different phenomena. They should realise how important it is to wash a woollen sweater according to product information and what happens when the woollen sweater is washed in the wrong way. (T8)
Food preparation skills [C: 2] (S: 8)	
Recipe literacy skills [C: 4]	Maybe lecturing should really be reduced and focus on recipe literacy!!! (T1)
Mastery of the basic skills of food preparation [C: 1]	Pupils should be encouraged to start cooking without a teacher going through the instructions first. Important and critical points for a recipe to succeed can be considered at the end of the lesson. Perhaps those [critical] issues would even emerge from the pupils' own experiences and perceptions. Pupils would also learn to read the instructions more carefully after failing a few times. This new way would certainly burden the teacher at first, when ten pupils were simultaneously asking for help but the pupils are doing so already as they don't bother to listen to the teacher's guidance. (T12)
Phenomena and basic scientific principles of food preparation [C: 1]	In 20 years of teaching, I have concluded that mastery of everyday life is important for students' future life. Students could learn systematic planning of a week's menu, making the next day's food from the leftovers from the previous day. Develop an attitude building towards eating vegetarian foods and replacing meat with vegetable-based protein [sometimes]. (T1)
Consumer skills [C: 4] (S: 7)	
Budgeting [C: 1]	The young people need more and more consumer information, consideration and practice, in my opinion. The selections have exploded really since my own youth in the 1980s when I chose between the soft drinks Jaffa and Pepsi. Therefore, we have taken a visit to shop/market in our plan last year. We use the whole (3x45min.) lesson time for this. We study the selections, ecolabels, domesticity, organic food, fair trade, the amount of salt, sugar and the fiber, prices per kilo and so on. (T11)
Paying bills [C: 1] Multi-literacy skills related to consumer knowledge [C: 1]	Consumer issues have become increasingly important in my teaching in recent years. It is easy to find material to teach consumer knowledge (e.g., from the webpage of The Consumers' Union of Finland) and students' themselves are quite up to date about consuming (e.g., quickie loans pikavipit). (T13)
Digital technology skills [C: 3] (S: 7)	
Use of electronic transactions and services [C: 1]	At least in our own school, there is a lot of talk about programming and robotics. Both are certainly important activities and an essential part of the future when will become more technical; in 20 years' time, it may be enough to know how to program your kitchen in order to prepare a festive meal. (T4)
Programming [C: 1] Robotics [C: 1] Blogging [C: 1]	I want to expand [the use of] blogging, storing images, surveys for pupils etc. [in teaching]. Textbooks are slowly moving into the background, which is good. For a long time, students have been taking pictures of recipes they have wanted to have for themselves. In the future, I hope that students will keep a home economics blog (or some other digital file) where they gather material for their own and others' enjoyment. (T13)
Sustainability [C: 1] (S: 2)	Environmental issues are involved in every lesson I teach and must continue to be so. It would be important to get pupils and homes to reflect on environmental issues on a practical level. (T11)
HE literacy [C: 2] (S: 2)	In my opinion, planning a student's own work (for example, scheduling, the rational order of performing tasks/work) and recipe literacy skills are areas that should be enhanced. (T7)

When examining the HE subcategories from the teachers' perspective in general, the basic skills of HE together with other multi-literacy skills related to cleaning and textile care, recipe literacy and knowledge related to consumer knowledge were often mentioned in the writings. To summarise, the learning of information management, cooperation, HE literacy, the basic principles of HE, learning to apply the knowledge in practice and experiencing [scientific] phenomena were seen to be more important to learn for the future rather than specific content knowledge.

Competencies for personal development

The category of wellbeing entailed such aspects as building self-confidence and learning the joy of learning, which are the two most emphasised aspects in the teachers' writings. The other categories the teachers mentioned as future skills were more HE related future aims like embracing household chores and experiencing manual work. Table 4 presents the results of the analysis of students' future competencies for personal development skills: the main categories and subcategories, the numbers of statements and representative quotes.

Table 4   The Results of The Analysis of Students' Competencies for Personal Development

Category & Subcategory [C: Codes of statements] (S: Quantity of statements)	Representative quotation
Competencies for personal development (S: 8)	
Personal development skills (S: 8)	
Joy of learning [C: 2]	Experiences. It is great to knead the dough, feel the onion sting in the eyes and notice how calming it is to fold 50 t-shirts and place them neatly on the shelves. Cooperation and shared experiences are also part of experiencing the feeling of home.(T4)
Building self-confidence [C: 4]	I hope that the joy of learning will be remembered instead of just performing tasks. (T3)
Positive attitude towards household chores [C: 1]	One's own personal human capital and good self-knowledge with self-confidence help to survive in a changing society. (T4)
Experience manual work [C: 1]	Hopefully, the young people who set off from our school are self-confident and eager to learn. If they are willing discover new concepts and ideas, they are going to succeed in the future. (T12)

To invoke the joy of learning in a pupil is to encourage a constant life-long motivation to adapt easily to current information, knowledge and environments where new concepts are intriguing rather than tedious. In student-centred learning, students are attached to the topic at hand on a personal level since they must develop their own solutions to given problems alone or in teams. This might be one way to empower students' self-confidence and trust in their own abilities.

Future Prospects of Home Economics Pedagogy—Student-Centred Learning

An important part of education pedagogy involves reflecting on how to implement such teaching that learners can achieve different learning aims and goals: how to teach best. Our second research aim was to study what teachers consider as developmental goals to improve in their own teaching practices (Q2). According to the analysis, the teachers commented on their work critically. Teachers wrote about what they should change in their teaching even though that was not questioned in their in-service education assignment. As professional teachers, they could not think about students' future skills without also thinking about what they should change in their teaching. Table 5 summarises what the teachers wanted to reduce from their lessons, what kind of pedagogy they wanted to implement more in the future and what they suggested as the tools for changing their teaching.

Table 5   Results of the Analysis of the Teachers' Development Goals of HE Teaching

Category & Sub-categories (S: Quantity of statements)	Representative quote
In their instruction, teachers want less (less)	
Lecturing (S: 9)	T4: "In the class I often notice that I am talking too much and give many answers directly without first giving the pupils a chance to find a solution by themselves". T7: "I maybe go through recipes far too thoroughly even though they often do not stick in students' minds. I recognise myself as a curling teacher: I prepare and ensure too much for the students and on behalf of students".
Teacher-directed learning (S: 6)	T10: "A discussion of students' questions produces learning and a lengthy teacher-directed phase lessens the learning in other ways".
Content during lessons(S: 7)	T13: "All cannot be taught after all so we must find a common thread of HE and develop [HE instruction] along with the times. I will aim towards [the teaching of] larger themes".
Cooking during lessons(S: 5)	T1: "I and my colleague have long thought about how to eliminate the pressure. We have tried to reduce content but without succeeding. Yes, the truth is that we use far too much time on food preparation." T12: "This autumn I have purposely aimed to cut down food preparation tasks in the lessons but I am only at the beginning of reducing them. Plenty of food preparation could be cut down to reduce the feeling of a hurry in the lessons".
In their instruction, teachers want to implement more (more)	
Student-centred learning (S: 3)	T6: "If I had the time to teach everything using inquiry-based learning, I would do it. But sometimes one needs to use shortcuts to achieve the goals. I would most like to learn how to use imagination to try collaborative teaching methods of different kinds. The ideal would be, of course, that students could learn from each other and discover ideas by themselves".
Pedagogical tools for implementing and increasing student-centred teaching (tools)	
Let students learn from failures instead of ensuring success in practical tasks like food preparation (S: 6)	T5: "I, too, recognise myself as a curling teacher: I ensure that students' success and lay the groundwork for working too much by explaining all the critical phases beforehand. This takes too much time in a lesson and I feel that students may not have heard anything. That s a waste of work. Why don't I let them figure things out by themselves? And let them tell their findings to the whole class at the end of a lesson."
Present more tasks that require critical thinking and planning (S: 4)	T1: "The pupils should be given more tasks and assignments that require consideration, thinking and planning".
Engage students to participate in the process of planning lessons (S: 3)	T4: "Students need to be more involved in the planning of lessons. This is a goal I have for the future". T5: "I too have experienced defining the learning goals of every lesson with students worthwhile. It gives a framework for working. At the end of a lesson, we have another look at the goals and discuss how the goals have been accomplished".
Differentiation of learning tasks (S: 2)	T12: "There are more and more students among classes who have not practised or been trained in household skills at home. On the other hand, the portion of the students who are skilled and perfomr lots of household chores has grown. This has got me thinking whether I should differentiate the teaching according to students' skill levels".

The analysis showed that teachers aim towards *student-centred learning* and *planning of teaching*. They mentioned *inquiry learning* and *collaborative learning* as more specific pedagogical approaches towards more student-centred learning. The teachers had a clear view about the aim to reduce further *teacher-directed learning* and especially *teacher talk* or lecturing. To achieve this, the teachers suggested that they need to *engage students to participate in the process of planning lessons* more and they need to *assign more learning tasks that require critical thinking and planning*. The teachers seemed to express a shift from teacher-led to student-centred teaching also through negation: by reducing their own role they planned to allow more room for students to think and experiment themselves (see Table 5).

The teachers analysed themselves for having *too much content in their lessons*, especially having *too much food preparation* planned for the HE lessons including food related topics. They considered that heavy load of learning aims and practical tasks created feelings of pressure and prevented

students' actual learning. In this connection, the teachers highlighted that to achieve inquiry learning and collaboration among students they need to *allow students to learn from failures too instead of ensuring success in practical tasks especially in food preparation*. To permit students to learn from failures is not typical in the teaching of HE in Finland. One teacher's writing expresses the idea behind giving up ensuring:

> I must let the pupils read and understand by themselves, measure independently and achieve their own results or products. Learners learn so much from burnt, clotted or too salty creations. These create striking and remarkable learning opportunities for the whole group. Of course, one also must make sure that the pupil acquires the feeling that she/he learns and will do well (in life). (T11)

Teachers also wrote about the need to differentiate learning tasks more in the future than before. This need arises from students' previous heterogenic background expertise on HE related subjects. The teachers meant by differentiation the division of practical tasks according to student's knowledge and skills in order to meet everyone's learning goals and to encourage students to think about what they already know and are able to do and what they need to learn more. A citation in Table 5 clarifies this need in teachers' thinking.

Discussion

Teachers are, of course, influenced by teacher education, national curriculum and local and global societal and political changes. Our results show how teachers integrate all this information into the HE subject when thinking about their students' future instead of the subject tradition and when thinking of the whole variety of HE competences and skills together instead of a particular subject of HE education, such as food and consumer education (e.g., Höijer et al., 2011; McGregor, 2008b). By studying HE competence and skills as a wide-ranging phenomenon rather than focusing on an individual skill, the study created understanding of the core priorities of the HE subject and showed how the subject should evolve at school. We analysed what Finnish HE teachers' value as important 21st century competences and home economics skills. According to our study, teachers emphasised the following HE skills: housing and textile care, digital technology, recipe literacy and consumer capabilities as the core HE substance competencies when they consider what students will need in their future life. However, teachers see the future competencies of students as three-fold: readiness for the 21st century, Home Economics and personal development. Furthermore, they emphasised that these skills are all integrated.

Teachers valued HE literacy skills including consumer knowledge, textile care and cleaning. In the food preparation skills, teachers recognised flaws concerning recipe literacy skills (see also Brunosson et al., 2014) in addition to actual food preparation practice. Regarding consumer skills, the teachers believe it to be important that students learn consumer knowledge and practise and train in consumer skills. They wanted the students to think about their choices in devising budgets and undertaking market visits. Digital technology, in the form of digital services and information sharing, was also mentioned as one of the important HE competencies the students will need in their future lives. Considering the fact that everyone faces environmental challenges, such as climate change, it is notable that teachers did not stress sustainability issues as a core area of HE subject or poverty, economic inequalities and obesity that also matter. Although teachers did not stress sustainability, they thought environmental and nature matters concerning chemical use related to, for example, textile care and cleaning (see also Haapala et al., 2014; Øvrebø, 2015) were important. To address this matter of teaching sustainability more closely would require investigating the actual practices of teaching sustainability on the secondary school level of HE education. Furthermore, how HE teachers in other countries address sustainability is also worthy of future research.

This study has its limitations due to the number and homogeneity of participants. The research represents the view of 14 teachers who are actively developing their teaching. Although teachers work in the same societal and cultural context, they have similar (but not the same) academic education, the teachers' individual attributes like age, gender and years of experience varied. We analysed only the data that directly focused on the research questions; however, the total of collected data is quite rich and will provide opportunities for later analysis related to HE education when considering how the teachers developed their teaching towards their developmental goals.

The findings of this study are in a Finnish context; however, these findings may also be helpful to international teachers and teacher educators who work in the field of HE. The 21st century skills and competencies and the development of teaching are universal research themes and other scholars

may find the methods used in this study useful to repeat and expand upon the study in their own contexts. Further research on a global level might reveal how the categories of skills identified in this research correspond with HE teachers' views in other countries.

As McGregor (2011) has noted, HE is fragmented and consists of many specific areas that then cause challenges to defining the core competence of the subject. Teachers are facing this challenge in their everyday work and they solve the problem in practice when teaching their subject matter. Thinking on a higher level, cooperation and information management skills are the new standard of learning outcome and achieving that outcome requires the development of both content and teaching methods practices (e.g., Binkley et al., 2012). Finnish HE teachers stress 21st century competencies, such as cooperation, problem solving and information management skills. They saw that the ability to think critically carries on to their lives outside school and so the pupils will be able to make better choices based on their own critical thinking rather than acting without reflection. Similar skills were also mentioned as future skills by HE teachers in New Zealand (Dixon, 2017).). The 21st century competencies and skills teachers emphasised in their writings are in line with the 21st century competencies and skills proposed in the literature: higher level thinking (creative thinking, problem solving and critical thinking), communication and collaboration and tools of digital technology and literacy (e.g., Binkley et al., 2012; Hakkarainen, 2009; Sundqvist. et al., 2021).

Regarding the changes in teaching HE, in the lessons teachers want to stop ensuring success in practical tasks and let the students learn from their failures in addition to successfully performing tasks. Teachers want to change their teaching to a more student-centred approach by reducing the content of the lessons such as lecturing and food preparation and instead involving students in the planning of lessons and implementing more tasks that require critical thinking. The teachers criticised themselves for having too much content in their lessons, which creates stress and prevents actual learning. These pedagogical changes, which the teachers proposed are in line with the desired students' future competencies: the teaching needs to allow students to cooperate, work collaboratively with knowledge and information, use critical thinking and solve problems to achieve 21st century competencies in HE lessons.

For the professional development of HE teaching, there must be a shift from current pedagogy to more strategic and future-oriented teaching. According to this study, collaborative reflection via a shared online writing process provoked the teachers' thinking about students' future skills and the development of the subject beyond the traditional curriculum. Based on this study, in-service educators' facilitation supports teachers' reflection and critical thinking. Together with facilitation, theoretical knowledge (learning theories, professional articles) helps to provoke teachers' critical thinking toward the development of teaching. Theory-based development of ideas where teachers question, reify ideas and develop them further in collaboration is pivotal to the development of teaching (Kuusisaari, 2016). Design-based Research is a potential method for organising the development of HE teaching. In-service education is necessary to develop HE teaching as it provides social context: structures, time and place.

In general, the results of this study imply that in the teaching, prevailing content and practices need to be inspected more closely and their adequacy should be evaluated regarding their future usefulness. Teachers should ask if they exist because they have always been there or if they are being used as appropriate tools for greater goals.

Conclusion

This study demonstrates that teachers see that the development of 21st competencies is critical in future HE teaching. This should have implications for developing initial teacher education, in-service education of HE teachers and curricula of HE in schools. Curriculum materials including textbooks may also need to be revised. Home Economics as a school subject includes content potential that is relevant in the future and teachers' thinking reflects this. Based on the results of this study, we conclude that HE teaching and its content have an important role to play in developing students' 21st century competencies.

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A Study of How Cooking is Taught

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Abstract

There is no common research approach into how home economics educators teach cookery and food safety. A qualitative observation study of six teachers giving cookery classes to 14-year-old students shows how teachers make more or less conscious didactic choices about subject content. These different choices give the content different meanings. Teachers can create a foundation for formative education (bildung) when they enable students to routinize their own choreography, and conceptualise and reflect, when cooking collaboratively.

KEYWORDS:　　TEACHING; COOKERY; ROUTINES; HOME ECONOMICS; FOOD AND HEALTH FORMATION; BILDUNG

Introduction

In Norway, food and health (*Mat og helse—home economics*) is a compulsory school subject. The subject focuses on food, and relates it to life style, consumption and culture (The Norwegian Directorate for Education and Training, 2006)[1] . The development of knowledge about food should promote physical as well as psychological health and social wellbeing, and be part of students' formative education (*bildung*). This is, among other things, achieved by students learning how to cook safely by considering hygiene and order, and by cooking and eating together.

Teaching cooking to junior high school students (14-16-years old) is the focus of this article. Teaching always involves having to make didactic choices. In making conscious choices, teachers need to reflect on different alternatives. The National Curriculum gives guidelines, but teachers choose content and methods for each and every lesson. Didactic competence (Englund, 1991) implies that the teacher reflects on alternative choices and understands that the choice one makes has implications for what students learn. Furthermore, a choice is never limited to facts. Teaching a specific content always involves both facts and values, and facts can be given different meanings, according to the context in which they are taught.

This article is based on a PhD thesis that focused on how cooking is taught to junior high school students. The thesis contained two separate studies. Study 1 showed that Norwegian food and health teachers pay close attention to routinizing students' cooking actions, whereas the second study elaborated on how the routinizing of actions is taught in cookery classes. This article is based on the second study. The aim of the article is to discuss the question:

- What do food and health teachers' didactic choices when teaching routinizing mean for students' bildung?

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[1] A New National Curriculum was introduced from Autumn 2020. It relates food to cooking, health, sustainability, culture and identity.

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Teaching cooking

Even though the routinizing of actions in cooking classes has been shown to be important, we have found no national or international research that focuses on how it is taught (Fordyce-Voorham, 2011; Goldschmidt & Song, 2017; Granberg, 2018; Höijer, 2006; Lange, 2017; Lavelle et al., 2016; Lindblom, 2016; Surgenor, Hollywood et al., 2017; Surgenor, McMahon-Beattie, et al., 2016; Veka et al., 2018). Research on cookery teaching focuses on food safety (Lange, 2017), cookery classroom design and equipment (Fordyce-Voorham, 2011; Höijer et al., 2013; Lindblom et al., 2013), and food choices and recipes (Granberg et al., 2017; Höijer et al., 2014; Veka et al., 2018). Surgenor et al. (2016) and Surgenor et al. (2017) do examine the teaching of practical cooking skills, but they focus on student learning rather than on what teachers do.

Cooking is dependent on the equipment one uses (Sutton, 2015). Teachers who demonstrate how to use different kitchen utensils and, at the same time, highlight and conceptualize how utensils and food interact, simplify students' access to cooking (Venäläinen, 2010). When it comes to food and using recipes, it is important to have knowledge about equivalent ingredients that can be exchanged for each other. Granberg (2018) shows there is a particular lack of such knowledge among students in schools for children with special needs.

Recipes play a central role in cookery classes (Granberg et al., 2017; Höijer, 2006; Veka et al., 2018). When there is a lack of awareness about how to use them, less attention is paid to the food and food safety (Lange, 2017). Recipes are a teaching tool, and teachers must plan how they can be used to raise students' consciousness. It is important they are a support—and not a hindrance—for the learning of cooking skills (Granberg et al., 2017). One obstacle may be that a lack of subject-specific concepts makes it difficult to understand recipes (Granberg, 2018; Veka et al., 2018).

Routinizing safe cooking—didactic concepts

Some concepts need to be clarified before studying and discussing how teachers teach routinizing in cookery classes.

Cooking

Norwegian students in junior high school are supposed to learn how to safely cook a variety of tasty dishes and meals (The Norwegian Directorate for Education and Training, 2006). Successful cooking takes its starting point in an idea of the dish or meal to be made. It involves making shopping lists and menus based on preferences, food inventory and budget, so that everything is prepared and in place when the actual cooking starts (Fordyce-Voorham, 2011; Goldschmidt & Song, 2017; Sutton, 2015). In the food and health class, preferences are not only based on what pupils like but also on criteria for healthy and sustainable food and theoretical considerations. One study concludes that cooking skills can be seen as "person-centred and contextual (and hence as specifically *domestic* or *professional*) and as consisting of perceptual, conceptual and organizational skills as well as practical, mechanical skills and academic knowledge" (Short, 2003, p. 177).

In food and health education, practical cooking skills also include issues of hygiene, order and cleaning, that is, making safe food. If cooking is to be safe, the kitchen equipment—depending on the situation and the cook's ability to flexibly use and organize the utensils and food—plays a central role in cooking a planned dish or meal (Sutton, 2015, s. 60–64, 183). In other words, knowledge of the final product, or dish, is central to being able to choose and handle utensils.

To learn about safe cooking is also to learn about taking risks (Sutton, 2015), about trial and error. This means that students should be allowed to fail, whether it is a matter of cooking methods, sensory aspects, or choices and combinations of foods and utensils. Taking risks helps to develop *perceptual* and *conceptual* skills (Short, 2003); students must be able to take criticism, be open to new experiences, expand their food horizons, take things step-by-step and adapt to new conditions.

Following the work of Short (2003) and Sutton (2015), the authors of this study understand teaching safe cooking as being a matter of designing the cooking lessons so that students can take risks, use their senses, conceptualize, plan, make decisions and use theoretical and practical knowledge and skills. Safe cooking is operationalized in a number of action categories: cooking methods; making decisions about safe food; using utensils, ingredients and recipes; product evaluation throughout the

cooking process; and organisation. In our study, "other" was used as a final action category, to ensure that any other actions were not left out.

Routines

Food and health teachers are concerned with routinizing all of their pupils' actions. Like all actions, the ones that make up the cooking process have an inner structure of steps in a choreographed order (Grimen, 1997). The choreographed order signals that routines are context-sensitive and flexible. In a process of routinizing, individuals can spend different amounts of time on each step and the order can vary. This means that the inner order of the actions will be routinized differently. To have established a fixed order of steps in an action indicates that the action is routinized and can be performed with confidence. The routinized action provides predictability, which in turn makes it possible to organize and synchronize actions. A fixed order of, for example, the process of boiling vegetables, can consist of details as to how it is performed. Although routines can serve as a type of manual for how specific actions should be performed, they are often regarded as devalued actions (Ehn & Löfgren, 2010; Grimen, 1997).

Applying a choreography perspective to routines implies that the same routine can be performed in different ways. Ehn and Löfgren (2010) argue that the range of different ways in which a routine can be executed and understood indicates that there are polarities in routine actions. One such polarity concerns the rigour of a routine: how a routine might *limit* or *support* personal development (Ehn & Löfgren, 2010).

How rigorously educators choose to teach the choreography of the different cooking categories will give different meanings to what is taught (Englund, 1991). The ways in which different teachers present routine actions will have consequences for their students' learning and development (*bildung*).

Bildung

The concept of *bildung* is somewhat unfamiliar in the Anglo-Saxon world. It can be described as a two-sided coin, with a process side and an ideal side, and can be defined as *becoming a human* (an ideal or result) or *becoming as a human* (a process). Steinsholt (2011) writes that Humboldt spread the term *bildung* from Prussia, more than a hundred years ago. Humboldt argued that the process a young person undergoes during growing up into adulthood is a process that forms her/his personality. He postulated that this is a process in which language is an important tool, a process which requires not only time, learning and skills, but also active participation in social life. The young person should learn that it is necessary to take responsibility, not only for him/herself, but also for society. It involves automatically developing the willingness to go on learning, to act responsibly for the community and to be critical (Steinsholt, 2011).

According to the National Curriculum, *bildung* in food and health is related to what Dale (2010) calls formal *bildung*-processes. Students develop through thinking critically, gaining independent insights and exercising responsibility and co-responsibility; communication is a central feature (Dale, 2010; The Norwegian Directorate for Education and Training, 2006). Furthermore, formal *bildung*-processes require that when subject content is offered, it should contain a diversity of meanings.

Food and health has the reputation of being taught in a rather fixed, unchanging and moralistic way (Hjälmeskog, 2013; Kristiansen & Kristiansen, 1997). If there is no diversity of meaning, the student's development is secondary, and we see so-called material *bildung*-processes (Myhre, 1978). Teachers who are aware of their subject's normative content can more easily teach it with a degree of uncertainty and wonderment, and thus make their classes meaningful for all students offer diversity to the content. They will not just pass on a fixed content that does little to help each students to develop (Hopmann, 2007).

Data Collection, Methods, Analysis and Research Ethics

In this study we examine how teachers' didactic choices give different meanings to the routinizing of safe cooking actions in food and health classrooms, and discuss how these different meanings have consequences for students' experiences and *bildung*-processes. To be able to do this, we made specific decisions about the collection and analysis of data.

Data collection, methods and data basis

To study teachers' didactic choices, we selected the method of participatory observation, an approach that enables the researcher to capture immediate actions. Thus, teachers' subjective interpretations of their own practice did not provide basic data, which would have been the case if we had, for example, interviewed them (Fangen, 2011). Because of the noise of kitchen equipment and students' conversations, the fact that teachers constantly and quickly moved around the classroom, and in order to safeguard confidentiality, data was collected as field notes instead of by video camera. No names were noted. Attention was focussed on all of the details of teachers' oral and practical actions. As it was not possible to write down everything that we observed, our field notes were complemented directly after the classes (Fangen, 2011).

We observed six food and health teachers, in five different school kitchens/classrooms in five schools, both urban and rural ones. An average of 12 students were organised in groups of three to four to cook together. The teachers' age and teaching experience varied. Their level of education also varied, in line with the national average for food and health teachers in Norwegian upper secondary schools (Statistics Norway, 2014).

At the beginning of the school year, the students' collaboration was organized according to a *family model*. This meant that students took turns in doing cooking tasks according to a scheme predetermined by the teacher. Later on, the students organised the collaboration when cooking themselves. The menus for the cooking classes included pancakes, salad and baking with yeast. Some student-planned menus were based on leftovers. They made everyday meals, as well as a synchronously served one with many side dishes.

Analysis

Data was analysed using a five-step directed content analysis, in which theoretical concepts related to cooking and routines are used as a basis for categorisations of the data into matrixes (Grønmo, 2016; Mayring, 2000). The first step of the analysis consists of the development of categories, characteristics and matrixes. Table 1 shows the structure of the matrix created to sort the data in relation to the eight possible cooking action categories. The matrix also categorises whether the ways teachers chose to present the routine limited or supported their students' development. One matrix was filled out for each teacher. The second step of the analysis involves categorization.

Table 1   **Matrix for Categorisation of Actions During Cooking and Polarity**

Actions in cooking	Cooking actions	Polarities in teachers' presentation of routinizing
Field notes	Eight possible categories:	Two possible categories:
	1. cooking methods 2. safe food 3. use of utensils 4. handling of foods 5. product evaluation 6. throughout the cooking process 7. handling of recipes 8. organizing 9. other	1. Presentation that limits students' development. Indicators: limit, inhibition, restriction, one-sidedness 2. Presentation that supports students' development. Indicators: encourage, substantiate, help, defend, second

Cooking methods were operationalised according to Kirkegaard and Klinken (2013): these included cooking, frying, baking, thickening, stiffening, marinating, chopping and cutting, and their subgroups. Safe food was operationalised as actions related to hygiene, order and cleaning.

Examples of the categorisation of two different cooking lesson situations is illustrated in Table 2.

Table 2   Examples of Categorisation

Field notes (transcript).	Cooking categories	Polarity in teachers' presentation of routinizing
… [T]eacher leans calmly on her desk. She nods her head and looks at all the groups, loud, clear and gentle voice: So you have to be a little careful to have a little lower heat when you make white sauce… And then you have to follow what happens in the pan closely!	Cooking method	Supportive
Teacher rinses berries in running water before silently distributing the berries to the students	Safe food	Limiting

By cutting the completed matrixes into rows based on actions, and sorting the rows into cooking categories, the analysis went into the third stage, in which those actions that were respectively supporting and limiting within each category were sorted out. This gave us actions in 15 of the possible 16 categories. The result is shown in Table 3.

Table 3   Teachers' Actions Divided Into Cooking Categories

Routinizing of	Limiting students' development	Supporting students' development
Cooking methods	33	121
Safe food	23	92
Use of utensils	20	25
Handling of foods	13	40
Product evaluation	29	21
Handling of recipes	14	17
Organising	16	23
Other	0	8
Total actions per category	**148**	**357**
Total sum of actions	**505**	

Actions in each category were then compared in order to search for underlying patterns that might be common to multiple actions in the category (Fangen, 2011; Grønmo, 2016). As patterns were sorted out, they were grouped and named accordingly (see Tables 4 and 5).

In the fourth stage of the analysis, the characteristics of the different groups were discussed in the light of theory related to routinizing and cooking, as well as research-based knowledge about cooking. This discussion brought out the meanings that teachers gave to the subject content. In the fifth and final stage of the analysis, the meanings of the content are discussed in the light of Dale's understanding of *bildung* in order to help us answer the question: *What do food and health teachers' didactic choices when teaching routinizing mean for students' bildung?*

Research ethics

Research needs to follow ethical guidelines and satisfy internal and external demands (Grønmo, 2016; NESH, 2016). In keeping with external ethical obligations, participants in this study were informed about the study and gave their oral permission, both when invited and when data was collected. Participant confidentiality was ensured by categorizing quotes into actions instead of persons, and by referring to participants and third parties in general terms.

Internal ethical obligations, such as safeguarding our own impartiality as teacher educators, were adhered to using results from a study using grounded theory methodology. To generate valid data from which conclusions about many details in teachers' teaching actions could be drawn, participant observation and field notes were used to collect data. Furthermore, theoretical concepts used in our analysis are carefully described, so that the reader can judge their validity. To ensure greater reliability, our field notes were proofread, and possible additional details added immediately after

observation. The systematic description of analysis procedures (above) has also strengthened the study's reliability.

Results

The teachers' more or less conscious actions were categorised as either *supporting* or *limiting* students' development, in line with Ehn and Löfgren (2010). We firstly describe the didactic choices that lead to teachers' actions which limit students' development, before describing patterns of teachers' actions that support students' development.

Teaching safe cooking routines in ways that limit students' development

When safe cooking routines are predominantly presented in ways that limit students' development, teachers' actions generally lack substantial subject-specific content (see Table 4, column 2). Concepts characterizing teachers' actions, that is, their didactic choices, are presented in the third column of Table 4. The fourth column lists the degrees of meaningfulness that emerge when action patterns are reflected on, from the perspectives of the study's theoretical platform and research-based knowledge.

Table 4   **Teaching That Limits Students' Development**

Cooking categories		Examples of teachers' actions	Characteristics of action patterns	Contents´ meaning
Cooking methods		Ignores students' inquiries; order-like inadequate information	Silence regarding subject content. Commands. Limited use of subject-specific concepts.	Meaningless
Safe food	Cleaning	Ignores in silence; commands.	Superficial, limited practical and subject-specific follow-up. Limited use of subject-specific concepts.	Mechanical
	Food hygiene, order	Does not make important action steps visible		Meaningless
Use of utensils		Subject-specific justifications and elaboration are lacking.	Limited use of subject-specific concepts, management and contextualisation.	Meaningless
Handling of food		Knowledge about food is not thematised. Expensive food is portioned out.	Obedience; camouflaging of the subject-specific.	Meaningless
Product evaluation		Feedback to students has no subject-specific meaning, e.g. *really good!*	Superficial. Without subject content and limited use of subject-specific concepts.	Meaningless
Handling of recipes		Students are instructed to uncritically follow recipes. Teacher does not follow recipes. Recipes are not decoded.	Confusion. No subject content.	Meaningless
Organisation		Constantly new information about organisation.	Uncertainty.	Ambiguous

Subject content defined as *meaningless* lacks substance, while content defined as *ambiguous* lacks focus. Content that is *mechanical* does not involve reflection; it is robotic and automatic.

Teaching safe cooking routines ways that support students' development

When safe cooking routines are predominantly presented in ways that are supportive of students' development, teachers' actions make the subject content meaningful. In Table 5, column two shows examples of actions that contain the characteristics presented in column three. The fourth column presents the degrees of meaningfulness that emerge when the teachers' actions are reflected on, from the perspectives of the study's theoretical platform and research-based knowledge.

Table 5   **Teaching That Supports Students' Development**

Cooking categories		Examples of teachers' actions	Characteristics of patterns in actions	Contents´ meaning
Cooking methods		*What's the sauce like?* One teacher showed and told: "Divide in the middle, and in the middle, and take the bad parts away, but the best way is to tear the salad into pieces, then you get a nice result." "Good if one stirs and the other thins down".	Exploratory, structuring, contextualizing, challenging, appreciative. Wonderment. Not related to a planned dish. Use of everyday concepts.	Flexible
Safe food	Order, cleaning	Agreement on a clean and tidy result, but the teacher must constantly repeat procedures to arrive at the agreed result.	Delegating, structuring, correcting. Use of everyday concepts.	Ambiguous
	Food hygiene	Provides subject-specific support to students who show initiative and willingness to act; challenges other students to use subject knowledge.	Structuring, appreciative, inviting and challenging. Wonderment. Related to a planned dish. Use of everyday concepts	Flexible
Use of utensils		Provides subject-related positive questions and feedback. Supports the development of choreography. Challenges students to use their senses.	Appreciative, structuring, challenging. Wonderment. To some degree related to a planned dish and some use of subject concepts.	Flexible
Handling of foods		Focuses on choreography and procedures; shows how to break a herbal leaf between the fingers to sense it. Challenges students to reflect.	Structuring, contextualizing, appreciative, challenging. Wonderment. To some degree related to a planned dish and some use of subject concepts.	Flexible
Product evaluation		Students challenged to reflect: What must be changed to make a healthier product? How can we make thinner pancakes? Students were unfamiliar with product demands before they were engaged in the process.	Challenging. Not firmly attached to a particular dish or subject-specific concepts.	Ambiguous
Handling recipes		Decoding recipes – "look at the stages of the recipe, read step by step". Students challenged to adapt to the context.	Structuring. Challenging. Everyday concepts.	Flexible
Organisation		Do you remember what I said about organisation? Today we'll make the pancake mix first, and let it swell while we're in the lab.	Structuring, but not anchored in an agreed-upon dish or in subject-specific terms.	Ambiguous
Other		Small talk related to wishes, traditions and ambience.	Inviting	Flexible

Flexible describes teaching that has substantial subject content, presented with a kind of wonderment that challenges the students. Content defined as *ambiguous* lacks focus.

The results presented in Tables 4 and 5 show how the same teaching content is given different meanings due to teachers' more or less conscious didactic choices. Below, the possibilities for students to learn routines and their possibilities for *bildung* are discussed.

Students' possibilities to learn routines in cooking classes

- Do the students have the possibility to learn how to routinize safe cooking? Does this possibility vary, according to which cooking category they practice?

A number of teachers present cooking methods (cooking, frying, baking, thickening, stiffening, marinating, chopping and cutting), hygiene, handling of food and recipes by employing a flexible approach. These teachers make didactic choices that challenge individual students to be aware of the interaction between themselves, kitchen utensils, recipes and foods: there are conversations, reflections and actions around the different steps and order of actions. According to Surgenor et al. (2017), such an individual focus supports students in learning how to cook. If there is time enough, students will routinize their actions (Grimen, 1997). Teaching that involves conversation and reflection first and foremost challenges students' everyday concepts and gives them the opportunity to routinely engage in everyday communication about cooking.

Venäläinen (2010, s. 99) has studied the relation between conceptualization and practice in cooking. She found that when the teacher conceptualized kitchen utensils without showing students how to use them, they became insecure which, in turn, caused them to ask many questions. When the teacher acted in this way, his/her actions were categorised as *meaningless*. When kitchen utensils, which can be regarded as the key to routinizing (Ehn & Löfgren, 2010) and cooking, are neglected, the relation between the cook/student and cooking categories is made invisible (Sutton, 2015).

The teachers did not pay much attention to the organisation of cooking, as defined by Short (2003). Organising, in this context, is about organising the cooking process on the basis of the planned outcome, that is, a dish or a meal. Organising is closely related to product evaluation—the evaluation of products and cooking processes and the final result, in relation to the planned final product. However, when the teaching of organisation and product evaluation is *ambiguous* and/or *meaningless* and unrelated to the planned outcome, students will lack references for organizing and evaluating during the cooking process. Without a planned dish or meal as frame of reference, the student will not be able to see that organising and product evaluation steps need to be made in a specific order. This can quickly create chaos rather than the routine that enables students to find out how they can organize their own actions and choreograph their own steps (Ehn & Löfgren, 2010; Grimen, 1997). This study shows that when teachers make didactic choices about presenting cooking methods that are *meaningless*, students have less of a chance of learning how to cook. Teachers often argue that cooking skills are needed to be able to cook from scratch (Granberg, 2018, s. 51). A lack of focus on subject-related concepts and the practical skills of handling food will make it difficult for students to see the nuances of cooking methods, such as simmering versus boiling (Granberg, 2018). When students both boil/cook and fry in the school kitchen, without conceptualizing what they do or being helped by their teacher (Lindblom, 2016, s. 60), it will be their own individual knowledge and skills that determine what they can routinize.

Recipes seem to play an important role in cooking classes, but when teachers present them in a meaningless manner it will not be possible for students to routinize how to use them. However, this may work to the students' advantage; not being able to routinize recipes means that students must reflect and make choices themselves. And this might give them deeper knowledge about foods and safe food (food hygiene, order and cleaning) (Lange, 2017). In our study, this was the case for *food hygiene*, but not for *order* and *cleaning*. The teaching of *order* is ambiguous or meaningless, while teaching of cleaning is ambiguous and robotic. There are no opportunities for reflection when subject content is presented in a meaningless, ambiguous or robot-like way. If actions are not reflected on and there is no substantial content, they will be atomized and thus difficult to transfer to situations outside of the classroom. Grimen (1997) has a more nuanced view of routines. He considers that routines are never completely automatized; they will always require a degree of attention and, over time, have to be adapted to new contexts.

What goes on in the cooking class varies in a number of ways. Teachers make didactic choices, which means that the different ways in which they present the same subject content will produce different meanings. The use of recipes is one example; in one situation it is presented flexibly and meaningfully

while in another it is presented in a meaningless, rigid manner. Students will have different possibilities to routinize safe cooking, and this will depend upon the degree of clarity with which teachers present the different stages of the cooking process.

The results of this study show that it is teachers' didactic choices in areas that can especially hinder students from learning routines. Firstly, the teaching of food safety, order and cleaning is characterised by ambiguity or meaninglessness. Secondly, the teaching of organising and product evaluation is not clearly related to a planned end product. When there are no clear links to a final result it becomes difficult for the students to routinize, and practice what Sutton (2015) argues is important in learning how to cook: trying, failing and making changes in relation to the planned product, that is, conscious risk taking.

This means that the teachers' didactic choices, on the one hand, give students the possibility to routinize fragments of the cooking process. This study also shows that teachers challenge individual students on the interaction between themselves, kitchen utensils, recipes and foods if the different steps in cooking are at the centre of conversations, reflections and actions.

Routinizing of the cooking process and *bildung*

Food and health education should provide a foundation for formative *bildung* (The Norwegian Directorate for Education and Training, 2006). Formative *bildung* possibilities are linked to students' development; through their insights into the subject, of being able to communicate using subject-specific concepts and through action, on the basis of critical and creative thinking, in order to assume responsibility and co-responsibility (Dale, 2010). The possibility of material *bildung* is linked first and foremost to the transmission of subject content and norms (Myhre, 1978).

When teachers choose to offer a routinisation of fragments of the cooking process (cooking methods, foods hygiene, etc.) they also routinize the use of everyday concepts. The students then communicate, and critically and creative evaluate their cooking using those everyday concepts. When, in this way, the teacher de-emphasizes subject-specific concepts, it means that details and nuances are not visible to students, and the opportunities for formative *bildung* diminish.

This study shows that teaching cleaning has a normative character, and that it has an ambiguous content. Teachers organise their lessons so that the students can take responsibility and co-responsibility for cleaning; however, it is not always the case that students do so, since teachers choose to command them to carry out these tasks. This might be because keeping order and cleaning are regarded as low-status, everyday chores (Ehn & Löfgren, 2010; Short, 2003). The lack of a strong conceptual apparatus in the subject of food and health makes it difficult not only to raise the status of cleaning through discussions (Sutton, 2015), or to produce an interest in the different aspects of this topic. It seems that neither formal nor material opportunities for *bildung* are present when cleaning is taught, due to the weak and normative way in which it is taught.

The teachers in this study do not give students much of an opportunity to routinize cooking in relation to a clear picture of the final result—a dish or a meal—as a basis for risk-taking and decision-making. From a *bildung* perspective, this reduces the students' possibilities to practice critical and creative thinking and action early on in the process of learning how to cook. This reduces the possibility to conceptualise issues related to nutrition, health, sustainability, sensory and identity and thus acquire a more solid foundation for taking responsibility and co-responsibility in cooking.

Around the middle of the school year, the teachers tended to transfer the organization of cooking to the different student groups. Even if we do not know for sure what subject content the students routinize, this change gives them the opportunity to discuss, conceptualize and take responsibility and co-responsibility for the benefit of the group and its members. This way of organising group work becomes an arena where formal *bildung* ideas can be trained.

The students prepare dishes and full meals all the time during the cooking lessons. Nevertheless, this study shows that they only get the opportunity to routinize fragments, and this is because there is no focus on the interaction between students, utensils and foodstuffs. Such fragmentation will limit students' opportunity to see how they can participate and influence the cooking process. This can mean that they just learn to pass on what has gone before them, and that they merely experience a material *bildung*.

However, this study also finds that teachers organise the cooking classes so that there is an interaction between students, kitchen utensils, recipes and foods, and that where the steps involved in cooking are central to conversations, reflections and actions. In such situations, students are taught according to formal *bildung* ideas.

Conclusion

A number of teachers give student groups the opportunity to organise their cooking, at the same time as they conceptualize and teach safe food as steps in a choreographed order where interaction between students and the different components of the cooking process are emphasized. Such teachers give their students opportunities to routinize theoretical and practical actions and to reflect. Their students are thus exposed to the formal *bildung* processes that are a part of the National Curriculum.

The study shows that teachers' different and more or less conscious didactic choices give students different opportunities to choreograph and conceptualize their own cooking. This is a challenge to teacher education. There is a need to train future teachers to direct their academic gaze on the concept of cooking, and their didactic gaze on how didactic nuances can limit or promote students' opportunities for learning and *bildung*.

Author Biographies

Associate Professor Karen Lassen worked as a teacher educator for more than 20 years, and before that as a Home Economics teacher in high school. Now retired, but still active as researcher; active in The Norwegian Association for Food & health in Education and as an author of articles about the subject Home Econimics in Great Norwegian Encyclopedia.

Associate Professor Karin Hjälmeskog worked as a teacher educator for more than 25 years, and before that as a Home Economics teacher. Had a lectorate at Department of Education at Uppsala University. Now retired, but still active as researcher.

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Meme Uptake Strategy for Re-invigorating Home Economics: *HEcMemes*

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Abstract

The bring back home economics *movement has been judged harmful to home economics, because it demeans the profession and denigrates its image—despite best intentions of those outside the profession. This paper concerns the process of dealing with the fallout of this movement, and it does so from the perspective of creating positive home economics memes (sounds like genes). After profiling a range of re-words used in our literature about moving home economics forward and describing memes and their role in perpetuating the spread of cultural knowledge, the paper introduces and then applies Karafiath and Brewer's meme uptake strategy model. This involves dealing with immune-deficiency, parasitic and hostile memes while developing clear communications about defining and symbiotic memes. Home economists have to take full responsibility for messaging about the profession including that generated outside and within. One way to achieve this is to reimagine an invigorated profession and communicate this vision using affirmative* HEcMemes *while employing the meme uptake strategy model*.

KEYWORDS: BRING BACK HOME ECONOMICS; CULTURAL KNOWLEDGE; FUTURE PROOFING; MEMES; TAG CLOUDS; FAMILY AND CONSUMER SCIENCES

Introduction

Nickols and Kay (2015) strongly argued that "home economics[1] knowledge and experience could contribute to preventing and solving many current problems" (p. 3). They asserted that "the perception that home economics has vital information is reflected in news media as 'bring back home ec'" (p. 3). Conversely, Smith (2015, 2016) argued that the recent bring back home economics movement, emergent from well-intended actors from outside the profession, is actually causing us harm. After collecting and analyzing 39 such articles (2010-2014), she remarked that "I collected these articles in search of allies... Initially it was heart warming to see articles that were actually supporting our profession. Now I am not so sure" (Smith, 2015, p. 143).

After a critical discourse analysis of this collection, Smith (2016) identified the obesity epidemic and the learn-to-cook imperative as the two dominant discourses. Similarly, Pendergast reported that a 2017 Google Scholar search for *bring back home economics* yielded 128 artifacts (2010-2017) increasing from two in 2010 to nearly 30 in 2015. The majority were published in reputable academic journals (52 different venues), and the main topics again were *food*, *cook*, and *nutrition education* with reference to *obesity* (Pendergast, 2017, see tag cloud at p. 86). This movement has not slowed down. A November 2020 Google Search yielded 45 hits for 2019-2020 albeit many referenced Lichtenstein and Ludwig's (2010) *Journal of the American Medical Association* article whose title contained the exact phrase *bring back home economics*.

Smith (2016) asserted that pervasive attendant discourses about obesity and cooking "demean the profession" and further denigrate its image, because they "reinforce the 'stitching and stirring' stereotype" (p. 9) and make our work look shallow and superficial. She maintained that these discourses also ignore the pervasive underlying ideological roots wherein structural factors, social

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[1] The message herein also applies to home economics by other names: family and consumer sciences, family studies, human ecology, home sciences, home ecology, household sciences, consumer sciences

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institutions and social practices impede people's best intentions of trying to eat a healthy diet. The *bring back home economics* rhetoric ends up blaming individuals instead of the system. Being associated with this subliminal message harms the profession (Smith, 2016).

This paper concerns the process of dealing with the fallout of this movement and it does so from the perspective of creating positive home economics memes (sounds like genes). After profiling a range of re-words used in our literature about moving home economics forward and describing memes and their role in spreading cultural ideas, the paper introduces and then applies Karafiath and Brewer's (2013) meme uptake strategy to home economics.

Re-words about Reinvigorating Home Economics

Etymologically, *re* is a word-forming element meaning back to an original place through a process that usually entails a sense of undoing and building anew. The result can be again, once more, back, a turn (Harper, n.d.-b). This section reports on a range of ideas or *re*-words used in our own literature to describe how home economics can move forward and future proof itself: renew, rethink, remake, reinvent, and reimagine (also resurgence, refuse, reconsider, revive) (see Table 1). Some quick perusal shows that while renew means bring back to an original state (basically), the intent of the other re-words is to create something different by effecting change usually through a process of creation and reconceptualization.

Table 1   **Re-words About Reinvigorating Home Economics**

Renew	(a) resume after an interruption, (b) extend the validity of something for a further period or (c) exchange something that is old or not working with something new of the same kind
Rethink	reconsider something with a mind to change it
Remake	cause to come about again but it will be different; a redo or a makeover through an act of creation
Reinvent	start with something that already exists and make it over into a different form; to redo completely; also, revive or bring into use again or make valid again
Reimagine	form or conceptualize a mental image of something by reinterpreting it in a new way or seeing it in a different light (usually more positive)

The profession must be invigorating (i.e., have strength, vitality, and relevance); if this starts to slip or is perceived as such, we must act. However, not everyone agrees on what that action looks like; hence the range of re-words (see Table 1 and the following section). Regardless, everyone's intent is to future proof the profession by making sure it remains viable and legitimate for centuries to come regardless of specific global crises facing humanity (Pendergast, 2017).

Renew

In reaction to the bring back home economics rhetoric, Deagon (2012) claimed that home economics does not need to be resurrected or brought back from the dead, because it *never* died. She conceded that we *do* need renewal as we continue to struggle with legitimacy and recognition and strive to be taken seriously. Dictionary definitions of *renew* (Oxford University Press, n.d.-a) include:
   a. resume after an interruption
   b. extend the validity of something for a further period, or
   c. exchange something that is old or not working with something new of the same kind.

Renew seems to be an appropriate verb for our situation. We never went away, but our presence has been diminished, diluted and marginalized (Nickols & Kay, 2015; Pendergast, 2001; Stage & Vincenti, 1997). In the meantime, somehow, we are now perceived relevant but only when we teach cooking and nutrition to avoid obesity. Everything else we stand for is dismissed.

After completing her analysis of the bring back home economics coverage, Smith (2016) dug even deeper, claiming we must avoid the other-imposed stigma of framing "home economics as a form of social control and home economists as prescriptive 'experts' [who are] agents in the 'regulation of

deviant populations'" (p. 9). The latter refer to individuals who allegedly break social norms by eating an unhealthy diet and becoming obese. If home economics is brought back, members of society can turn to us as the experts imposing dictates on healthy eating.

Smith (2016) eschewed this narrow, prescriptive stereotype of the profession. Pendergast (2001) did as well, suggesting that we rock the boat and combine technical how-to thoughts with political and ethical responsibility to society and humanity. We must refuse to conform to restrictive stereotypes. Smith urged the profession to "demonstrate ways in which our research and pedagogies can move beyond simplistic understandings and simple solutions" (2016, p. 11).

Rethink

Like Deagon (2012), Pendergast (2001, p. 208) agreed that we need renewal, but proposed instead that this should happen through "re-thinking the thinking that has already been done" in and about the field. Rethink means reconsidering something with the intent to change it (i.e., thinking about it very carefully; paying close attention to it) (Oxford University Press, n.d.-b). Pendergast (2001) proposed that we reconsider home economics from the perspective of refusing to be marginalized; not clinging to the familiar; and pushing back against ideological, systemic oppression by being subversive (undermining established authority and power) and then outright overt (come out of the shadows). Pendergast and McGregor (2007) further addressed this idea in a monograph about home economics and patriarchy.

Like Pendergast (2001), Stage and Vincenti (1997) also named their book *Rethinking home economics*. They recognized that "home economics found itself increasingly beleaguered in the 1960s and 1970s [and] in the ensuing decades … has continued to grapple with its stereotype of 'stitching and stirring'" (pp. 12-13). They recommended that we reconsider (*rethink*) home economics by exploring how political ideologies that devalued women and their place in history had diminished opportunities for educated professional women to make a difference. In 1997, they maintained that moving home economics forward would require paying attention to gender-based problems (valuing women) while not consigning home economics to the margins again. In reality, home economics *is* mainly shaped by women, but it is focused on home, family and community *not* women.

Remake

More recently, Nickols and Kay (2015) named their book *Remaking home economics*. To remake means to cause to come about again, but it will be different; a redo or a make over through an act of creation (Anderson, 2014). Nickols and Kay (2015) recommended that we remake home economics by reflecting on the past as we accommodate a fast-changing global environment by being resourceful and innovative. Claiming that home economics has been remaking itself since its beginning 125 years ago, they asserted that it is especially germane in contemporary times because of its myriad specializations in combination with its holistic, interrelated perspective. Through this prism, the profession can come about again, just differently. They never doubted its continued currency.

Reinvent

In Finland, Tuomi-Gröhn (2008) advocated for reinventing home economics. Reinvent means to start with something that already exists and make it over into a different form; to redo completely. It can also mean revive or bring into use again or make valid again (Anderson, 2014). She and her colleagues said that rather than focusing on the *science* of achieving an optimal quality of life, we should instead address the art of meaning making and the *art* of making the everyday. Home economics should be reinvented, so that it does not privilege science and empiricism but instead values "the complexity of the everyday and everyday making" (Tuomi-Gröhn, 2008, p. 15) through an art (creative) lens. This—rather than assuming that the everyday means mundane and insignificant. The everyday work of families sustains humanity; also see McGregor's (2012) work on the everyday and home economics.

Reimagine

Perhaps a better *re*-word is *reimagining* home economics. Imagine means forming or conceptualizing a mental *image* of something (Anderson, 2014), which for home economics started more than 125 years ago at the founding conferences in Lake Placid and continues unabated. Reimagine thus means to form a new conception of something by reinterpreting it in a new way or *seeing it in a different light*. This idiom refers to regarding or understanding something in a typically more positive way

(Farlex, n.d.). Through the benefit of shining a light on something that has been sitting in the dark (per se), people can see more and differently than before, which aids in a fresh appraisal (Payer, 2018). Ferretti et al. (2018) described "'re-imagination' as a space [to] reflect further and discuss alternatives to current … frameworks" (p. 732).

Tag Clouds and Memes

In this collective spirit (renew, rethink, remake, reinvent, reimagine) of reinvigorating home economics, this paper develops the idea of creating and spreading positive home economics memes (*HEcMemes*), family and consumer sciences memes (*FCSMemes*) in the United States, that focus on promoting the profession's longstanding power, relevancy and legitimacy for addressing the complex array of problems facing humanity—painting home economics in a new light.

Evolutionary biologist Richard Dawkins (1976) conceived the concept of a *meme* to convey the spread of *cultural ideas*. Deagon (2012) briefly referred to home economics memes defining them as "enduring packets of cultural knowledge about Home Economics" (p. 85). She recognized that one of our biggest challenges is to make sure that "derogatory and negative memes fade from our collective cultural knowledge" (p. 86). Just as the profession has endured (Stage & Vincenti, 1997) so have people's perceptions of it and not always in a positive light (Deagon, 2012).

Actually, Smith's (2015) use of the tag cloud strategy to analyze the bring back home economics movement inspired this paper about home economics memes. Her work yielded meta data supporting a critique of the movement. Meta data are simply data that describe other data. Memes also reflect meta data—what people think and feel about phenomena. Before Smith (2016), Pendergast (2010, 2013) had pioneered approaching home economics using the tag cloud strategy (see also Deagon & Pendergast, 2019) with this paper continuing from Deagon's (2012) brief sojourn into exploring home economics memes.

These two approaches to understanding, representing and communicating about home economics are similar but different. Both tag clouds and memes[2] generate powerful, lingering, easily perpetuated images and perceptions of the profession (positive and negative), but tag clouds draw people deeper into an idea while memes spread ideas. Home economists must be fully aware of their persuasive (sometimes subliminal) influence on the perception of and reception to the profession and what it can offer society and humanity.

Tag Clouds

Briefly, to tag something is to find and identify it. A tag cloud (or word cloud) is a cluster of these tags. The tag cloud strategy involves analyzing text, tagging words therein, counting them and then creating a visual representation of their frequency by using different fonts, colors and text size (pitch). The larger the word appears in the cloud (usually in the center), the more frequently it appeared in the text (McNaught & Lam, 2010; Salonen, 2007), but size does not necessarily indicate the word's importance, which requires a different analysis (Smith, 2015).

Figure 1 contains a tag cloud for home economists' thoughts on spiritual health and well-being used with permission from Deagon and Pendergast (2014). Tag clouds represent "a kind of social picture and knowledge sharing … a type of meta data of the text contained within" (Pendergast, 2013, p. 59). They constitute "a snapshot image of the contents [of documents or websites] thereby attracting others to engage at greater depth if the tag clouds appeal to them" (Pendergast, 2010, p. 293).

Memes

Like tag clouds, memes can be snapshot images with attendant text that attract people to meta ideas spreading throughout a culture. Beyond the Internet and social media platforms, however, other culture-carrying units exist: books, collective experiences, traditions, values, songs, nursery rhymes, dances, clothing (e.g., t shirts and ball caps), movies, habits, practices, theories, philosophies, and day-to-day social interactions and communications (Dawkins, 1976; Karafiath & Brewer, 2013). It is

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[2] *Tag Crowd* is a commonly used tool to create tag clouds: https://tagcrowd.com/. Both *Canva.com* (https://www.canva.com/create/memes/) and *imgflip.com* (https://imgflip.com/memegenerator) can be used to create memes.

this broader notion of a meme that forms the basis of the discussion offered in this paper, meaning its about other culture-carrying units aside from Internet memes.
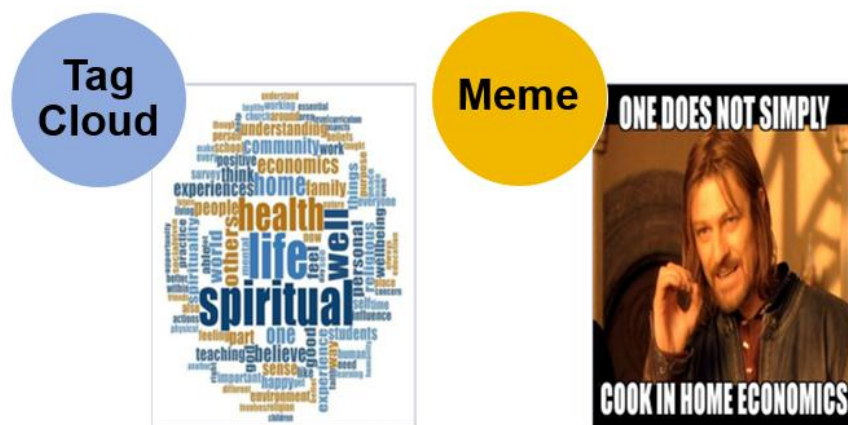

Figure 1   **Home Economics Tag Cloud and Meme**

That said, Gil (2020b) described an internet meme as "a virally transmitted image embellished with text usually sharing pointed commentary on cultural symbols, social ideas, or current events" (para. 1). Figure 1 contains a home economics meme created by Stuart919 (2014). Y. F. (2020) explained the origins of this particular meme or at least the "one does not just simply…" part of it. As an aside, Cheng and Polataiko (2020) and Orlofsky (2019) addressed the grey area of copyright usage of previously posted memes. Per Cheng and Polataiko (2020), this image is not being used herein for a profit, and the original work has been attributed, meaning its usage runs a low risk of infringement.

If a meme posted to the Internet resonates with people (i.e., strikes an emotional chord), they tend to spread it using social media platforms (e.g., texting, Facebook, Twitter, Instagram), email and even word of mouth. Regardless of how it is propagated, "the more a meme is spread, the greater the cultural influence it has" (Gil, 2020b, para. 1) until it becomes a household name (e.g., Keep Calm, Brexit, Coronavirus, Murder Hornet, climate change) (see Gil, 2020a). Meme topics can cover the gambit of the human experience and range from the mundane to critical life and world events (Ahrenstorff, 2019; Gil, 2020a, b). The topic herein is home economics' reputation as a profession and discipline.

Memes communicate the underlying feelings, thoughts, opinions and beliefs of the person who created them as well as those who decide to share them (i.e., spread them around) (Ahrenstorff, 2019; Gil, 2020b). Memes are often funny and injected with humour (light and dark, silly and painful). They can also convey political and social commentary (local and world events), shock value, and life lessons. Memes commonly elicit strong emotional reactions: laugh out loud, guffaw, groan, gasp. Some memes appeal to a select few and others are universal (Gil, 2020b).

"Popular memes stick around, … just because they are so relatable" (Ahrenstorff, 2019, para. 3). Karafiath and Brewer (2013) noted that people can become infected with a meme (i.e., an idea) with (un)desirable effects. For example, "Home economics is just cooking and sewing" is a limiting message about the profession, but it still resonates with (infects) a lot of people. Once infected, people either embrace the meme (idea) and choose to spread it or try to "fight it off" (Karafiath & Brewer, 2013, Slide 5) by denying its existence or changing things so *that* particular meme goes away and is not culturally perpetuated.

If an idea does not resonate (ring true) with someone, they are, in effect, immune to the message and protected from infection. This means they can ignore the meme's existence and go about their lives. Karafiath and Brewer (2013) used the example of the *ClimateMeme* (global warming) as an idea that had not spread—very few people had become infected at the time. "Whatever messaging worked to infect" (Slide 6) the 5% of humanity that believed in climate change did not work on the rest of the world. Karafiath and Brewer observed that memes that fulfil a psychological need spread quickly while memes heavy with negativity, gloom and conflict spread slowly.

Indeed, for a meme to propagate, it has to be appealing to the masses or, as Ahrenstorff (2019) put it, become fully embedded in the culture and part of the public lexicon. Pendergast (2010) called this a folksonomy—the language of folks—"a people's taxonomy" of a phenomenon (p. 293). Also, if the entire landscape for a meme is dark (i.e., a gloomy outlook on the message), the meme lacks power to spread (Karafiath & Brewer, 2013). This is exacerbated if there is "a lack of unity in the meme space" (Karafiath & Brewer, 2013, Slide 22). That is, incongruent, conflicting and incompatible messaging can hold back the spread of a meme. Those intrigued with creating and spreading positive home economics memes must craft their message properly, and then stay on message. As evidenced by Brewer's (2014) blog entry on *Why is global warming such a conversation killer?!!*, staying on message is not an easy task let alone agreeing to the same message.

Meme Uptake Strategy Model Applied to *HEcMemes*

Brewer (2013) and Karafiath and Brewer (2013) created an approach for mapping the uptake and proliferation rate of cultural memes, which McGregor (2014) translated into a meme uptake strategy model (see Figure 2 used and adapted with permission). Once explained, it will be applied herein to discuss the creation and infection of people with positive *HEcMemes*. With this innovation, this paper moves beyond Deagon's (2012) brief introduction to home economics memes and their role in renewing the profession.
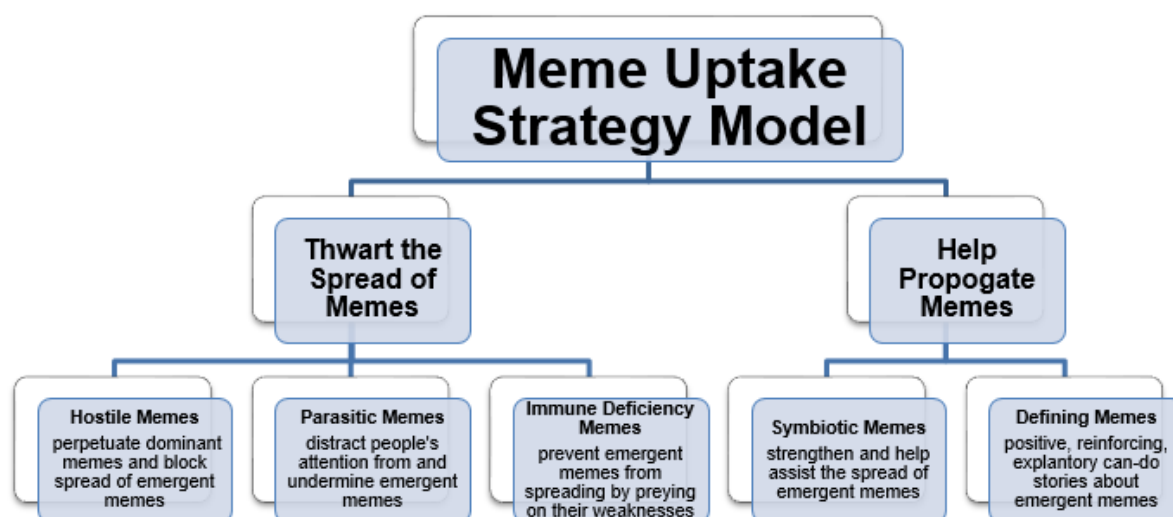

Figure 2   **Meme Uptake Strategy Model (adapted with permission from McGregor, 2014)**

In short, Brewer (2013) and Karafiath and Brewer (2013) identified a five-dimension strategy for introducing what they called *ClimateMeme2* to replace the *ClimateMeme* that did not spread. First, they maintained that memes that define and explain climate change must be created thereby promoting a can-do spirit—showing people that one has taken the initiative to learn about the issue, knows what one is talking about and is committed to the cause. Second, people must identify and accommodate any immune deficiency memes that prey on any weaknesses of the new message (*ClimateMeme2*) and prevent it from spreading.

Third, hostile memes will be threatened by *ClimateMeme2* (e.g., the oil industry), so they protect themselves by blocking its spread and trying to destroy or discredit it by using conspiracy theories, character attacks or creating self-doubt. These hostile memes must be identified, deconstructed and eliminated. Fourth, Brewer (2013) explained that human attention is food for memes. Parasitic memes eat up the attention of competing memes leaving none left for the new message. They latch onto the old *ClimateMeme* and distract people's attention from the real issues that the new *ClimateMeme2* is trying to address. Parasites must be identified so their exploitive and distracting power can be made transparent and minimized thus opening a space for *ClimateMeme2* to flourish.

Finally, symbiotic memes (advantageous to both) must be found and propagated, so they can strengthen *ClimateMeme2*, which is "too weak to do so on its own" (Karafiath & Brewer, 2013, Slide 28). Brewer (2013) further explained that symbiotic memes spread just fine on their own and do not interfere with the spread of *ClimateMeme2*. But it can be very beneficial to find symbiotic memes,

because associating with them can increase the vitality and strength of new memes. Conversely, memes exist in complex interconnected webs. Thus, anyone creating new memes must be cognizant of how a symbiotic meme supportive to their cause may actually be harmful if it, itself, is in a mutually supportive relationship with a meme hostile to the new meme. Memes are contextual (J. Brewer, personal communication, November 25, 2020).

This meme uptake strategy model is now applied to home economics to develop an approach for creating and perpetuating affirmative memes about the profession. This does not represent a linear approach but rather an iterative, fortifying approach with a focus on specific meme types when deemed prudent for the cause of advancing positive images of and messaging about home economics. The model addresses both (a) propagation memes and (b) heading-off memes that limit the spread of reimagined, positive messages.

Defining *HEcMemes*

Using Karafiath and Brewer's (2013) suggestion, home economists must reimagine and create new definitions and images of the profession, so that the public can clearly interpret our can-do attitude. This idiom means that people are eager and willing to accept and meet new challenges (Merriam-Webster, n.d.). A can-do profession would thus be marked by its willingness to tackle a problem or task head on and work on it until it is done. Those involved would exude confidence that they are up to the task. Can-do people succeed in exciting people with their messages and activities (STANDS4, n.d.).

Public perception of the home economics profession as open-minded and keen to explain its purpose, mission (now) and vision (future) in contemporary times paves the way for new messages to spread. A can-do attitude acts as a lubricant and catalyst for change and others' receptiveness to this transformation. For example, Deagon's (2012) can-do image is home economics "maturing as a gender-neutral and publically accepted tool for emancipatory change and individual, family and community empowerment" (p. 86).

Immune Deficiency *HEcMemes*

Home economists must identify packets of cultural knowledge that weaken new messages about home economics and prevent them from spreading—called immune deficiency memes. If one is deficient in immunity, one loses resistance. An enduring example of something that could weaken any new messages about home economics is people's past public-school experience (i.e., their junior and senior high school memes). Even home economists themselves have acknowledged unfortunate instances wherein students received exposure to narrow notions of domestic tasks in conjunction with little to no attempt to teach them to think critically about these endeavours (Apple, 1997; Pendergast, 2001).

Instead of just making biscuits, students can be taught the food science (chemistry) of combining various ingredients when baking (cross-curricular connections). Instead of *just* sewing an apron (which *is* important, because it teaches fundamental sewing skills needed for nearly every other sewing project), teachers can teach about the use of child labour to make store-bought clothing. The collective cultural memory of less-than-inspiring home economics classes, with little to no context beyond the immediate task, is a powerful immune deficiency meme that must be recognized, owned and accommodated in new messaging.

To that end, Deagon (2012) urged us to challenge negative public perceptions and "reinforce positive public perceptions" (p. 75) by remessaging "the purpose and effectiveness of Home Economics" (p. 79). As an example, she profiled a collection of people "hooked on home economics" (p. 81), people who attributed their career success and savviness to having benefited from home economics in high school. Deagon (2012) highlighted "online news headlines about high achieving personalities who attribute Home Economics as making an impact on their lives and careers" (p. 83). This positive affirmation is a powerful counterpoint to immune deficiency memes. It both is fact based and has a human face.

Another example of a meme (message) that may weaken messages about home economics is the STEM movement (Science, Technology, Mathematics and Engineering). Some well-meaning people from outside the profession are chiming in. Dinerstein (2018), a medical doctor, claimed that home economics "was cast aside early for a greater emphasis on STEM courses, after all, cooking, shopping,

cleaning are tasks of daily living, we do not reward them financially, and presumably, we learn by osmosis and observation" (para. 4). Rather than recognize it as an established discipline in its own right, he instead said it was time for home economics to be considered a STEM course. Even messages from within the profession were damning. Etheredge et al. (2014) argued that "a STEM-informed FCS curriculum... would gain increased awareness *for* FCS" (p. 9), but only because FCS would be associated with STEM. Likewise, Turgeson (2014) said that FCS should integrate with STEM so FCS can "prove [its] credibility, make [the FCS] curriculum relevant" (p. 9).

McGregor (2019) argued that "an obvious counterpoint is that FCS is *already* credible and relevant. Actually, its roots are in STEM … and from those roots it became a standalone discipline and profession" (p. 39). Intimating that home economics will gain legitimacy by aligning with STEM actually undermines home economics' legitimacy. This is yet another example of an insidious immune deficiency meme preying on another meme's perceived weakness.

Hostile *HEcMemes*

Another challenge home economists face is to discern hostile genes or cultural ideas about home economics that block the spread or propagation of any new messages. *Hostile* is from the Latin *hostilis*, "stranger, enemy" (Harper, n.d.-a). It means antagonistic, aggressive and opposed to (Anderson, 2014). Hostile memes spread through conspiracy theories, character attacks and self-doubt (Brewer, 2013; Karafiath & Brewer, 2013).

Conspiracy theories. When people explain something in way that invokes perceptions of an unlawful, secret plan by a powerful group (often with political overtones), they are creating a conspiracy theory (Goertzel, 1994). Conspire can also mean acting together to bring about an unfortunate result (Anderson, 2014). Some people conspire to thwart home economics with a prime example being educators and policy makers who embrace patriarchy. Although their efforts are not normally unlawful or intentional (blinded by ideology), they can still be interpreted as conspiratorial.

"Any social, political, economic, or educational system that grants privileged status to males, and permits or encourages their domination of women, is a patriarchal system … As a fundamental principle, the patriarchal ideology guarantees that certain groups are privileged while others are marginalized" (Pendergast & McGregor, 2007, p. 3). Important for home economics is patriarchy's division of work into paid and unpaid and space into public (market) and private (home). And it always preferable that men have power over some men and over all women (Pendergast & McGregor, 2007).

Imagine a school board that is cutting a food program in favour of a commercial food program. Its justification is, "Why pay for two food programs?" Once female home economists take the time to figure out where the male administrative staff is coming from (i.e., their unarticulated patriarchal assumptions that are shaping their decisions and actions), it is easier to articulate arguments that support the home economics food program. We have to question the administration's assumptions about food—lifestyle, home and food are difficult to quantify, *but* commercial and food are hard and measurable hence more defensible.

To continue, we live in a world that values money and numbers not home and food. So, to any board members embracing patriarchy, it makes *complete* sense to value the commercial food program, even though they *may not even know why* they are leaning that way (again, ideological blinders). The home economist's job is to help them *see* this. With that insight, it is easier to make different arguments supporting the home economics food program knowing one is going up against an ideology and not evil people. Once home economists have a better understanding of patriarchy's invisible power, they can make it visible, which helps others hear our message—our positive *HEcMeme*.

Character attacks. In a book memetically titled *Stir it Up* (notice the stereotypical meme at play), Elias (2008) maligned the profession by claiming that "home economics no longer exists as a unified movement" (p. 3) (I vehemently beg to differ). A non home economist who taught history at a community college (*not* home economics history but colonialism, women and African American history), damned us to the graveyard. Because her book title also contained the subtitle "home economics in American culture" others were drawn to it and lauded her deep insights (e.g., Emerson, 2009). Stage (1997), herself a woman's historian, poignantly acknowledged that "home economics has not fared well at the hands of historians. Until recently, women's historians largely dismissed home economics as little more than a conspiracy to keep women in the kitchen" (p. 1).

The dust jacket on Elias' (2008) book has a 1950s picture of a woman wearing a lab-coat and spoon feeding a blindfolded, seated man. Originally meant to represent avant-garde food product development and testing pioneered by home economists, Elias (2008) chose this image of a woman apparently dominating a man placed in a submissive position to convey her message about home economics. This book (a cultural idea-conveying unit) is definitely an example of a hostile meme toward home economics—a very damning character attack.

To further illustrate its hostility, consider that the founder of home economics, Ellen Swallow Richards, said "it is the economy of the human mind and force that is [sic] most important, and so long as the nurture of these is best accomplished within the four walls of the home, so long will the word *Home* stand first in our title" (as cited in Hunt, 1912, p. 270). Despite this 100-year-old keystone, Elias (2008) claimed that, in the mid-nineties, "most home economics departments had long since changed their names to rid themselves of the word 'home'" (p. 174). This reason for the name change could not be further from the truth. American home economists at the 1993 Scottsdale, Arizona meeting had opted for the name family and consumer *sciences* (FCS) not because they eschewed home, but because they wanted to convey the message that the profession's work on behalf of and through home would now embrace *critical science* not just empirical, positivistic science (Vincenti et al., 2004).

Elias (2008) totally diminished this groundswell philosophical forward movement. Not appreciating the significance of the American name change, she falsely claimed that "home economics departments ... have ceased to exist on American campuses" (p. 172). They *do* exist just under the FCS name. Even more damning, she concluded that "the home economist has passed into the mists of collective memory" (p. 173). Tell that to the tens of thousands of home economists who will be reading this article.

The hostile meme went on and on. At page 175, Elias (2008) took comments from home economists themselves out of context to develop her position that home economics is dead, spends too much time navel gazing and is in cahoots with business. She falsely claimed at page 171 that home economics misappropriated the name human ecology from an already existing subfield when in fact Ellen Swallow Richards (founder of home economics) coined the term herself in the early 1900s (Dyball & Carlsson, 2017; McGregor, 2020). Anyone reading Elias' (2008) book, who becomes infected with her hostile meme, can pass it on and on. Hostile memes *must* be identified, deconstructed and eliminated (Karafiath & Brewer, 2013).

Others have attacked the character of the profession by judging it to be on the fringe rather than in the mainstream—a frill subject matter like music, art, drama, physical education, and industrial arts (McGregor, 2019). Using a metaphor, Houston (1980) explained that because the arts are, in fact, infused across the curriculum, they are the surrey itself and not the fringe on top. A surrey was a doorless carriage often with a fringed canopy (roof-like protection). Fringes (e.g., hair bangs, trim on a shawl, tassels) are mistakenly considered decorative rather than functional. Mixing metaphors, Houston added that the arts are "the cake, not the icing" (1980, p. 30). The same sentiment holds for home economics.

Being on the fringe is being on the margin. Being on the margin means being readily ignored and lacking a voice and influence (Pendergast, 2001). If something is on the fringe, it is still part of something but at the farthest point from the center (Pearson, n.d.). Being on the outer edge, it does not completely belong nor is it fully accepted by the main group. Often, it can only gain admittance to the center upon agreement to exemplary (inordinately high standards) and conformist behaviour. Regarding home economics specifically, Pendergast (2001) admonished us to no longer cringe on the margins. She provocatively proclaimed that we get a warped sense of camaraderie from fighting battles to save the profession, but we go about it the wrong way.

With that insight, she urged members of the profession to dismantle the familiar (which holds us back) and learn how to ride the waves of change by being expert novices (i.e., very good at dealing with uncertainty and risks while continually learning anew) (Pendergast, 2001). "Home economists can, *should*, engage in risky activities that mock officialdom, refuse [imposed] order, refuse normalization and refuse to be tidied and kept in place" (McGregor, 2003, p. 177).

Self-doubt. Members of the profession have to stave off self-doubt and practice from a position of conviction. Doubt is a feeling of uncertainty—not completely confident and sure (Anderson, 2014).

Self-doubt is uncertainty about one's competence in important abilities. Research shows that feelings of self-doubt may pose a threat to self-esteem (i.e., one's evaluation of and respect for oneself) (Hermann et al., 2002). This correlation has implications, because home economists who doubt themselves may have low self-esteem leading to less chance of sustaining activities pursuant to defining, explaining, justifying and legitimizing home economics through new culture-carrying units (memes).

From within, home economists' self-doubt, some say reflected in ubiquitous name changes, is very damaging to the spread of new home economics massages. As a respectfully tendered example, Marjorie East, a prominent and influential American home economist, described herself as having spent her life trying to "bring order into the field and a sense of intellectual responsibility," but she was "dismayed by my failure to make a profound difference in the field. Many other ways I might have shaped the field occur to me now. Could, should, ought, are words that haunt old age" (East, 1997, pp. 120-121).

This self-derogatory statement, delegitimizing her own work, is too common in our rhetoric. East was 81 when she made those comments; she passed away in 2015 at the age of 97 (Burpee, Carpenter, & Hutchins Funeral Home, 2015). In affirmation of her influence, Marjorie's obituary focused almost solely on her leadership within, visions of and contributions to home economics (Burpee, Carpenter, & Hutchins Funeral Home, 2015). Such was the impact she had. Her work is considered seminal (i.e., strongly influencing later developments); I just cited her last week. Home economists' self-doubt can become a hostile meme in its own right, and others can exploit that weakness.

Parasitic *HEcMemes*

By analogy with biological parasites, parasites live on or in a host organism feeding off it at the latter's expense. The intestinal tapeworm is a common human parasite. The worm grows while the human host weakens and sometimes dies. Getting rid of the parasite entails either starving it by making the food source less palatable or digestible or paralyzing it and flushing it out (Boudry & Hofhuis, 2018). Parasitic memes "undermine the interests of their hosts [because they are] 'selfish' forms of culture that are designed to further their own propagation, even at the expense of their hosts" (Boudry & Hofhuis, 2018, p. 156).

One such parasitic meme that feeds off home economics and undermines its interests, despite its best intentions, is *bring back home economics*. Those perpetuating it, medical doctors and health agencies, are struggling with educating patients about foods and nutrition. Health care systems (policy makers) are struggling with the costs of obesity. It is in *their* best interest to selfishly ask for home economics to be brought back, but home economics suffers (weakens), because a very narrow stereotype is perpetuated—one that damned us beginning in the sixties and seventies (Stage & Vincenti, 1997).

If home economics remains infected with this parasite, it will not thrive, and both interests will be compromised. Smith's (2016) critical discourse analysis of the movement was her attempt to paralyze the parasitic meme and flush it out. This purge matters, because a pervasive and persistent strain of negative home economics beliefs that benefit someone else can wreak havoc on the profession's reputation and viability (per Boudry & Hofhuis, 2018).

Symbiotic *HEcMemes*

Symbiotic is Greek *sumbiosis*, "live together" (Harper, n.d.-c). As the profession creates and propagates new home economics memes (messages), it will benefit from finding and aligning itself with memes that serve both interests thereby strengthening messages about home economics or at least not interfering with their spread. Unlike parasitic relationships, symbiotic relationships are beneficial, advantaging everyone. Any messages pursuant to the well-being and wellness of individuals, families and community would constitute symbiotic memes. So too would those advocating for the consumer interest, adequate shelter, food security, child and human development, nutrition and wellness, dignified aging and other perennial problems that every human generation encounters over its life span.

The caveat is that any symbiotic meme must not align too closely with ideologies conducive to privileging the market, profit, economic growth, technological progress, militarism, violence and such. This would be hostile to the home economics message negating any symbiotic relationship. For

example, it would be unwise to align a positive home economics message about how it fosters the consumer interest with a likeminded, politically active consumer advocacy group that is partially funded by a military-industrial complex corporation. The latter sell consumer goods and deliver services *but* also make and sell military weapons for the state and reek of partisanship. Although the (symbiotic) consumer advocacy group is *not* in the weapon-making business, its relationship with a corporation that *is* could taint any home economics message by association.

Discussion and Conclusions

Per Karafiath and Brewer's (2013) meme uptake strategy model (see Figure 2), if home economists can deal with immune-deficiency, parasitic and hostile memes, while developing clear communications about defining and symbiotic memes, the spread of positive *HEcMemes* is more assured. Said another way, inspired by the can-do spirit (the defining memes), *HEcMeme* advocates can persevere in their attempts to infect people with the home economics imperative via new messages and judicious connections to symbiotic memes.

Advocates for *HEcMemes* must remember that memes are attracted to or repelled by minds at different levels of readiness for the cultural idea (Lucas as cited in McGregor, 2014). Given the inadequate reception and respect that the profession receives these days, due in part to the damaging memes thwarting our reception, it will be challenging to break through any cultural transmission barriers with a reimagined profession (or … choose an re-word: renewed, rethought, remade, reinvented). Whatever messages we *do* create must be truly relatable, appeal to a psychological need and be positive in nature (not dark, gloomy or negative) (Ahrenstorff, 2019; Karafiath & Brewer, 2013). Once infected, people will hopefully be more inclined to purposefully place the *HEcMeme* in their personal mind space and spread it (Lucas as cited in McGregor, 2014).

Fortunately for us, memes go through variations, mutations, competition, and inheritance each of which influences its generative potential (i.e., capability of reproducing and spreading). Once positive *HEcMemes* come into existence, begin to spread and become part of the cultural DNA, they can self-replicate, mutate and respond to people's acceptance or resistance to their existence (Kelly, 1994). By consistently employing the meme uptake strategy model (Figure 2), home economics can ensure that *HEcMemes* morph into something that deeply resonates with the global cultural psyche of people concerned with addressing perennial problems on behalf of humankind through the home economics imperative.

Coming full circle to the *bring back home economics* parasitic meme that prompted this discussion in the first place, Deagon (2012) introduced the idea of participatory journalism as a way to counter mainstream journalism's distracting messages (including books like Elias, 2008). Deagon (2012) charged *participants* in the home economics profession with finding their own can-do home economics stories and being "aware of the need to mitigate the effects of undesirable news reports and quality control of information" (p. 84). She advised home economists to find and promote messages and stories (e.g., *HEcMemes*) that (a) convey our service to humanity, (b) reinforce our commitment to stewardship and care of community and environments, and (c) focus on larger realities by transcending beyond just individuals and families to all of humanity and the Earth.

Per Figure 3, home economics is so much more than meets the eye—there is more to it than what there appears to be at first glance. Knowing this in our collective hearts, we can create and use memes to our advantage (e.g., media articles, Internet memes, books, policy work, think tanks and other culture-carrying units). Ensuring that our messages resonate with people (ring true) opens doors to a more intense dialogue about what the profession brings to humanity and the future. Gabriel (2020) provided a brilliant example in her response to a Philippine senator's suggestion that home economics be temporarily removed from the curriculum during the COVID-19 global pandemic to make room for science, math and reading. She concluded that "HE offers skills for life. This short statement alone says so much about its profound importance in education" (para. 8). Similarly, in its recently launched *#FCSsuccess* campaign, the American Association of Family and Consumer Sciences (AAFCS) (2020) identified home economists as "the best messengers to help us tell our story [and] shed greater light on the value of what we do" (paras. 4, 5).

Figure 3   Home Economics Meme

To wrap up, home economists have to first get people's attention with our messaging and can-do attitude and then work to engage them in deep discourse with our mission (now) and vision (future) (AAFCS, 2020). That conversation would be focused on reiterating what we already do that works for the good of humanity and informed by re-words pertaining to the creation and reconceptualization of home economics in a new and forward-looking light. To reimagine home economics and keep it invigorating, we must create a reflective space where we can explore alternative futures and strategize about how to communicate them to the public with *HEcMemes* (FCSMemes) one tool to jumpstart and facilitate this process.

Author Biography

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Sue L. T. McGregor (PhD, IPHE, Professor Emerita MSVU) is an active independent researcher and scholar in the areas of home economics philosophy, leadership, and education; consumer studies; transdisciplinarity; and research paradigms and methodologies. She recently published Understanding and Evaluating Research (SAGE, 2018). Her scholarship is at her professional website: http://www.consultmcgregor.com

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A Caring Professional Continuum: Home Economics Working Through Families

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Abstract

This think-piece paper tenders a new construct for home economics called the caring professional continuum*, which is grounded in the education, prevention, and development approach to practice along with working* through *families to enhance the human condition. It originated from a 2021 email exchange between the authors arising from a response to a Facebook query* "Why do you think that Home Economists are sometimes given the label 'caring professionals'?" *Building blocks to the think-piece also include a caring profession, and a helping versus caring professional (trust, empathy, humanistic, and human values). The paper is book ended with a practice addendum recounting Maltese pre-professional home economists' engagement with these ideas.*

KEYWORDS: HOME ECONOMICS; CARING PROFESSION; CARING PROFESSIONAL CONTINUUM; EDUCATION, PREVENTION, AND DEVELOPMENT; WORKING THROUGH FAMILIES

Introduction

In winter 2021, Suzanne Piscopo (Malta) posted a call to home economists on Facebook via HEiA (Home Economists in Action) wherein she asked practitioners "Why do you think that Home Economists are sometimes given the label 'caring professionals'?" (see Figure 1).
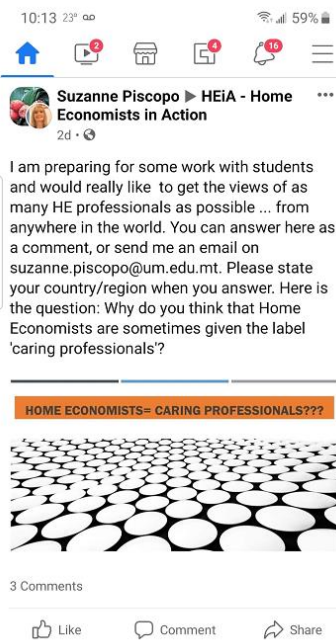

Figure 1   HEIA Facebook Query

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I emailed her the following comment from Canada:

> I don't think others label us this way. We gave ourselves this label. If you ask any hard-core home economist why she became one, she will likely tell you she 'wanted to help people.' But we do not 'take care' of people; rather, we 'have a care' for them. Respectively, this means that we do not assume responsibility for them; rather, home economists value families and individuals and think they are important. We have a concern for their well-being and welfare (personal communication, Sue L. T. McGregor, February 13, 2021).

Suzanne subsequently emailed me this response and query:

> Yes—We do not 'take care of' people directly, but we care for people through the guidance and education we give or the research we do to inform policy or programmes. This is an interesting discussion. Where does education for prevention lie on a continuum of care? Do you feel like writing a paper together about this? (personal communication, Suzanne Piscopo, February 13, 2021).

This think-piece emerged from this exchange as a way to explore the idea of "What constitutes a home economics caring professional?" Think-piece papers are deemed "legitimate and important forms of [scholarly] discourse" (Kennedy, 2007, p. 139). They serve as valid "tools for contributing to the cumulative improvement of theoretical knowledge" (McGregor, 2018, p. 470). They reflect conceptually advanced but still evolving views on a topic. Think-piece authors hope to challenge current thinking leading to provocative dialogue and discourse that prompt intellectual innovations and augment best and next practice (McGregor, 2018).

Caring Professional

The phrase *caring professional* comprises two constructs—care and professional. Each is discussed before distinguishing between a helping and a caring professional. This discourse paves the way for introducing the topic of this think-piece—a caring professional continuum per Suzanne's query "Where does education for prevention lie on a continuum of care?"

Care

Care is Old English *caru*, "concern, serious mental attention" (Harper, n.d.-a). At issue herein is whether one is caring *for* or *about* someone. The choice of proposition matters. *For* refers to in favour of, working on behalf of, or to benefit someone. *About* refers to being the subject of concern (Anderson, 2014). If someone is in a caring relationship (i.e., care for), they manage a connection between *the carer* and *the cared for* where the former is responsible for the latter. They directly provide (or arrange the provision of) what is necessary for *the cared for*'s protection, development, and welfare. This relationship depends on trust and monitoring the impact of one's efforts (Noddings, 1996).

Some home economists may be in personal, caring relationships with loved ones wherein they take care of them. But, as professionals, if home economists have a care *about* someone, they are concerned about them but not directly responsible *for* them. Having a care about someone means valuing them and thinking they are important. They matter. It means having a concern for their well-being and welfare (Frank, 2018; van Roon, n.d.).

Professional

Profession is Latin *professionem*, "a solemn, public declaration in response to a calling" (Harper, n.d.-d). A calling is "a strong urge toward a particular way of life or career; a vocation" (Oxford University Press, n.d.). A vocation is a strong feeling of suitability for a particular career, occupation, or profession (Anderson, 2014). A profession (like home economics) has distinct characteristics compared to an occupation. A profession requires people to attain university accreditation in a complex and unique body of knowledge that it calls its own. It has a monopoly on this knowledge base, which is a systematic body of principles, theories, concepts, constructs, and competencies derived from evidence-based scholarship and practice. Having mastered this body of knowledge, a profession holds an esteemed position in society and is entitled to a voice in public affairs (e.g.,

policy and issues related to the good of society and humanity) (Brown, 1965; Brown & Paolucci, 1979; McGregor, 2005).

Compared to amateurs (non-professionals), professionals are motivated by a deep sense of responsibility *to* society and humanity, but they are not responsible *for* them. This social end serves as a beacon and guide. Professionals appreciate that they must adhere to enforced standards of practice and often codes of conduct or ethics. Self-interest takes a back seat to familial and societal (humanity's) interests. Professionals always maintain their integrity knowing they will be held accountable otherwise. Accepting that the public deserves and expects high levels of expertise, professionals engage in lifelong learning to remain relevant, current, and legitimate (Chatelain, 2004; De Marco, 1997; Houle, 1980; McGregor, 2005; Stratton & Mitstifer, 2003a, 2003b).

In short, a *professional* is someone who has an impressive competence in a particular activity, discipline, or career path to which they have been called (Anderson, 2014). The home economics professional's "primary orientation is on the realities of living [and] the well-being of [individuals and] families" (Spitze, 1966, pp. 62, 63). The home economics profession provides services intended to benefit people in their daily lives and "provides benefits for mankind [sic]" (Kieren et al., 1984, p. 118). Home economics professionals fully appreciate that people face "problems which may not have a solution in their lifetime" (Kieren et al., 1984, p. 118), yet they fully accept the broad principle of social responsibility for humanizing society over generations (East, 1979; Kieren et al., 1984).

Helping versus Caring Professional

This section distinguishes between a helping and a caring professional asserting that they are related but different.

Helping professional

Kieren et al. (1984) characterized home economics as a helping profession. *Help* is Old English *helpe*, "assistance, succour in times of hardship and distress" (Harper, n.d.-c). Helping someone makes it easier for that person to do something. It can also improve a situation or problem (Anderson, 2014). Kieren et al. (1984) envisioned home economists as "professionals dedicated to the betterment of the human condition [which requires] a helping component" (p. ix).

In 1993, the American Association of Family and Consumer Sciences (AAFCS) acknowledged that "the profession takes leadership in … enhancing the human condition" (p. 1). In 2010, McGregor continued along this trajectory, explaining that "humanity's present condition … reflects the totality of the actions humans have taken to date leading to humanity's current state of existence" (p. 14). The present-day human condition is dually characterized by (a) suffering, war, oppression, poverty, ignorance, and disconnectedness and (b) hope, passion, respect, forgiveness, love, care, and stewardship (McGregor, 2010).

In addition to bettering the human condition, home economists "are also concerned with helping to humanize society" (Kieren et al., 1984, p. 118). *Humanizing* means making life more understandable and easier to relate to and appreciate (Vocabulary.com, n.d.). In that spirit, after conceptualizing home economists as helpers and individuals and families as helpees, Kieren et al. (1984) tendered a detailed discussion of *the helping process* (Chapter 4). They further asserted that home economists can best serve individuals and families by *helping* them *problem solve* rather than simply providing them with specific problem solutions. Problem solving using this helping process would entail mutual responsibility for thinking through, clarifying, questioning, and supporting any problem-solving actions undertaken (Kieren et al., 1984).

Caring professional

In subtle contrast, caring professionals care about people (i.e., are concerned about, interested in, and pay attention to) with *one* possible supportive action being helping them with a task or improving their situation. Respecting the etymological root of the word *profession* (Harper, n.d.-d), Noddings (1996) professed that *caring professionals* are *called* to their work. To wit—home economics *is* a calling.

Trust

Noddings (1996) posited that this calling as a caring professional depends on trust (i.e., the firm belief in the reliability, truth, ability, or strength of something or someone). She said that caring professionals would know that an atmosphere of trust better ensures that educating and helping others, learning from that process, even life itself, all fare better. Building, encouraging, and nurturing this trust entails dialogue with people about both routine issues and larger questions about *the good life* or lack thereof. Caring professionals would encourage people to always "ask how, why, and on what grounds" (Noddings, 1996, p. 171) rather than defer and acquiesce to an expert.

Empathy

Caring professionals would also be able to connect with people in an empathetic and dynamic manner that embraces a humanistic approach (van der Westhuizen et al., 2020). Let's unpack this assertion. If home economists can empathize, they can understand how someone else is feeling from the latter's frame of reference. With that understanding and shared feeling, home economists can appreciate that many factors enter into decision making, and that people under duress often struggle with rational and logical decisions—people can benefit from another perspective (Bellet & Maloney, 1991; Dietrich, 2010), in this case the home economists' perspective.

Empathy differs from sympathy with the latter involving feelings of pity and sorrow for someone else's misfortunes (Bellet & Maloney, 1991; Dietrich, 2010). Sympathy is basically cognitive in nature with people distancing themselves from the person in distress, while empathy is emotive and involves an emotional connection between people (Miller, 2021). Empathy comprises three parts. (a) Cognitive empathy involves imagining oneself in another's position and what it must be like. (b) Emotive empathy entails standing together (shoulder to shoulder) with the other person and feeling what they are experiencing. It is almost as if one catches the other's emotions (i.e., emotional contagion). (c) Empathic action (i.e., an empathic presence) involves "actually sitting in silence, not doing anything. [Instead of saying] 'Don't just stand there, do something' [empathetic people would say] 'Don't just do something, stand there'" (Miller, 2021, para. 8). As a caution, if people stop at cognitive empathy, they can readily slip into sympathy (Miller, 2021).

Humanistic

A humanistic approach "emphasizes the personal worth of the individual, the centrality of human values, and the creative, active nature of human beings. The approach is optimistic and focuses on the noble human capacity to overcome hardship, pain and despair" (McLeod, 2015, para. 10). It assumes that people are inherently good and have the built-in ability to better themselves, their situation, and the world. Its main assumption is that people have free will. Using their personal agency, people make choices in life that have consequences (McLeod, 2015).

As caring professionals, home economists would hone in on this human ability for people to both assume responsibility for their lives and take responsible action. Home economics embraces "humanistic views" (Farias, 2012, p. 89). As caring professionals, they "are encouraged to acquire critical perceptions about social, economic, cultural, political and environmental phenomena which affect individuals, families" (Farias, 2012, p. 89). To help people kick start their personal agency (McLeod, 2015), home economists "ought to identify problems, potentialities and interests and motivate sustainable actions which … promote improvement in life-quality of families" (Farias, 2012, p. 89). A humanistic vision of home economics practice "would emphasize the dignity and worth of human beings, empowering them to be competent, self-respecting, autonomous people exhibiting efficaciousness in the face of [adversity]" (McGregor, 2019a, p. 45).

Human values

Regarding the humanistic approach and human values (McLeod, 2015), Nolen and Clawson (1992), speaking for home economists, believed that "values form the vital core of humankind's existence. [They are not] merely statements of preference" (p. 6). Rather, values underpin the bases for human action. A profession concerned with delivering "dynamic human service which can benefit individuals and families" (Kieren et al., 1984, p. 120) must respect the role of human values. These are enduring normative (should, ought to) beliefs that guide human actions including how to behave, what attitudes to hold, and which mental processes to employ (Racko, 2019). Human values "serve the

interests of society and guide the selection, evaluation and justification of human actions" (Racko, 2019, p. 35).

Also speaking for home economists, Bubolz (1979) "believe[d] that the conditions of human existence can provide a starting base for a valid source of values regarding the kind of social character and society desired" (p. 181). She further believed that home economics starts both from the problems humans are experiencing everyday in their home and family life and the value systems and valued ends that they bring to the table. Valued ends are desired outcomes or states of affair that are in the interest of humans and larger society (rather than self-interest). They are mutually determined with individuals and families instead of by home economists in isolation and then given to people (called given ends) (Brown, 1980; Brown & Paolucci, 1979; McGregor & Gentzler, 2009).

Caring Professional Continuum

Suzanne had posed the question "Where does education for prevention lie on a continuum of care?" This query prompted us to explore the notion of a continuum, which is Latin *continuus*, "uninterrupted" (Harper, n.d.-b). Anderson (2014) defined it as a continuous (uninterrupted) sequence in which adjacent elements are not noticeably different from each other, but the extremes are quite distinct. Merriam-Webster's dictionary similarly explained that a *continuum* is a coherent whole comprising a collection, sequence, or progression of elements that vary by very small degrees (Merriam-Webster, n.d.). There are two distinct polar ends with something in the middle. An example would be someone's motives for volunteering lying somewhere between feel-good/self-serving and altruistic.

In the medical field, a continuum of care pertains to a full range of services that can be tailored to patients' current, evolving, and future needs. A comprehensive, integrated, and coordinated continuum of care is assumed to be better than a fragmented, ad hoc (for this specific purpose) approach. The continuum of care concept connotes the principle of continuity or uninterrupted service as things progress or evolve. Discontinuity (i.e., interruptions, gaps, or intervals in service) can be detrimental to people's well-being, quality of life, and their development. An imbalanced service level is also damaging in that insufficient attention is given to balancing aspects of service and practice relative to what people need (Bickman, 1996; Evashwick, 1989; Kerber et al., 2007).

Education, Prevention, and Development

Although difficult to attribute to any one person in the profession, we posit that home economics inadvertently developed its own caring professional continuum. It constitutes education, prevention, and development instead of a therapeutic approach that involves facts and information, intervention, redress, and remedial measures to mitigate a crisis or maintain the status quo (akin to social work's approach) (Arcus & Thomas, 1993; Kieren et al., 1984; Tummala, 1995).

Education

First, education is any process, formal or informal, which shapes people's potential as they mature by providing intellectual, moral, and social instruction. Ideally, this education will help people find their own power (empowerment) to apply new information, insights, and knowledge to help themselves. This self-help involves reasoned and justifiable actions (Arcus & Thomas, 1993; Piscopo & Mugliett, 2012; Tummala, 1995). Home economists focus heavily on education for living (Kieren et al., 1984; Tummala, 1995). They ardently believe that knowledge is power. With education, people can gain the ability to make informed, responsible life choices for the good of themselves and humanity (Tummala, 1995). They would learn how "to think in terms of 'forever'" (Piscopo & Mugliett, 2012, p. 229).

Prevention

Second, by forestalling crises and the need for coping actions, prevention hinders, impedes, and prohibits an undesirable event or situation (state of affairs) from occurring in the first place or from progressing to the point of an emergency (Tummala, 1995). Prevention helps people carve out a space to engage in enriching relationships, personal reflection, a critical analysis of society, and social change instead of perpetually putting out fires. With sensitization to environmental factors impacting individuals and family's well-being, needs, and functioning, home economists can "identify and

prevent potential risk factors which might increase the vulnerability of people" (Tummala, 1995, p. 63).

Development

Third, development refers to steady improvement and progression from a simple to a more complex state as opposed to stagnation, regression, and stymied growth (Anderson, 2014). A development approach to home economics practice involves a focus on evolution and progress and improving the range and critique of choices available for people (Arcus & Thomas, 1993; Tummala, 1995). Tummala (1995) expanded development by adding that home economists must be aware of and influence national and social developmental activities and policies that impact people's lives. McGregor (2019b) concurred, making a strong case for home economics' role in national development plans.

In short, home economists as caring professionals would (a) ensure the acquisition of skills and modes of thinking that contribute to healthy homes, societies, and the human condition (education); (b) instill a preventive approach to daily living; and (c) identify and respect a myriad of life choices informed by reason leading to human growth and improvement (development) (see Tummala, 1995). Respecting the definition of a continuum, the polar opposites of this caring professional continuum could be (a) integrated, comprehensive (whole), coordinated service versus (b) fragmented, incomplete (fractional), ad hoc service. Degrees of education, prevention, and development would be employed along different points of the continuum (see Figure 2). The principle of balanced service involving varying degrees of education, prevention, and development would be paramount.
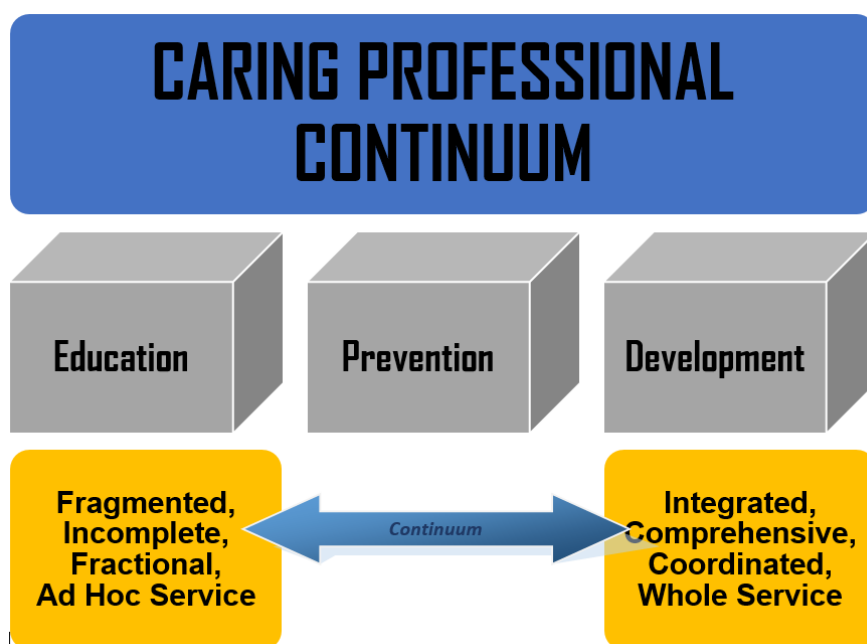

Figure 2   Caring Professional Continuum

Working *Through* Families

Per the tenets of a think-piece, as food for thought, we posit that home economists employing a caring professional continuum (see Figure 2) would *shape the human condition* by ensuring resilient, resourceful, and autonomous individuals and families. This is a larger call to action than optimizing individuals and families' well-being. We embrace East's (1979) radical suggestion that home and family are but a means to an end by which home economists nurture human development for the good of humanity. East (1979) referred to the home as a matrix, which is an environment in which something develops (Anderson, 2014). For East (1979), the home (i.e., the means) is the "molding force" (p. 141) for shaping human development. Regarding the ends, "the ultimate goal is to make life successfully better for each following generation" (p. 141) by working *through* the home for the good of humankind.

This framing is radical in that it departs from tradition or accepted mainstream wisdom about how home economists view individuals and families. For over a century, we have expressed the mantra—*our mission is to optimize individuals and families' well-being and quality of life*. But we have normally assumed that the latter are the reason we do our work—the valued end. Framing individuals and families as a *means to an end* poses the risk of narrowly construing them as a tool to be manipulated. A means to an end is a thing that is not valued or important in itself but is useful in achieving an aim (Anderson, 2014). Fortunately, this is not what East (1979) meant. Rather, she and others view families as a key social institution that must be supported and strengthened with home economics being *especially* adept at this task (Brown & Paolucci, 1979; McGregor, 2009; Piscopo & Mugliett, 2012; Tatano, 2014).

"In effect, [East] proposed that home economics does its work *through* home and family" (McGregor, 2019c, p. 11). Home and family become the means to a highly altruistic end—an improved human condition. By association, home economics would be "focused on the home in order to improve humanity" (East, 1979, p. 141). Home economists would help families and individuals within the home environment become human agents—home economists work *through* them to improve the human condition. Brown and Paolucci (1979) called families "an agent of transformation [and concurred that home economists must help families] regain control of [morality, political action, economics, and social actions] to direct them toward the common good" (p. 35). The nature of home economics services is thus shaped by "insights from critical reflection about human needs and the human condition" (Brown & Paolucci, 1979, p. 23).

Embracing this radical approach would entail a four-pronged strategy. Home economists would "think rationally with power, richness, and clarity" (East, 1979, p. 141). First, this means applying rational thought to their work through the home. Second, from a power perspective, they would become comfortable with ambiguities (i.e., be skeptical and evaluative), perceive connections and relationships, and seek alternatives using intellectual prowess. Third, richness in practice would come from compassion, empathy, sensitivities, and awareness. Fourth, clarity would arise from posing philosophical questions about the meaning of life (East, 1979). In an interesting twist, Piscopo and Mugliett (2012) actually framed home economics as "a means to an end [claiming that our role is to] build capacity for individuals and families to realize their potential for better lives" (p. 231).

Home economists so inspired would draw upon their own knowledge and insights and integrate them with each individual's and family's network and lived experiences (Piscopo & Mugliett, 2012). These experiences accrue as people learn to cope with change, adapt to change, and engage in social action to effect change that makes the human condition better for everyone (Arcus & Thomas, 1993; Brown & Paolucci, 1979; Kieren et al., 1984). This is called the system of three actions approach with action meaning a way to *think* about something before acting: technical (instrumental), interpretive (communicative), and critical (emancipatory) action. Home economists are tasked with determining what combination of these three actions is best for the current dilemma (Brown & Paolucci, 1979; McGregor, 2007).

Conclusions

If, as Suzanne suggested, home economists are educating for prevention on a continuum of care, what would they be trying to prevent or keep from happening? What would they hope to develop and educate about? We propose that the answer is *anything* that would compromise people's well-being, welfare, wellness, and quality of everyday life in ways that threaten the human condition, the common good, and humanizing society. It would be *anything* that threatens or undermines the influence and role of families as a primary social institution as it pertains to bettering the human condition—humanity's current state of being.

As caring professionals, home economists would educate people about how to both (a) protect and enhance these aspects of their everyday life and (b) develop and mature as responsible humans. Home economists would do this because they *have a care* about humanity as it is lived out *through* the home and family. By way of affirmation, in her recent keynote address at the Caribbean home economics conference, O'Neil (2021) asserted that "we build the world through our homes [with] home economists acting as a stabilizing force in the world." We offer this think-piece as a way to stimulate the profession's thinking about a caring professional continuum (education, prevention, and development) focused on bettering the human condition by working through home and family.

Practice Addendum

To illustrate our extended thinking about the merit of a caring professional continuum and a discourse around caring *for* or caring *about*, Suzanne prepared a practice addendum. An addendum is an extra item added at the end of a text that serves to clarify and extend (maybe amend or nullify) the ideas contained in the original document. In all cases, the addendum becomes a binding part of the original text (Kagan, 2020). We created the neologism *practice addendum* as way to frame accounts of real-life engagement with new ideas, in this case a caring professional continuum predicated on caring *for* or caring *about* as experienced by Maltese preprofessional home economists. We hope you find the attached practice addendum meaningful and inspiring and that it triggers provocative thinking—the intent of a think-piece.

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Sue L. T. McGregor (PhD, IPHE, Professor Emerita MSVU) is an active independent researcher and scholar in the areas of home economics philosophy, leadership and education; consumer studies; transdisciplinarity; and research paradigms and methodologies. She recently published Understanding and Evaluating Research (SAGE, 2018). Her scholarship is at her professional website: http://www.consultmcgregor.com

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A Narrative from Malta

Suzanne Piscopo

The University of Malta's (UM) BSc (Hons) Home Economics (HE) course—Home Economists as Caring Professionals—was taught for the first time February to May 2021. As I was planning the course in January-February 2021, I was bound by the course description that had been developed close to three years earlier as per UM regulations (see Box 1).

Box 1   Home Economists as Caring Professionals—Study Unit Aims

> This study unit aims to extend the students' understanding of the role of Home Economists as caring professionals who work to promote the wellbeing of individuals at different stages of the lifecycle, of different ability and of different life circumstances. With a special focus on vulnerable individuals and families, it helps sensitise students to the various needs of these households and describes the work of state and non-state agencies and organisations in offering services and incentives to enhance their quality of life. The study unit also outlines basic principles for working effectively and ethically with vulnerable individuals and families.

Source: https://www.um.edu.mt/courses/studyunit/HPN3019

Three years ago, I had already envisaged this course as having a reflective and applied orientation, wherein final-year students would be able to consolidate their understandings about HE as a caring profession. However, as I developed the actual framework, structure, and sessions for the course this year, I felt a need to move away from my own preconceptions and explore instead what other seasoned or recently qualified Home Economists felt about this concept. To that end, my mid-February 2021 informal survey via three Facebook pages yielded responses from Home Economists engaged in different positions and hailing from different countries (International Federation of Home Economics [IFHE], Home Economists in Action [HEiA], and Teachers of Home Economics). Figure 1 showcases the main themes that emerged in response to the question on Home Economists as caring professionals.
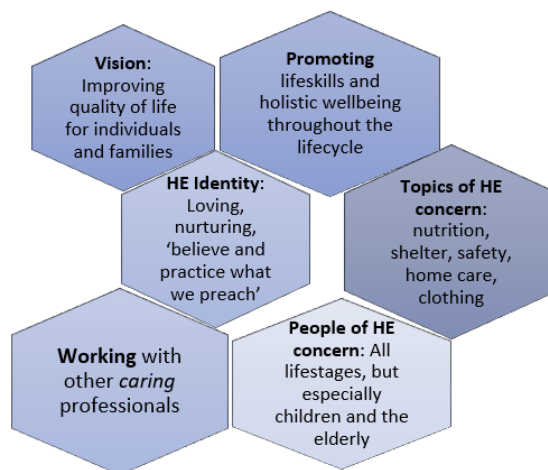

Figure 1   Key Emergent Themes from Social Media Survey February 12-18, 2021

From this set of responses, and Sue McGregor's critical-reflective reply to my HEiA social media post (personal communication, February 13, 2021), I set forth with a slightly revised vision for the course that (a) not only informed the orientation I had originally taken but also (b) spurred me to allow for a certain flexibility so that students' reactions, as the initial lectures were delivered, could further help mould the course content as it unfolded.

In the first lecture, students were given space to share their own perceptions of *care* in general. With respect to defining care, they focused mainly on helping and supporting others and keeping them safe. The *others* were both people in general and the elderly and people with disabilities. According to the students, *care* was shown by both giving something tangible, such as food, and exhibiting more intangible behaviours. Examples included listening, making yourself available, paying attention, asking about feelings or needs, and showing affection. They said that care was provided by various professionals including home help carers, nurses, therapists, and social workers. Listed separately were educators/teachers and then family members and friends.

This first discussion illustrated both the students' strong focus on (a) professional care services and (b) the socio-emotional aspect of wellbeing that can be provided by different people in one's life. At the end of the first Lecture, students were left with a teaser to ponder for the next lecture prompted by Sue McGregor's and my email exchange of opinions. I asked "What is your thinking on 'caring for' as opposed to 'caring about'?" I reminded them that since its origins as a profession, HE has shown a global concern with home, family, and community life and has strived to *serve* families (i.e., to contribute to their well-being and help them meet their needs).

In the second lecture, I asked students what aspects of care they associated with HE (see Table 1). Their focus was squarely on the applied aspect—the knowledge and skills they had that could help individuals and families have a better-quality life. The knowledge they referred to included primarily nutrition and healthy diets, followed closely by safety, hygiene, and protection of the general environment. Of note is the immediate identification of themselves as individuals able to pass on skills related to choosing healthy foods, meal planning, and cooking. Then there were aspects of self-care and care of the home with an interesting extension to protection of the natural environment. These comments indicated that their perception of care was no longer being limited to actions that impacted inside the home but extended to those impacting outside the home. Finally, there was a strong reference to "happy" relationships. When asked to elaborate, students described relationships that facilitated democratic decision making, exhibited a harmonious atmosphere in the home, and were rich with physical and emotional demonstration of affection.

Table 1   Aspects of Care That Students Associated With Home Economics

Aspect of Care	How many chose this? (*N* = 10)
Nutritious food and diet	7
Safety	5
Cleanliness and hygiene	5
Protecting the natural environment	5
Happy relationships	4
Reducing disease risk	2
Designing aesthetically pleasing homes	0

I utilised this discussion to provoke them to think about what was missing in the list (Table 1) that could aid individuals and families to improve their quality of life and promote holistic wellbeing. Upon reflection, students further added topics such as budgeting one's or the household's income; designing functional, efficient, and comfortable spaces; planning for and buying a useful and pleasing wardrobe; and caring for clothes, linens, and soft furnishings. This exercise led to a discussion about "Who would benefit the most from the knowledge and skills that Home Economists could provide?" At this juncture, I also had them express themselves on both *caring for* and *caring about* and did so by bringing in the ideas of (a) humans as part of the ecosystem and (b) how, whilst working to improve the human condition inside the home, or as part of everyday living practices, Home Economists also work to improve the human condition outside the home.

This broader focus inevitably led me to borrow Sue McGregor's (2010) *prevention, education and development* triad and encourage the students to place Home Economists' caring role in such a framework (see Figure 2). I also reminded them of a fundamental approach to practice adopted within Home Economics: the system of actions approach whereby Home Economists identify and

utilise judiciously integrated technical, interpretive, and critical actions (i.e., ways of thinking) to improve the human condition on an individual, family, and community level. To this end, I quoted Sue McGregor explaining that "we approach people experiencing problems and work with them to determine which combination of coping, adapting, and affecting change is appropriate for them given their current situation and future inclinations and possibilities" (2010, p. 29).

Figure 2   Education, Prevention, and Development (adapted from McGregor, 2010)

Home Economists work with families to:
EDUCATE   Ensure the acquisition of skills and modes of thinking essential for functioning in society
PREVENT   Instil a preventative approach to living day-to-day forestalling and thwarting undesirable events
DEVELOP   Focus on human development and evolution and improvement of the range and critique of choices available for everyday life

By this time, it was evident that the students were ready to expand their perspective on *care* and see their broader role in human development; in particular, they were expressing an interest in how caring for and caring about are very much linked to a number of the United Nations' Sustainable Development Goals (SDGs) (https://sdgs.un.org/goals). They were also ready to consider their potential role locally where their knowledge and skills could be utilised in different settings and scenarios. At the same time, I urged them to realise that addressing and solving the complex problems of everyday living requires a better understanding of their own self and what they could and should (not) bring to discussions on solutions when working with individuals and families. I also highlighted the frequent need to work with other professionals and practitioners so that designed solutions could be the best possible to meet needs articulated by individuals, families, and communities.

To this end, I sought to enrich the their stance on Home Economists as caring professionals through facilitating introspective reflection and analysis and exposing them to various realities of individuals and families in contemporary Maltese society. As stated earlier, the concept of working with people to prevent problems was something they were fairly familiar with, but it needed qualification and grounding. With this in mind, I tried to integrate several aspects of professional practice into the course from then on:

a) the value of going more deeply into the causes of problems
b) the recognition of their own values and how these inform perceptions, judgements, and priorities when it comes to listening to, addressing and working with others
c) the sensitivity to people's needs, fears, doubts, and actions
d) the empathic stance
e) the purpose and quality of care *services*, and
f) the need for working in multidisciplinary and interdisciplinary teams.

I achieved this *digging deeper* primarily by inviting a variety of guest speakers to (a) strengthen the students' theoretical understanding and self-identification and (b) help them see the application of frameworks and principles to case studies. Guest speakers included academics (e.g., sociologists, psychologists) and practitioners (e.g., social workers, community outreach workers). Given the upsurged focus in Malta on vulnerable groups, I purposefully included guest speakers who could talk about people suffering poverty, substance abusers, landed immigrants, people with various disabilities, and the different state and non-governmental organisation-run programs that foster self-esteem, personal development, and social inclusion. During and after each guest lecture, the students were challenged to reflect on how what they had heard influenced their perceptions of, attitudes toward, and possible future actions as Home Economists.

In the final lecture, students discussed any personal change they had experienced from the first lecture to the last with respect to their perceptions of nine *care*-related themes that emerged from the different foci of the invited speakers: values, sensitivity, empowerment, physical needs, social and emotional needs, poverty, communication, collaboration, and *care* services. Their responses showed evidence of both their personal and professional growth and their appreciation of how their knowledge and skills as future professional Home Economists could be harnessed to benefit others. I ended the class with a quote from Hall et al. (2019) on how "engaging with everyday life requires

interdisciplinary knowledge to resolve the many complex problems that we encounter on a daily basis. It requires both a pragmatic and integrative approach" (p. 13).

I used this last-class discussion of care-related themes and this quote as a springboard for the students to come up with their own course-related projects for assessment purposes. Their final proposals as preprofessional Home Economists reflect how their vision of care (*for* and *about*) evolved profoundly during the course (see Figure 3).

Figure 3   **Students' Self-Designed, Care-Oriented Course Assessment Proposals**

Student group 1	A proposal for designing a life-skills course for prisoners coming to the end of their sentence preparing them for re-entry into society
Student group 2	A proposal for organising a *repair café* in a local community bringing together youths and senior citizens for a workshop and sharing of skills
Student group 3	A proposal for a community of *tiny houses,* fashioned around sustainability principles, which can offer low-cost housing (for sale or to rent) for people who
	a) become homeless
	b) require a home till they are more financially secure
	c) wish to downsize, or
	d) want to live in a sustainable manner embracing inclusivity (e.g., environment-friendly, community resource sharing).

This first run of this course has been a journey for both me (as designer, coordinator, and co-lecturer) and the students. The concept of care is continuously evolving. Is it caring *for* or caring *about*? Is it a continuum, or is it a cycle? I would argue that one does not exclude the other; but the certainty is that there *is* scope for Home Economists to play a strong role in the promotion, delivery, and fostering of *care* at different levels of society. I will end with a response from the February 2021 social media survey. It was made by a newly qualified Maltese HE teacher (used with permission). I feel that it encapsulates well the caring identity of Home Economists and augurs well for the future of the profession *if* our young graduates adopt this vision:

> Home Economists are not anthropocentric. The world does not revolve around us. We approach life as collectivists and not as individualists. Being a caring professional is an ingrained attribute in all Home Economists as our mission is to be socially, economically, environmentally, politically, anthropologically and emotionally ethical and sustainable in all aspects of life. We believe in responsible living within communities where people support the growth of one another. And therefore, we have a big purpose in this world! (Yakof Debono, personal communication, February 11, 2021).

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Perceived Stress in Relation to Socioeconomic and Lifestyle Characteristics in Greece: A Cross-Sectional Study

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Abstract

Mental stress is associated with serious negative health outcomes. The aim of this study was to investigate perceived stress levels, in Greek adults, in relation to certain socioeconomic and lifestyle characteristics. This cross-sectional study conducted in the urban area of the Attica region, in Greece. Healthy individuals (N = 1281), aged ≥ 18 years, completed the Perceived Stress Scale-14. Sociodemographic, anthropometric and certain lifestyle characteristics were also assessed. Mann-Whitney U test, chi-square test and multiple linear regression models were used. The sample's perceived stress mean value (SD) was 26.46 (7.27) with women scoring significantly higher than men (p = 0.040). Regression analysis showed that perceived stress was significantly associated with sex (p = 0.027), job status (p = 0.001), annual income (p = 0.031) and physical activity (p < 0.0001). Also, age and education were significantly negatively associated with higher perceived stress (p = 0.014 and p = 0.024, respectively).Perceived stress in this sample of Greek adults is significantly associated with women, younger age, lower socioeconomic status and with a sedentary lifestyle.

KEYWORDS: PERCEIVED STRESS; SOCIOECONOMIC CHARACTERISTICS; LIFESTYLE; GREECE

Introduction

Stress-related disorders are an increasing public health problem globally and they constitute a major cause of ill health and premature death in Europe (WHO, 2011). In addition, an individual's ability to cope with certain stressors can have a serious impact on their psychosomatic health.

More specifically, psychological stress has been associated with the activation of the hypothalamic-pituitary-adrenal axis and the body's inability to regulate inflammatory response and it increases an individual's vulnerability to the ageing process (Lee et al., 2020). Stress can also significantly affect mood, quality of life, sense of well-being (Schneiderman et al., 2005), eating behaviour (Christaki et al., 2013; Costarelli & Patsai, 2012), can trigger depression (Khan & Khan, 2017) and may also lead to negative health behaviors (Slopen et al., 2013).

Perceived stress is defined as "the feelings or thoughts that an individual has about how much stress they are under at a given point in time or over a given time period" (Phillips, 2013, n.p.). It is important to note that perceived stress includes feelings related to the unpredictability of life: dealing with sudden changes, hassles and problems occurring in one's life, and having the ability to cope with these difficulties.

Data on stress and anxiety levels and their determining factors, in the general population in Greece, is relatively scare, in spite the prolonged economic austerity period faced by Greece, which seems to have affected many aspects of health and well-being of the population (Economou, Madianos et al., 2012; Kentikelenis, Karanikolos et al., 2011; Madianos, Economou et al., 2011). In a study conducted by Kokaliari, 2016, 16.3% of the participants reported *severe* or *extremely severe* stress using the Depression Anxiety Stress Scales (DASS) (*n* = 911) (Kokaliari, 2016).

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In an another cross-sectional comparative study conducted in 2013, comparing young adults from the city of Athens in Greece (n = 124) and from the city of Linkoping in Sweden (n = 112), the Greek participants reported significantly higher perceived stress (p < 0.0001), had experienced more serious life events (p = 0.002), lower hope for the future (p < 0.0001), and had significantly more widespread self-reported symptoms of depression (p < 0.0001) and anxiety (p < 0.0001) than the Swedes (Ashild Faresjo et al., 2013).

The current study aims at assessing the prevalence of perceived stress in adults, in the urban area of Attica, Greece and concurrently aims at investigating the potential association between perceived stress and certain sociodemographic and lifestyle factors.

Methods

Ethical approval

The study was approved by the Institutional Ethics Review Board of the Harokopio University. The protocol number was 57 and the date of expedition was 15/09/2017. Participants were informed about the purpose of the study, via a cover letter, prior to consenting to taking part, giving an informed consent.

Study design and sample collection

This cross-sectional study took place in the urban area of the Attica region, in Greece. The areas of recruitment were selected on a feasibility basis among Athens metropolitan greater area municipalities. The recruitment of the sample lasted for six months from October 2017 to April 2018. Power analysis showed that a number of 1083 of participants is adequate to evaluate two-sided differences between subgroups of the study and the investigated parameters greater than 20%, achieving statistical power >0.80 at < 0.05 probability level (*P*-value). The final sample consisted of 1281 individuals (59.4% women). The recruitment of participants was done in a feasibility base in participants' work places or places of residence and from Open Care Centers for the elderly. No random selection was performed. Inclusion criteria concluded: participants of both sexes, ≥18 years of age and the ability to read and write in Greek, with no other exclusion criteria. The participation rate was 85.4%, with 14.6% dropping out.

Material

The questionnaire that was used included questions about sociodemographic and anthropometric characteristics, lifestyle factors and the Greek version of Perceived Stress Scale-14 (PSS-14) which are described below. Participants filled the questionnaire either in a printed (in their place) or in electronic form. The mean time of completion of the questionnaire was about seven minutes.

Sociodemographic characteristics

Sociodemographic characteristics such as sex, age and education in years, job status and annual income were assessed via a specifically designed questionnaire.

Anthropometric data and weight status assessment

The anthropometric characteristics were self-reported (height in meters and weight in kg). Participants' weight status category was calculated as BMI = weight/height^2. The classification of weight status categories was as follows:

- < 18.49 kg/m^2 underweight
- 18.5–24.99 kg/m^2 normal weight
- 25.0–29.99 kg/m^2 overweight, and
- >30.0 kg/m^2 obese.

Lifestyle factors

Lifestyle factors such as smoking, alcohol consumption and physical activity were assessed, via a specifically designed questionnaire with closed ended questions.

Perceived Stress Scale-14 (PSS-14)

The PSS-14 is a self-reported 14-item questionnaire with a 5-point Likert type scale (0 = *never*, 1 = *almost never*, 2 = *sometimes*, 3 = *fairly often*, 4 = *very often*) (Cohen et al., 1983). This measure assesses whether situations experienced by a person during the last month are stressful. The tool includes seven positive and seven negative items and the range of the final score is between 0-56. A higher score indicates higher levels of perceived stress during the past month. Is considered to be a brief and easy tool for completion. The scale has been validated into Greek (Andreou et al., 2011; Katsarou et al., 2012).

Statistical Analysis

Data are presented as *N* (%) for categorical variables (i.e., sex, job status, etc.) and as mean (SD) and median (IQR) for continuous variables (i.e., age and education in years and PSS scores). Due to the skewed distribution of the continuous variables (i.e., age and parental feeding practices scores) the Mann-Whitney, non-parametric test was used to evaluate differences between sexes. Also the Pearson chi-square test was used to evaluate differences between sexes and the categorical variables. Then, multiple linear regression analysis was also employed to evaluate whether perceived stress levels (dependent variable) were associated with sociodemographic and anthropometric characteristics and lifestyle factors (independent determinants). The inclusion of the independent variables was based on literature review made and the tested research hypothesis of the present study. Multicolinearity was evaluated using the Variance Inflation Factor (VIF; variables with value > 4 were not included at the same time in the model). The STATA software, version 14 (MP & Associates, Sparta, Greece) was used for all statistical analyses.

Results

Participants' descriptive and anthropometric characteristics, lifestyle factors and perceived stress scores are presented in Table 1. In total, 1281 individuals (59.4% women vs 40.6% men) participated in the study. Their mean age (*SD*) was 44.52 (17.44). Women were younger (*p* < 0.0001) and more educated (*p* = 0.002) than men. Also, more women had low annual income (52.5%) in comparison to men (42.1%), while more men had medium annual income (49.7%) in comparison to women (41.3%) (*p* = 0.008). According to their weight status, more women were classified in the normal weight category (61.5%), contrary to men where most of them were classified in the overweight category (45.9%) (*p* < 0.0001). As for their lifestyle, less women were smoking and consuming alcohol (*p* = 0.0002 and *p* < 0.0001, respectively). According to the perceived stress levels, women scored higher than men (*p* = 0.040) and the total sample's mean (*SD*), min and max values were 26.46 (7.27), 4 and 47 respectively.

Table 2 presents the results of a linear regression analysis when considering descriptive, anthropometric characteristics and lifestyle factors, as potential significant factors for perceived stress levels. In the model where sex, age, education, job status, annual income, weight status, smoking, alcohol, consumption and physical activity were included, the results showed that:

   i.   sex was significantly associated with perceived stress levels, with male scoring -0.999 points (*p* = 0.027) than women

  ii.   age was significantly negatively associated with higher levels of perceived stress with -0.037 points (*p* = 0.014)

 iii.   education was significantly negatively associated with higher levels of perceived stress with -0.311 points (*p* = 0.024)

  iv.   job status was significantly associated with perceived stress levels, with unskilled scoring 1.681 points (*p* = 0.001) than skilled,

   v.   annual income was significantly associated with perceived stress levels, with those with low income scoring 1.086 points (*p* = 0.031) than those with high income, and

  vi.   physical activity was significantly associated with perceived stress levels, with those who were physically active scoring -2.513 points (*p* < 0.0001) than those who were physically inactive.

Table 1 Sample's Descriptive Characteristics for Men and Women

Category	Sub-category	Men n	Men %	Women n	Women %	p	Total N	Total %
Participants		520	40.6	760	59.4		1281	100
Age	Mean (SD)	46.9	17.7	42.9	17.1	< 0.0001	44.5	17.4
	Median (IQR)	43.0	24.8	39.0	28.0		41.0	24.0
Education in years	Mean (SD)	6.9	1.9	7.1	2.0	0.002	7.0	2.0
	Median (IQR)	7.0	2.0	8.0	2.0		8.0	2.0
Job status	Skilled	249	49.1	383	52.4	< 0.0001	632	51.0
	Semi-Skilled*	164	32.3	112	15.3		277	22.4
	Unskilled*	94	18.5	236	32.3		330	26.6
Annual income	Low*	155	42.1	288	52.5	0.008	443	48.3
	Medium*	183	49.7	227	41.3		411	44.8
	High	30	8.2	34	6.2		64	7.0
Weight status category	Underweight*	4	0.8	18	2.4		22	1.7
	Normal Weight*	175	33.9	463	61.5	< 0.0001	639	50.3
	Overweight*	237	45.9	197	26.2		434	34.2
	Obese*	100	19.4	75	10.0		175	13.8
Smoking	Yes	173	33.5	219	29.1		392	30.9
	No*	252	48.8	439	58.4	0.002	692	54.5
	Ex-smoker*	91	17.6	94	12.5		185	14.6
Alcohol consumption	Yes*	380	73.1	397	52.7	< 0.0001	777	60.9
	No*	140	26.9	357	47.3		498	39.1
Physical activity	Yes	304	58.8	471	62.1	0.254	776	60.8
	No	213	41.2	287	37.9		500	39.2
PSS	Mean (SD)	25.8	7.3	26.9	7.3	0.04	26.5	7.3
	Median (IQR)	27.0	9.0	27.0	10.0		26.5	19.0

Note: $p < 0.005$, Mann-Whitney, x^2, * shows categories hold a significance difference according to sex

Table 2 Results (b, SE) From Regression Analysis Models That Evaluated Determinants of Perceived Stress

Category	Sub-category	b ± SE	p
Sex	(Men/Women)	-0.999 ± 0.453	0.027
Age in years		-0.037 ± 0.015	0.014
Education in years		-0.311 ± 0.138	0.024
Job (Reference: Skilled)	Semi-Skilled	0.818 ± 0.542	0.131
	Unskilled	1.681 ± 0.528	0.001
Annual Income (Reference: High)	Low	1.086 ± 0.528	0.031
	Medium	0.92 ± 0.509	0.071
Weight status Category (Reference: Normal Weight)	Underweight	-2.763 ± 1.544	0.074
	Overweight	-0.173 ± 0.477	0.717
	Obese	0.832 ± 0.66	0.208
Smoking (Reference: Smokers)	Non Smokers	-0.349 ± 0.466	0.454
	Ex-Smokers	-0.001 ± 0.658	0.999
Alcohol Consumption	(Yes/No)	-0.418 ± 0.442	0.345
Physical Activity	(Yes/No)	-2.513 ± 0.428	<0.0001

Discussion

The current study was set out to investigate the prevalence of perceived stress in Greek adults, in relation to selected sociodemographic and lifestyle characteristics. Perceived stress levels in the current study (mean score, *SD*), were slightly higher in comparison to a relatively small number of similar studies, conducted in the past, in Greece (Andreou et al., 2011; Katsarou et al., 2012; Kokaliari, 2016). It is highly likely that the prolonged economic austerity period in Greece, which seems to have affected levels of health and well-being of the population, is one of the reasons, of the relatively higher levels of perceived stress levels, reported in this study.

With respect to sex, in the current study women reported significantly higher levels of perceived stress, which is in accordance to the findings of other studies conducted in Greece (Andreou et al., 2011; Katsarou et al., 2012) and worldwide (Allen et al., 2011; Worly et al., 2019). It is interesting to note that in a recent study by Kokaliari (2016), Greek women reported statistically scientifically lower levels of quality of life together with higher levels of anxiety, in comparison to men (Kokaliari, 2016). It is well documented that usually women report higher levels of perceived stress than men, which could partially be attributed to their different roles in family life and work (Xu et al., 2015). There is also evidence that women and men are at risk for different types of stress-related disorders, with women being at greater risk for depression and anxiety and men being at greater risk for alcohol-use disorders (Kajantie & Phillips, 2006; Kessler et al., 1993). In a study conducted in the USA, men and women responded differently to stress, with women experiencing greater anxiety and sadness, while men demonstrated a greater integration of reward motivation and emotional stress systems. (Chaplin et al., 2008).

Given the fact that an increasing number of people nowadays live to a very old age and that currently in Greece, about one in four people, is over the age of 65 years (Eurostat, 2021), thoroughly investigating levels of mental stress in the elderly and their determining factors, is of great importance. It is interesting to note that, in spite of the fact that, older people are considered more vulnerable to ill health and mental health problems (de Mendonça Lima & Ivbijaro, 2013; WHO, n.d.), in the current study, older age was associated with significantly lower levels of reported perceived stress. The above finding warrants further investigation; however, it has been supported by similar studies in the past. The study of Vasunilashorn et al., 2014, reported that perceived stress tended to decrease over time (Vasunilashorn et al., 2014). This finding was in accordance to the result that negative affect decreases during late life (Carstensen et al., 2000; Charles et al., 2001; Mroczek & Kolarz, 1998). It is likely that older adults use different and possibly more effective coping mechanisms to different stressors, compared to younger individuals. Usually, younger people prefer to focus on negative stimuli in contrast to older people who are usually focused on positive stimuli (Mather & Carstensen, 2005). Also, older people give emphasis to emotional goals, they prefer positive information in the context of attention and memory (Mather & Carstensen, 2003) and they usually report greater self-control of their emotions (Gross et al., 1997; Lawton et al., 1992). Moreover, older people when they deal with a difficult situation, they are less likely to employ destructive behavioral responses (Birditt & Fingerman, 2005). An interesting study by Commodari & Di Nuovo, 2019, investigated the impact of sociodemographic characteristics and appraisal of the life experiences, on perceived stress in elderly Italians. The results indicated that life appraisal of the elderly participants' influences levels of perceived stress. More specifically, beliefs on aging and quality of life, affected perceived stress, more than other physical and objective variables associated with stress.

In the current study, education was significantly negatively associated with higher levels of perceived stress, together with job status and annual income, which was anticipated. Mental health disorders, such as depression, anxiety, and stress, have been found in the past to be associated with socioeconomic factors, such as unemployment, low level of education, and poverty (Algren et al., 2018; Freeman et al., 2016).

Finally, the most statistically significant finding of the current study, is the strong positive association between lack of physical activity and levels perceived stress. This finding has been supported by previous studies (Algren et al., 2018) and it was anticipated given the fact that regular physical activity is often recommended as a strategy for managing stress and it improves mood (Arent et al., 2000; Edwards, 2006), sense of wellbeing and quality of life (Atlantis et al., 2004).

Perceived stress in the current study is significantly associated with women, younger age, lower socioeconomic status and particularly with a sedentary lifestyle. Considering the detrimental effects of stress and sedentary behavior on psychosomatic health, these results could be useful in the formation of targeted health promotion programs, incorporating physical activity strategies to reduce stress.

Limitations

Limitations include: the cross-sectional design of the study and as a result, a temporal relationship cannot be supported, the instruments used were subjective measures. Also, participants were recruited only from the urban area of the Attica region. In addition, this study did not collect data with variables that may have an explanatory impact on its findings, including personal characteristics, life events, as well as low sense of coherences, poor social network and appraisal of the stressor(s) (Chu et al., 2016; Feizi et al., 2012; Moore & Cooper, 1996; Ozbay et al., 2007).

Conflicts of interest

The authors declare no conflict of interest. All authors have contributed to writing and revision of the article.

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Home Economic Teachers' ICT Use in Finland Seen From a Lens of Reciprocal Determinism

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Abstract

This study aims to investigate Finnish home economic (HE) teachers' use of information and communications technology (ICT) and uses triadic reciprocal causation as a means to enhance understanding of it. The study also aims to provide new insight into how HE teachers should be supported in their use of ICT to enhance student learning. Data were collected through semi-structured interviews with 12 HE teachers in 2019 and further examined through an abductive approach to content analysis. The findings show that HE teachers used ICT in a variety of ways, although they had trouble expressing their goals for its use. The findings further show that HE teachers' use of ICT not only depends on their goals, but also on several influences identified at both environmental and personal level in Bandura's model of triadic reciprocal determinism. Based on these findings, HE teachers need to be given support in settings goals for their ICT use. These goals are important because, in combination with performance feedback, they enable teachers to specify the conditions for successful ICT use. Furthermore, the study shows the need for HE teachers to develop digital skills and to have sufficient ICT infrastructure, on-hand pedagogical and technical support, shared practices, collegial support and follow-up teacher training that focuses on their individual requirements. Based on the results, we found Bandura's model to be useful for enhancing our understanding of the influences related to HE teachers' ICT use and their goals for its use.

KEYWORDS: HOME ECONOMICS; ICT; SECONDARY EDUCATION; RECIPROCAL DETERMINISM

Introduction

The significance of using information and communications technology (ICT) in teaching has been extensively discussed globally over the past decade (OECD, 2019) and studies have expressed many ways in which it can benefit students' learning. In Finland, the potential for students to use ICT for learning has been emphasised in the country's national core curriculum in relation to all school subjects (Finnish National Board of Education, 2014). Despite the marked importance and benefits of using ICT, various academic subjects have responded differently in how they implement ICT as a tool for students to learn (Erixon, 2010; Howard et al., 2015).

In home economics (HE), the integration of ICT in teaching is essential, although doing so remains a challenge (Elorinne et al., 2017; Sundqvist et al., 2020a; Tanhua-Piiroinen et al., 2016). HE is strongly linked to societal development, and the internet and a number of online services form an essential part of household management today (Hölttä, 2014; Poirier et al., 2017). According to the Finnish core curriculum, HE students should "form an understanding of the increasingly technological nature of daily life" (Finnish National Board of Education, 2014). There are several learning objectives in HE that require the use of ICT and development of related competences, especially those concerned with the development of consumer and financial skills. HE is also an important subject for preparing students for mastering complex issues in daily life, and there is no doubt that dealing with these multi-dimensional tasks requires effective skills in communication, collaboration, information-seeking and management, as well as the ability to use technology effectively (Lewin & McNicol, 2015;

Poirier et al., 2017). Teachers have an important role to play in using ICT to support their students' learning (Finnish National Board of Education, 2014; OECD, 2019). Consequently, HE teachers are in a prime position for enhancing their students' achievement of learning objectives related to ICT.

This study is the third part of a Finnish project on ICT use by HE teachers. The first part of the project (Sundqvist et al., 2020a) revealed three dimensions of ICT use among HE teachers and suggests a relationship between teachers' beliefs and ICT use. The second part of the project (Sundqvist et al., 2020b) confirmed a relationship between HE teachers' ICT use and different factors, such as support, digital competence and perceived usefulness of ICT. Despite significant and meaningful determinants in the second part of the project, its findings could not fully describe HE teachers' ICT use. Based on these previous studies, and by adopting a qualitative research design, we explore this further in this third part of the project. More precisely, our aim is to investigate Finnish HE teachers' use of ICT in lower secondary education, using social cognitive theory and drawing on the model of triadic reciprocal causation to enhance understanding of it. The following research question is proposed: how can Finnish HE teachers' use of ICT, their goals and their influences be understood through the lens of reciprocal determinism?

Previous research on ICT use

Students, learning providers and educators are all encouraged to take advantage of ICT in order to support students' embrace of essential 21st century skills, such as critical thinking, creativity, communication skills and digital competence. However, successful use of ICT requires teachers to be provided with sufficient support to adapt to technological change and integrate ICT into their classes to improve quality of teaching and learning. Changes to how teaching is conducted have involved a shift from traditional classroom settings, where the teacher is seen as the source of information, to student-centred learning (SCL) (European Commission, 2019; Lewin & McNicol, 2015; McKnight et al., 2016). SCL gives students greater opportunity to actively participate in classroom practices, while the teacher's role has changed to become a facilitator for students to learn (Crumly, 2014; Starkey, 2019). Using ICT for student-centred classroom activities is thus in line with the recommended learning environments and working methods for HE in Finland (Elorinne et al., 2017; Finnish National Board of Education, 2014). Previous studies have shown that the adoption of ICT helps both students' learning outcomes and the development of 21st century skills in SCL practices (Chen & Yang, 2019; Wong & Li, 2011). Thus, successful use of ICT for educational purposes depends on several different conditions and requires teachers to be provided with professional training and opportunities for collegial exchange and sharing of ICT practices (Wong & Li, 2011; Zhang et al., 2021).

ICT in HE has been investigated internationally, in countries such as Hong Kong, Nigeria and Estonia. It was found mainly to be used in a teacher-directed way and less for supporting students active use (Bridget, 2016; Lau & Albion, 2010; Veeber et al., 2017). A qualitative study (Veeber et al., 2017), reported Estonian HE teachers' potential uses, as for example for illustrating purposes, for students' presentations, and for source of information and communication. Although the aim of use was not in focus, the study revealed that ICT was used for facilitating teachers' own work and for supporting students' motivation. In a Norwegian study, HE teachers used digital tools mainly to introduce variety to classes and, to lesser extent, increase motivation, creativity and cooperation. Studies have also confirmed that wikis can be utilised in HE to foster communication and collaboration, and podcasting to support creativity in the kitchen (Lai & Lum, 2012; Surgenor et al., 2016). In the Finnish context, previous studies have shown that HE teachers use ICT quite infrequently to support pupils' learning (Sundqvist et al., 2020a; Tanhua-Piiroinen et al., 2016). A quantitative study (Sundqvist et al., 2020a) of ICT use by Finnish HE teachers, identified three purposes of use: for cooperation, for facilitating pupils' learning, and for administration and lesson planning. Although the literature recognises the importance of ICT in everyday life (Haveri, 2009; Hölttä, 2014; Poirier et al., 2017), there are still few published studies about its use in HE.

Despite this, numerous studies and several approaches have investigated factors influencing teachers' ICT use in general. Quantitative studies have used causal models to reveal relationships between ICT use and factors such as ICT infrastructure, support, demographics, digital competence, teachers' attitudes, beliefs, and between-school differences (Drossel et al., 2017; Farjon et al., 2019; Gerick et al., 2017; Gil-Flores et al., 2017; Hatlevik, 2017; Inan & Lowther, 2010; Vanderline et al., 2014). Studies on the role of beliefs towards ICT use have shown it to be a quite complex subject, although quantitative studies have noted the role of these in ICT practice. Alignments have further been

identified between pedagogical and ICT-related beliefs and ICT integration practices (Ding et al., 2019; Kim et al., 2013).

ICT use is seen as a complex process (OECD, 2019), and during the last decade there have been various qualitative studies that aim to present a more descriptive and nuanced understanding of its use by teachers (Lawrence & Taar, 2018). A study by Razak et al. (2018) found that successful ICT use relied on several conditions related to the ICT tools available, division of labour and school rules and regulations that shape ICT culture. Some researchers have also taken a teacher's perspective and analysed their beliefs and perceptions in relation to their use of ICT. Teachers' perceptions of the challenges of ICT use further relate to aspects of competence, ICT infrastructure, learning materials, time, curricula, policies and the subject being taught (Erixon, 2010; Lindberg et al., 2017; Tallvid, 2016). Overall, these studies clearly indicate that teachers' ICT use is influenced by various factors; but still, little is evident about its use by HE teachers.

Social cognitive theory

To get a better understanding of HE teachers' ICT use, social cognitive theory (SCT) drawing on the model of triadic reciprocal causation (Figure 1) is used as a lens in this study. This theory focuses on human development and addresses knowledge acquisition and the regulation of human behaviour (Bandura, 1986). Human behaviour is explained in terms of triadic reciprocal causation, meaning that behaviour is part of a triadic system in which behavioural, personal and environmental determinants mutually influence each other. Translating this theory into the field of ICT in education, the way teachers use ICT is part of a constant interplay between personal and environmental influences. Personal factors refer to cognitive, affective and biological elements such as personal characteristics, skills, expectations, beliefs, self-perception, goals and intentions (Bandura, 1986, 1989). Environmental factors are created by human activity and can include both physical and social environments. Within SCT, environment is emphasised as a non-fixed entity, which means that some aspects of it will always have an influence on the individual at some level, while other aspects will have an influence only when they are activated by a specific behaviour. Environment can thus have a role both as an inhibiting and an encouraging factor on a person's development and functioning. The strength of these influences on behaviour varies depending on the individual and circumstances. In some cases, an environmental component functions as a strong barrier to a specific behaviour; in others, personal factors have a predominant influence on behaviour (Bandura, 1986).
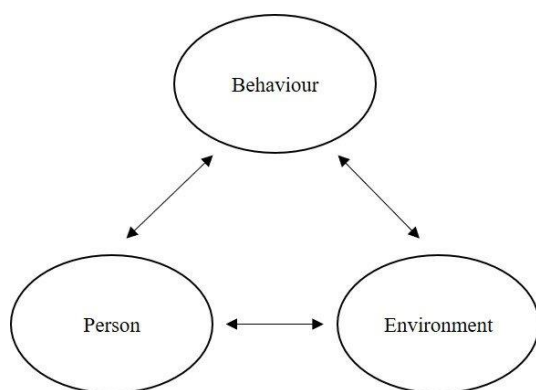

Figure 1   **Theoretical Research Model Adapted From Bandura's Model of Triadic Reciprocal Determinism (Bandura, 1986, p. 24)**

In regard to behavioural patterns and their interactive relations to environmental events and personal regulators, SCT acknowledges that humans are not passive objects shaped by different factors. The influences are conditional of each other and do not function autonomously. Further, Bandura emphasised self-regulatory mechanisms as an important element of causal processes and set them at the base of the theory of triadic reciprocal determinism. Within this mechanism, people have the capability to exercise some control over their own thoughts, feelings and behaviour, for instance through activities requiring forethought such as goal setting (Bandura, 1986, 1991). People set goals and engage in activities that most likely lead to positive outcomes. This leads to a motivation to act and creates beliefs in the effect of an action. However, goals do not directly guide behaviour. Instead, they activate self-influences, which in turn are affected by the characteristics of the goals. People who set no goals for themselves will have difficulty monitoring their own behaviour. Conversely,

people who set themselves challenging goals have more interest and motivation to take strides to fulfil them. Such efforts mean shaping cognitive and environmental conditions to fit one's own purposes (Bandura, 2001). Bandura also emphasised the role of performance feedback. Without knowing how one is performing, a goal would simply not have a motivational effect on one's actions. The same behaviour can serve different goals, and it should not be analysed by excluding goals (Bandura, 1986, 1991). This study is limited to the analysis of HE teachers' use of ICT, their goals through using it and factors that have influenced this adoption. SCT enables emphasis to be placed on the bidirectional notion of interactions, since teachers are provided with opportunities to both reflect on factors associated with their ICT use and on their actions and practices, which in turn allow other influences to emerge.

Methodology

Research design

In this study, we employ an abductive research approach (Kirppendorff, 2004) that moves back and forth between inductive and deductive approaches. In the initial phase, deductive reasoning enables the development of an interview instrument by considering facts and observations from previous research and by formulating a research question based of the theory of triadic reciprocal determinism. In the analysis phase, an inductive approach allows discovery of new dimensions of importance, while a deductive approach provides a more descriptive understanding of well-known factors influencing HE teachers' use of ICT. In the final phase, we assess and discuss the results through the lens of Bandura's triadic reciprocal causation model to provide new insights.

Participants and data collection

The sample consisted of 12 qualified HE teachers (11 women, 1 man) working in lower secondary education in Finland. One teacher had less than 5 years' teaching experience, 3 teachers had 5–10 years' experience and 8 had more than 10 years' experience. Purposeful stratified sampling methods were applied to provide rich information and major variations in cases (Patton, 2002). The HE teachers were randomly selected based on three pre-identified profile groups (frequent ICT users, specific ICT users, infrequent ICT users) with similar characteristics of ICT use (Sundqvist et al., 2020a). Semi-structured interviews were performed online via Zoom ($n = 10$) or face-to-face at the teachers' workplace ($n = 2$). Both in advance and at the beginning of their interviews, the participants were provided details about the aims of the study, how the data would be processed and the ethical principles guiding the research (Finnish National Board on Research Integrity TENK, 2019). The interview questions encouraged the informants to discuss important research issues in a conversational, loose but focused manner (Adams, 2015). Each interview started with background questions, which were followed by questions about the participant's use of ICT, goals and influences. Further, the interview included elements noted by previous studies in the field (Sundqvist et al., 2020a, 2020b) as being significant for a deep understanding of HE teachers' ICT use. Three pilot studies were conducted and, as a result, some minor changes were made to the interview questions. The interviews, which were audio-recorded, lasted about 40–70 minutes and were transcribed by the researcher verbatim (Kvale & Brinkmann, 2009).

Data analysis

The data were analysed by adopting an abductive approach to qualitative content analysis with Nvivo12 software (Elo & Kyngäs, 2008; Kirppendorff, 2004). During the analysis, some of the main steps suggested by Erlingsson and Brysiewicz (2017) were followed in cycles. The first phase involved familiarisation with the data, and the transcribed text was read closely several times over to provide a sense of its insight. A deductive approach was applied to create themes based on the three-fold research question. The next two phases involved dividing up the text into meaning units and formulating codes. The text was broken down into these meaning units and labelled with preliminary codes that were derived directly and inductively from the text. The researchers carefully compared the codes to identify similarities and differences. The final phase involved the development of categories and themes. The codes were grouped together to develop sub-categories and main categories. The results were interpreted, and to ensure the trustworthiness and quality of the process, the data were rechecked several times and the categories were continuously cross-checked by another author. At the end of the process, the results were reflected against the model of triadic reciprocal determinism to provide a deep understanding of HE teachers' ICT use.

Results

The findings were reported in relation to the three-fold research question—use of ICT, goals for its use, and influences for its adoption. The inductive analysis is based on HE teachers' responses to both open-ended questions and more direct questions on their perception of the usefulness of ICT, their digital competence and the support they receive. These responses were illustrated with extracts from the raw data and translated by the authors from Swedish and Finnish into English, correcting for grammatical errors without losing the original meaning.

Goals for use

In the interviews, the teachers were asked about their goals for ICT use. However, two teachers did not respond to the question after it had been missed out by the researcher. The HE teachers' ICT use was categorised into two main categories and five sub-categories (Table 1).

Table 1   **Goals for Use**

Categories	Teachers (*n* = 10)	Sub-categories	Teachers (*n* = 10)
Supporting students' learning	8	Increasing students' attention, motivation and interest	7
		Supporting students' understanding of concepts and topics	3
		Supporting students' engagement and self-awareness	3
Supporting teachers' work	2	Supporting teachers' instructional work	1
		Increasing teachers' motivation	1

Supporting students' learning

The goal of supporting students' learning was shared by eight teachers. Most commonly, teachers said they use ICT to increase their students' attention, motivation and interest. One teacher briefly explained the relationship between learning and use of ICT to increase attention:

> It grabs their attention. If I just talked and they did not see pictures, a lot of the teaching would pass them by. (Interview 6)

Some teachers said they use ICT to support their students' understanding of difficult concepts and topics by enabling visualisation techniques such as videos and illustrative programs. ICT is also used to enhance students' engagement and self-awareness, while some teachers talked about the importance of using it to empower their students to take greater responsibility and learn to use the knowledge that they themselves have gathered.

Supporting teachers' work

Only two teachers explicitly spoke about using ICT to support their own work. One felt that ICT has a motivational impact on his work, while the other one stated that:

> The aim of ICT is to facilitate our everyday lives; that is, I have used ICT to our advantage completely … All the material is in one place. As a teacher, I do not have to search for and wonder where something is. (Interview 9)

This view is thus related to the aim of using ICT for supporting teachers' instructional work.

ICT use

Closely related to the goals of ICT use, teachers were also asked about their experience of using ICT in teaching HE, and further to explain how they had implemented it. As a result of the analysis, three main categories and six sub-categories were identified (Table 2).

Table 2   **ICT Use**

Categories	Teachers (n = 12)	Sub-categories	Teachers (n = 12)
Students' active use	12	Searching and creating content	12
		Formative assessment	6
		Communication and interaction	4
Teacher-directed use	11	Presenting and visualising information	11
		Archiving and providing learning materials	8
		Summative assessment	5
Cross-curricular use	3		

Students' active use

All the teachers said they give their students the opportunity to actively use ICT to varying degrees and provide them with tools to create, search for, manage and store content. Most teachers utilise ICT in this way between once a month and once a year, which indicated quite infrequent use. The tools provided, and the content created, also differ greatly among them. Most commonly, students create different kinds of presentations using applications such as Sway, PowerPoint, OneNote, Keynote or Pages. One teacher described this as follows:

> Chromebooks are first picked up and then, in International Cooking, for instance, the students in pairs search for information about a country of their choice and then share it via OneDrive. (Interview 1)

The teachers also use ICT to create other types of content, such as video learning materials, comics, animations and posters, while it is less common for students to utilise ICT for home assignments. Six teachers said they use formative assessment methods such as quizzes and diaries, allowing students to reflect on and evaluate their own learning. Finally, some teachers use ICT for students' communication and interaction, for example through Instagram, while others use it for mediated student content interaction, for example with QR codes and digital learning platforms.

Teacher-directed use

Almost all teachers said they use ICT in a teacher-directed way, and most of them do so for presenting and visualising information and learning materials. Video clips are utilised to visualise different practice-orientated tasks, such as cooking and cleaning processes, while digital presentations and slides are used to deliver practical instructions and transmit learning content to students in a traditional way. Eight teachers said they use ICT for archiving and providing students with learning materials, and a variety of platforms are used, such as blogs, web pages, e-books and cloud storage infrastructure offered by the school. For example, one teacher explained her use of Teams in teaching:

> I post documents that the students need and test answers, and if they are rehearsing for an exam, they read the documents on Teams… Also, when students have created presentations, I collect them all there. (Interview 10)

Some teachers give students access to materials at home. When learning material is not accessible from home, the teachers make it available in class. In the latter case, students have booklets or folders in which all essential material is stored. Finally, some teachers use online tools such as Google Forms and Socrative for summative assessment, although some view it as problematic for various reasons.

Cross-curricular use

Three teachers said they have implemented cross-curricular use of ICT to enable students' participation in multidisciplinary projects between school subjects:

> Two years ago, a multidisciplinary learning unit team planned modules so that the seventh, eighth and ninth graders had their own themes. The seventh graders had fish as their theme, which include the subjects of biology, chemistry and home economics… Every subject had its own tasks that were completed during class time. Based on these tasks, the students compiled different info packages or studies, which were then uploaded to OneNote. (Interview 11)

To support this type of work, teachers and students use different Office 365 applications and digital devices such as laptops, mobile phones and Chromebooks.

Influences

The dimensions of influences associated with HE teachers' ICT use are presented in Table 3 and described in the text below. The inductive analysis resulted in six main categories and 20 sub-categories.

Table 3   Influences

Categories	Teachers (n = 12)	Sub-categories	Teachers (n = 12)
ICT infrastructure	11	Tool availability	11
		Application software	4
		Internet access	4
Organisational factors	11	Technical and ethical safety issues	6
		Time constraints	4
		Financial resources	3
		Instructional facilities	3
Support	9	Shared practices and collegial support	5
		Support from school	4
		ICT teacher training	3
Teaching factors	12	Teachers' digital skills	10
		Personal interest and motivation	8
		Teachers' beliefs	6
		Teachers' own time and effort	5
		Teacher characteristics	2
Subject culture	4	Students' expectations	3
		Curriculum	1
		Status of the subject	1
Student factors	3	Students' ICT behaviour	2
		Students' ICT skills	1

ICT infrastructure

Eleven teachers acknowledged ICT infrastructure to be either a barrier or facilitator for use, or both. The teachers who highlighted sufficient ICT infrastructure as an important facilitator for use, focus especially on digital tools. One teacher, for instance, reflected on digital tools in relation to usefulness of such tools for their own work, while others mentioned the important role of internet access and functional applications. This is how one teacher stressed the importance of digital devices:

> All teachers who wanted them got their own Chromebooks, and this has facilitated work and note-taking enormously. (Interview 11)

Teachers who said they experience ICT infrastructure as a barrier face challenges with poor internet connectivity and scarcity of working devices and software. The ability to book out devices is also a challenge faced by some teachers. Planning their use far in advance, managing the iPad cart and keeping track of cables were said to be challenging and time consuming. Further, some teachers face difficulties in the use of applications when teaching; when this problem goes unsolved, the applications remain unused.

Organisational factors

Multiple organisational influences were put forward by the teachers, who identified various technical and ethical safety issues that have a negative influence on their ICT use and an indirect link to their level of interest in it and motivation to adopt it:

> I do not like using tablets in HE… For example, today we made buns. What would the tablets have looked like after doing all that baking? (Interview 7)

In addition to the risky use of devices in the kitchen, ICT raises other issues, such as cyberbullying and sharing inappropriate content, while time constraints were highlighted by four teachers as another drawback for using ICT in HE. They touched on the limited amount of lesson time given over to HE and the length of lessons. In addition, three teachers said that inadequate instructional facilities are also a major barrier. One felt that the use of ICT in the classroom is too clumsy and impractical, and the available devices and cables cannot be organised in a practical and functional way. Finally, lack of financial resources was identified as an organisational factor that has negatively influenced their adoption of ICT by limiting equipment procurement and training.

Support

Most teachers noted the importance of collegial support and shared practices, availability of support from schools and the provision of ICT training for teachers. Some variously touched on the benefits of planning joint ICT use with colleagues and their desire to share ICT practices with other colleagues, although a lack of this type of collaboration was noted. One teacher voiced approval for the support they had received from their school, which had provided a digital tutor, although another had felt overwhelmed by the amount of information on ICT provided. Teachers who had received enough technical and pedagogical support when they needed it were especially satisfied. In contrast, some teachers touched on schedule difficulties and time constraints obstacles to taking advantage of the support provided by their schools. One teacher also pointed out that prolonged resistance from colleagues and school management would eventually lead to declining interest in ICT. Another emphasised the relationship between support provided, skills gained and increased personal interest towards ICT use:

> After all … it also been [my] desire to learn. Ever since our municipality started offering ICT teacher training, I have grasped the opportunity. This is one thing that needs to be mastered. (Interview 9)

The teachers noted a variety of considerations that need to be made when providing teacher training in ICT, such as adjusted levels of difficulty, the provision of follow-up training and content relevant to teachers' wishes. Most teachers wanted training to address practical and pedagogical means to implement ICT in HE by taking into account their lesson structures, and also how different devices and applications should be used.

Teaching factors

The teachers stated that their own digital skills had an impact on their use of ICT. In analysing HE teachers' perception of their digital skills, the result show that five teachers perceive having great digital skills, four teachers of having basic digital skills and two of having poor digital skills. Eight teachers also highlighted their personal interest and motivation as being important indirect influences for their ICT adoption. They pointed out that these factors might be linked to their age, background of ICT use and ability to develop ICT skills. However, lack of interest and motivation may lead to devices being left unused in the classroom and the decision not to spend time on skills development. Some teachers talked about the nature of HE and highlighted the importance of preserving the practical nature of the subject, which also meant emphasising traditional hands-on skills instead of increasing ICT use:

> I would rather stick with these traditional, hands-on and collaborative skills and teach without having to keep an eye on Chromebooks. (Interview 1)

This again revealed an interplay between teachers' beliefs and technical and ethical safety issues. Some teachers recognised ICT use as being a life skill, and also noted the importance of using it in HE teaching and learning. Belief in the usefulness of ICT was also recognised as being important in this way. For instance, one teacher expressed her view that ICT is not particularly important in HE, and pointed to her own limited use of it. When specifically asked about their perceived usefulness of ICT in HE, the teachers said that it supported both their own work and their students' learning; however, some did not see is relevance in helping them to achieve their learning objectives, relative to their view that HE should remain a practical subject. Teachers' available time and the effort required also hinder their ICT use. They felt that they lacked time and energy to plan meaningful ICT use and participate in training. Characteristics of age, prior experience and education were also voiced as important influences when discussing ICT use.

Subject culture

Several aspects linked to subject culture emerged as being of important for HE teachers' ICT use. These included students' expectations, subject priority settings and breadth of the curriculum. For some teachers, students' expectations are so important that they influence how much they prioritised ICT use:

> The students would be extremely disappointed if we spent two hours on the computer and did nothing practical. I prefer to keep this as a practical subject, instead of one focused on theory." (Interview 7)

The general perception of HE as a low-priority subject was something one teacher pointed out as being a factor limiting the purchase of resources. Another stated that the curriculum is so broad that teaching can be influenced by one's own personal interests.

Student-level factors

Student-level factors were related to students' ICT behaviour and skills. Two teachers felt frustrated about the behaviour of some of their students who have been found using devices to play games and surf on the internet during class. For example, one teacher said:

> Some of the boys are not on the right page to do the tasks; instead they are on another website… The biggest problem is the fact that that it immediately happens when you turn your back… They are faster at using ICT and computers than me. (Interview 8)

Students' lack of digital skills also partly influenced one teacher's ICT adoption, saying that it would take a great deal of time for their students even to turn on their computers.

Discussion

The aim of this study is to investigate Finnish HE teachers' use of ICT, using social cognitive theory and drawing on the model of triadic reciprocal causation to enhance understanding of it. Further, the study sets out to provide new insight into how HE teachers' use of ICT should be supported as a means to support student learning.

First, we will discuss findings related to HE teachers' goals and ICT use through Bandura's goal-setting concept through the model of reciprocal determinism (Figure 2), which is treated as a personal factor and one of self-regulating mechanisms that functions as a mediator between external influences and behaviour. Although the function of self-set goals cannot be distinguished as a main element in the three-point model itself, Bandura states that these can have a self-motivating influence on behaviour. Further, people who set goals for themselves also find it easier to monitor behaviour by clarifying conditional requirements (Bandura, 1986, 1991). When HE teachers were asked to report their goals through ICT, they primarily reflected on using it to support students' learning, and to some extent to support their own work. They especially highlighted students' attention, motivation and interest. These results are partly supported by previous research, such as the study by Veeber et al. (2017) and Beinert et al. (2020). However, we noted that HE teachers had difficulty in expressing their own goals, often repeating the way that ICT is used, instead of describing their aims. Some misalignments between aims of use and actual use were also found. While HE teachers' goals for the main part targeted student learning, they reported implementing it in both student- and a teacher-directed

ways. More specifically, ICT was adopted for students' active use, teacher-directed use and cross-curricular use, with the first two consistent with the study of Veeber et al. (2017). All HE teachers used ICT for students' active use, which is in line with the recommended approach of SCL to teaching (Crumly, 2014; Starkey, 2019). However, supporting active learning was not at the core of HE teachers' goals. This indicates that their ICT use is not entirely goal-directed, and in relation to the self-regulating concept of goalsetting (Bandura, 1986), they may have difficulty in self-observing and evaluating their own performance. Thus, limited awareness of what one is doing makes it difficult to set goals for one's actions. The goals themselves are important for adapting behaviour by specifying the conditions required to use ICT in a way that brings positive outcomes. HE teachers who expressed their goal was to support students' engagement and self-awareness would more likely make greater efforts to create conditions for implementing ICT that would achieve this aim. Many of these conditions were identified in this study and should be further discussed in relation to Bandura's model of triadic reciprocal determinism.
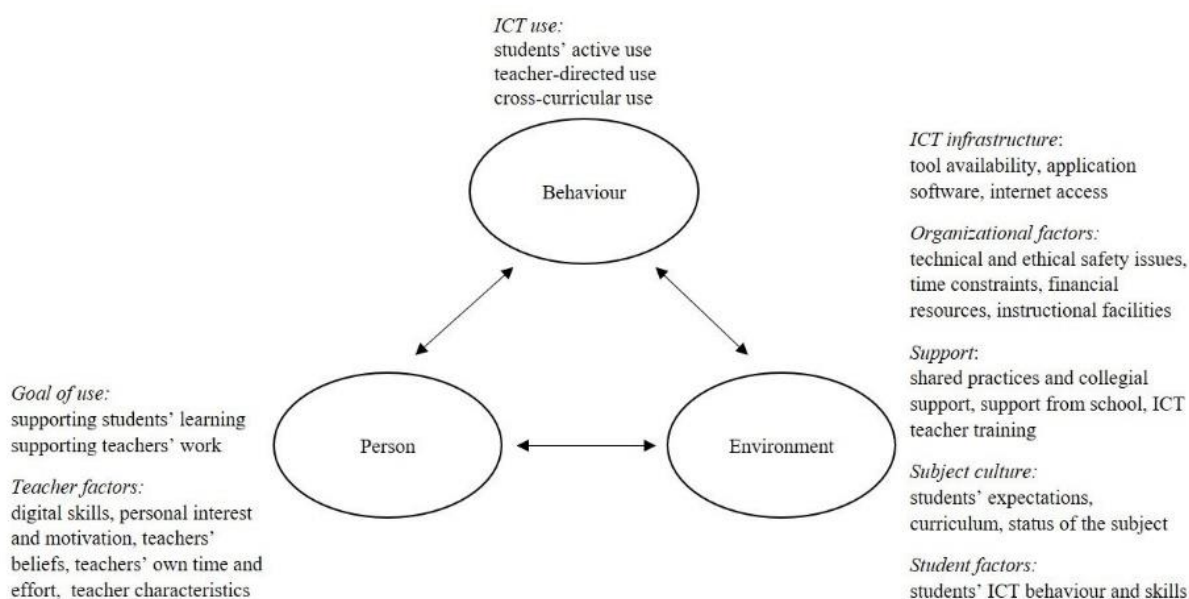

Figure 2   Results Related to Bandura's Model of Triadic Reciprocal Determinism

Because personal, behavioural and environmental influences function as reciprocal determinisms of each other, it is not appropriate to discuss these separately. Therefore, the identified influences positioned in the environmental and personal levels in Bandura's model (Figure 2) are mostly discussed as conditional of each other. We start by discussing the influences related to HE teachers' use, positioned as *environmental factors* in the model (Figure 2) and also supported by previous research (Drossel et al., 2017; Gerick et al., 2017; Gil-Flores et al., 2017; Inan & Lowther, 2010; Lindberg et al., 2017; Razak et al., 2018; Tallvid, 2016).

A majority of HE teachers noted the importance of ICT infrastructure, and more specifically, the availability of devices, software and internet access. Issues in booking devices is one unexpected barrier that some HE teachers encountered, although this was also observed in the study by Erixon (2010). HE teachers are thus still in need of adequate software and digital devices that are readily available for their classes. In terms of organisational factors, challenges with time limitations and perceptions that HE classrooms are not suitable for digital tools are two factors that stand out. The latter is linked to teachers' interest, motivation and beliefs. A fear of damaging a device in the kitchen is, for instance, associated with reduced motivation for using it. Reticence towards using ICT further relates to the importance of preserving the practical nature of HE. This relates to the bidirectional causality in personal and environmental factors in Bandura's model and his statement that environment does not directly impinge on people's behaviour. Environmental influences operate alongside cognitive and personal influences such as beliefs and competencies (Bandura, 1986). These

findings therefore show the relevance of analysing subject-specific beliefs and other cognitive influences related to ICT use (Ding et al., 2019).

In relation to the environmental factor of support, the findings are in line with the study of Sundqvist et al. (2020b), who found a link between HE teachers' use of ICT and the support they are given to implement it. HE teachers value collegial support and wish for opportunities to share practices, which are important factors contributing to teachers' successful ICT use in implementing student-centred instructional practices (Wong & Li, 2011; Zhang et al., 2021). Even though various forms of support have been highlighted in previous work (cf. Inan & Lowther, 2010), it is important to specify the delivery and content of such support. In accordance with our findings, HE teachers should be offered subject-specific teacher training focused on pedagogical ICT practices, tips and concrete ideas with opportunities to follow-up. Support should further be offered immediately as a problem arises, for example by a tutor at the school. The findings also showed that support is connected to HE teachers' motivation, interest and digital skills, which further show a relation between environmental, personal and behavioural influences (cf. Sundqvist et al., 2020b). Teachers participate in ICT training to develop their skills when they are interested and motivated. Having enough time, effort, motivation and interest either hindered or facilitated most of the teachers' ICT use. This again shows how the complexity of several interactional influences can influence behaviour according to Bandura's model. HE teachers' lack of interest and motivation in participating in ICT training and developing their digital skills leads to more limited use of ICT and a feeling of lack of support. This relates to Bandura's (1989) statement that behaviour changes environmental conditions and is further changed by the conditions it creates. Subject culture and student factors were also identified as environmental factors. Subject culture focuses mostly on students' expectations, but also on the breadth of curriculum and low status of the subject. Aspects related to subject culture also appeared in the study by Erixon (2010), who found that HE teachers are afraid that the subject will lose its attraction if more ICT were applied. Although this study does not address mechanisms of cultural change, these are further important aspects to address.

We will now discuss influences positioned as *personal factors* in Banduras model. We have already touched upon influences such as digital skills, personal interest and motivation, and to some extent teachers' beliefs, time availability and willingness to apply effort. In relation to their beliefs, and consistent with previous research (Sundqvist et al., 2020a), the perceived usefulness of ICT in HE is identified as an influence. A belief that ICT does not play a major role in achieving the learning objectives of HE is also related to a viewpoint that HE should remain practical. This finding is supported by Erixon (2010), who stated that HE teachers wish to retain the practical nature of the subject, instead of incorporating ICT into teaching. Conversely, HE teachers who perceive ICT as an everyday skill find more use for ICT. The alignment between subject-specific beliefs, perceived usefulness and ICT use is partly in line with the results of Ding et al. (2019), who found a relationship between content-specific pedagogical beliefs and ICT practices. This again raises the importance of cognitive functioning and attitudes guiding behaviour (Bandura, 1986).

Limitations and further research

Our understanding of HE teachers' ICT use is mostly based on analysing use, goals and influences in separate phases; meanwhile, Bandura's (1986) notion of reciprocal determinism is based on behavioural, personal and environmental factors that exert mutual influences onto each other. Limited analysis of the multiplicity of interactions between these influences is therefore a weakness in this study. Another weakness is our ambition to address only the forethought perspective of goalsetting, while Bandura (2001) reported other perspectives of importance, such as outcome expectations. Consequently, further research utilising other methodological and analytical approaches could be useful for investigating relationships between the influences identified in this study and teachers' ICT use. Since goals also partly direct behaviour, and a misalignment between HE teachers' aims of use and actual use appeared in this study, it could be interesting to explore the extent to which HE teachers' goals mediate the environmental and personal influences on their use. However, we did not find Bandura's model useful for understanding all forms of influence, especially those of subject culture and teachers' beliefs. Further research is thus needed to understand HE teachers' beliefs when teaching and the extent to which beliefs and culture influence HE teachers' use of ICT.

Conclusions

In this study, we looked through the lens of Bandura's theory of reciprocal determinism to enhance our understanding of the influences related to HE teachers' ICT use and their goals for its use. The results show that their ICT use not only depends on their goals, but also on influences identified at the environmental and personal level of Bandura's model. The interplay between these influences is, however, complex and difficult to grasp. The findings from their expressed aims indicate that HE teachers need to be supported in setting goals for their ICT use. According to Bandura (1986, 1991), people need to be aware of and pay attention to the role of their own performance in influencing motivation towards a specific behaviour. Being aware of one's own performance supports goal setting which in turn increases determination to achieve self-set goals. Further, this also means that support should be organised in a way that feedback is provided on how teachers are using ICT, thereby helping them to set goals in this regard. This, in turn, increases teachers' motivation and interest in developing their adoption of ICT by clarifying conditional requirements. Based on the results of this study, this means making efforts to provide HE teachers with support to develop their digital skills, demand proper ICT infrastructure and support shared practices between colleagues and finally follow-up teacher training that focuses on the teachers' requirements.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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Norwegian Primary School Teachers' Pedagogical Practices for Food and Health Meals and School Lunches

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Abstract

The aim of this article is to explore teachers' pedagogical practices in Food and Health (FH) meals and school lunches in Norwegian primary schools. This is a qualitative case study of three schools in Western Norway. The data were collected from observations of sixth-grade FH education, school lunches, and individual interviews with teachers and head teachers. Three categories were identified for institutional foodscapes: 1) organisational, 2) physical, and 3) social space. These foodscapes work to explain how teachers' pedagogical practices are affected differently during the two meals. A clear difference was observed between teachers' pedagogical practices in the FH meal and the school lunch. In the FH meal, the teachers took on different roles where the teacher communicated socially with the pupils and educated them. During the school lunch, the role of the teacher is observed to be more passive (or withdrawn), where the teachers mainly addressed the students in order to correct behaviour.

Conclusion: The results emphasise that a clearer policy for meals in schools should be established where attention is paid to the teacher's role as a pedagogue during meals in facilitating the pupils' development of health-promoting eating habits and social competence during meals.

KEYWORDS: FOOD AND HEALTH MEAL; HOME ECONOMICS; SCHOOL LUNCH; FOODSCAPE; TEACHER PRACTICES

Introduction

In the Norwegian primary school system, children and youth come into contact with food and meals in different contexts, such as Food and Health as school subjects as well as school lunches. A meal can be explained as a social situation regulated by certain rules and behaviours (Mäkelä, 2009), and mealtimes are recognised as cultural opportunities for social participation through communicative practices (Ochs & Shohet, 2006). Nielsen and Høyrup (2012) used the term a *school's food and meal culture* as a unifying concept for the actions and values associated with food and food intake in schools. According to Mikkelsen (2011), there is a growing interest in studying the influence of the food environment and understanding how people, spaces and food interact. Therefore, in this article, we use Mikkelsen's (2011) concept of *foodscape* to investigate the school lunch and the meal in the course subject titled Food and Health.

In school, pupils experience school meals every day, unlike the meals that are part of the sixth grade Food and Health class which they experience occasionally (usually once a week). The Norwegian subject titled *Food and Health* can be compared to the subject *Home Economics* in an international context (Ask et al., 2020). When referring to meals as a part of *Food and Health*, the abbreviation

FH meals is used while the term *school lunch* refers to the meal pupils eat during their lunch breaks. The FH meal is included as part of the teaching of food and health and is regulated by the Food and Health curriculum (Ministry of Education and Research, 2006). The school lunch follows national guidelines established for food and meals in schools (Norwegian Directorate of Health, 2015). The FH curriculum and the national guidelines for food and meals in schools has varying legal significance; the former is a legal regulation, whereas the latter are recommended guidelines. However, both domains give teachers great autonomy in carrying out the two meals. In 2020, a new curriculum (Directorate for Education and Training, 2020) was introduced, but this study was carried out under the Ministry of Education and Research curriculum and guidelines (Ministry of Education and Research, 2006).

The Food and Health school subject involves teaching pupils about the opportunity to choose and critically reflect on food and meals in order to acquire knowledge about what promotes good eating habits and good health (Ministry of Education and Research, 2006). Meals have always been an important component of the class. The subject of Food and Health is also an important arena for developing social skills in collaboration, experimentation, and development of critical judgement (Ministry of Education and Research, 2006), for example, in meals.

Previous research on FH largely focuses on teaching goals such as organisation, pedagogical expertise, and practical work, such as teaching about cooking (Ask et al., 2020; Beinert, Palojoki, et al., 2020; Beinert, Palojoki,, et al., 2020; Gisslevik et al., 2016; Lindblom, et al., 2016). Oljans et al. (2020) discuss FH teachers' educational choices regarding the educational content of food and health. They focus on social and cultural aspects, such as the interaction and participation of teachers and pupils to create a positive atmosphere of togetherness and relaxation during meals (Oljans et al., 2020). They point out that meals emphasise social values, and thus, norms and values in relation to food (Oljans et al., 2020).

School lunches in Norway's primary schools are composed of food items prepared and brought from home and consumed in the classroom in the middle of the day. Further, schools in Norway are required to have routines for government-subsidised subscription schemes that provide pupils with fruit and milk during school (Norwegian Directorate of Health, 2015). The national guidelines for food and meals at school describe lunches as opportunities for "promoting social togetherness and being physically adapted to develop pupils' social skills and that food brought from home should be in line with national dietary recommendations" (Norwegian Directorate of Health, 2015, p. 15).

In recent years, there has been growing research interest in the social and cultural perspectives of school lunches. For instance, Lalli (2020) investigated teaching staff's perceptions of social learning with a specific focus on the culture of school mealtimes. The teachers related social learning primarily to rules of conduct during meals and did not take into account that pupils could develop social skills through observational learning (Bandura & Walters, 1963; Lalli, 2020). Fossgard et al. (2019) focused on lunch breaks from the pupils' perspectives and found that several of the pupils experienced that the lunch break was governed by the teachers' agendas; thus, they had limited opportunities to create their own social spaces.

Research indicates that teachers play a key role in pupils' learning processes in school, such as how school meals are conducted (Lindblom et al., 2016; Mita et al., 2015). Teachers' perceptions of their own pedagogical teaching processes in school can be related to Goodlad's description of the technical-academic aspect of school education (Goodlad, 1979). Goodlad explains the technical-academic aspect as an interpretive knowledge of the curriculum content, that is, the teachers' interpretive knowledge of the content of the FH curriculum (Ministry of Education and Research, 2006) and the national guidelines for school meals (Norwegian Directorate of Health, 2015) and how they are applied based on pedagogical practice during meals.

To our knowledge, the teachers' roles during the two meals has not been compared; thus, this study aims to contribute to a better understanding of how teachers perceive and perform their tasks in the two meals. This will be important knowledge to help understand why teachers practice different pedagogical practices during the two meals.

The aim of this article is to explore teachers' pedagogical practices in the FH meal and school lunch in Norwegian primary schools within the school's foodscape.

Conceptual framework

Institutional foodscape

The concept of foodscape has been used as a tool to describe food and meal environments in institutional eating events in schools. Researchers perceive foodscapes as "the places and contexts where children eat and come into contact with food and the meanings and associations connected to them" (Johansson et al., 2009, p. 30). Mikkelsen (2011) emphasises how food and meals in schools are affected by physical and structural conditions. In accordance with Mikkelsen, institutional foodscapes can thus be defined as "the organisational, physical, and sociocultural spaces in which pupils and teachers encounter meals, food, and food-related issues" (2011, p. 210). Within Mikkelsen's (2011) definition of foodscape, we explore the FH meal and the school lunch with a focus on teachers' pedagogical practices during meals.

The organisational space refers to routines that make up different structures in meals, such as the time meals are eaten, what is eaten, and with whom (Brembeck et al., 2013). The FH meal and the school lunch have different structures for when and for how long pupils eat, what they eat, and the dining areas (which are all different for the two meals). The head teacher is responsible for how school subjects and meals, such as school lunches, are organised in the school, and also has the authority to plan various school subjects and mealtimes, such as the school lunch in the teachers' timetables. The teachers thus become responsible for how the meals are influenced by their pedagogical practices during meals. The physical space refers to the classroom and the school kitchen with tables and chairs, the way the food is served, and the food's physical appearance (Sobal & Wansink, 2007). The FH classroom is usually equipped with kitchen units and associated dining areas, while the regular classroom is usually equipped with desks according to the number of pupils in the class. The social space refers to the social relationships that occur within the classroom or dining room, and during meals between pupils or between teachers and pupils. The social space is often associated with good food experiences and pleasant surroundings during meals (Berggren et al., 2020).

Teachers' roles

Vangsnes and Økland (2018) believe that teachers play different roles, namely, positioning, supportive, and distal roles. The positioning teacher is the active teacher, while the supportive teacher takes a more guidance-oriented approach. Further, the distal teacher is physically present, but not mentally and verbally present (Vangsnes & Økland, 2018). Vangsnes and Økland also use the terms intervening teachers and directing teachers (Vangsnes & Økland, 2015, 2017) to explain different positioning roles. Teachers' different roles are also highlighted by Osowski et al. (2013) who investigated how teachers engaged with the pupils during mealtimes. They refer to the school meal as a teaching occasion (the pedagogical meal) with an emphasis on teachers' interactions with pupils and thus identified three types of teachers: sociable, educational, and evasive (Osowski et al., 2013). They found that the sociable teacher was active in their interaction with pupils by talking and listening, and turned the school lunch into a social occasion. The educational teacher explained, applied rules, and rewarded good behaviour, while the evasive teacher was quite passive and did not become involved socially during the meal (Osowski et al., 2013).

Frame factor theory

Frame factor theory (Keating, 2018) can also be connected to school meals. For example, external frame systems describe the overall framework at a school level, such as the FH curriculum (Ministry of Education and Research, 2006) and the national guidelines for school meals (Norwegian Directorate of Health, 2015), which describe, among other things, the physical frame in which the meals are carried out, and the teachers' practice during meals. In this article, the external framework can be understood as what Mikkelsen (2011) describes as the organisation's space while the internal framework revolves around the physical and social space in the school's foodscape.

Method

Study design, participant selection and criteria

This study employed a qualitative comparative case study (Yin, 2017). This methodology enables researchers to conduct a more in-depth investigation of how people interact within different contexts—in this case, the FH meals and school lunches. For this study, we strategically selected three schools from Western Norway that offer one or more sixth-grade FH subjects.

This study was approved by the Norwegian Centre for Research Data. Participants received written information about the study before it began and provided verbal consent to participate and have their interviews recorded.

Data

One class from each of the three schools participated in the study and the data were obtained in each of the three classes by observing two FH lessons, conducting one-to-one interviews with FH-teachers, and observing one school lunch in each class. The head teacher of each school was additionally interviewed.

Observations

Two structured observation forms (Creswell, 2013) were prepared in order to observe the teacher's role during the two different meals. The focus in both forms was on the teachers' interaction role with the pupils, whether the teachers had a dialogue with the pupils, what the dialogue was about, and whether the teachers provided social interaction between the pupils during the meals. The FH meal observations took place in the schools' teaching kitchens, and school lunch observations took place in classrooms where pupils usually eat their lunches. The same pupils and classes were observed for each meal.

Interviews

Semi-structured interviews were prepared and utilized during the interviews with the teachers and head teachers (Creswell, 2013). Questions for the teachers related to how they facilitated pupils' interactions and learning during the FH meals and school lunches, along with their familiarity with the curriculum and official guidelines. The head teachers were asked about their knowledge of the curriculum and national guidelines. In addition, they were asked about what factors influenced the meals such as teaching responsibility, conducting the school lunch, and financial frames. These semi-structured interview guides were piloted at a primary school in Western Norway prior to the study itself, and some adjustments were made in the formulation of the questions to clarify the purpose and efficacy of the questions.

Data collection

The data were collected based on the observations and interviews conducted between April and June 2016 in one class at three primary schools in Western Norway. Data collection followed the same procedure for all three schools. Two separate visits were made to each school, and one sixth-grade FH meal was observed during each visit. Then, another visit was paid to each school for the teacher interviews. A fourth visit was paid to each school to interview the head teachers. Finally, a fifth visit was made to observe the school lunches. All observations were conducted by the first author as non-participatory observations (Creswell, 2013), and complete lessons and school lunches were observed. The data were then anonymised (references are made to School/Head Teacher/Teachers as A, B, and C, respectively).

Analysis

The first author transcribed all the interviews and observation notes. The data were then validated by the author's colleagues. During the processing of the data, Mikkelsen's (2011) concepts of foodscapes (organisational, physical, and social spaces) were useful in the work of coding and categorising. The data were read and encoded within the three aforementioned categories. Thereafter, the data were systematically reviewed by marking meaningful elements in the material. This work was repeated several times to ensure that the data were not coded incorrectly, as some

meaningful elements, such as time, could belong to several categories. Finally, similarities and differences between the different cases were examined.

Presentation of the cases

All of the teachers were women with a qualified teacher status (QTS). Teacher A also had 15 ECTS credits in Food and Health as part of her general teacher qualifications. Teacher C was one of the three with the longest teaching experience—over 30 years—in the subject. Teachers A and B had more teaching experience in subjects other than food and health. In food and health, they had five and three years of experience, respectively. Of the head teachers, one was a woman, and the other two were men.

The FH subject took place one time per week, while the school lunch was carried out every day in the middle of the school day. At School A, there were 23 pupils in the classroom during both meals. At School B, there were 28 pupils, of which eight were present in the FH meal, while the whole group ate lunch together in the lunch classroom. In School C, there were a total of 18 pupils, of which eight were present in the FH meal, while the whole group ate lunch together in the lunch classroom.

Results

We have compiled the results into the three categories established by Mikkelsen's (2011) concept of foodscape: the organisational space, the physical space, and the social space.

Organisational space

The organisational space refers to how routines, such as school policy tasks, scheduling, and budgeting, affects teachers' pedagogical practices during meals.

In the interviews, the head teachers felt that it was not part of their task to acquaint themselves with or to fulfil a need for insight into school policy documents, such as the curriculum content in the FH subject and the national guidelines for food and meals in schools. Their tasks were mainly composed of planning structural frameworks, such as scheduling teaching in the FH subject, scheduling lunch times, organising pupil groups, and planning budgetary frameworks. The head teachers scheduled teaching for the FH subject once a week while the school lunch was scheduled every day in the middle of the school day. The head teachers said their task was to organise the FH subject and the school lunch in such a way that the same teacher was present with the same group of pupils as often as possible. Furthermore, the head teachers organised teaching in the FH subject and the school lunch differently. The school lunch was organised similarly at the three schools by having the entire group of pupils present at the same time in the room during lunch. While School A organised the FH subject by having the whole group of pupils present at the same time in the room, Schools B and C divided the FH subject pupils into smaller groups (of eight pupils).

Regarding the pedagogical aspect of carrying out the FH meals and the school lunch, the head teachers clarified that they left all responsibility to the teachers and believed it was the teachers' responsibility to ensure that the two meals were in line with school policy documents. As mentioned by Head Teacher A: "I leave all responsibility to the teacher to decide the pedagogical content of the FH subject and the school lunch". Furthermore, the teachers confirmed that the responsibility for pedagogical content during meals was left to them. The teachers viewed their pedagogical practices as different during the two meals. They explained that the differences between the two meals were about the content and the practical tasks they had to complete during the two meals. The meal in the FH subject was part of the subject, and therefore, entailed considerable planning in advance of the actual training hours. Teacher A was one of the three teachers who had fellow colleagues also teaching the FH subject, yet she said this about collaboration: "We do not collaborate while planning the pedagogical content of the training lessons; we do it individually". All the teachers claimed that they took the curriculum into account, but that it was not a decisive component for their pedagogical choices. The teachers pointed out that the meals were only considered to a limited extent in the planning of training lessons. For example, Teacher B noted that "The meal is part of the subject".

The teachers did not perceive the school lunch as having any pedagogical approach, and they said that the content during the lunch was more practically oriented, such as arranging the lunch with sufficient time for the pupils to clear their desks and eat their packed lunches. The teachers also

claimed that they used the lunch time for their own work tasks. Teacher C emphasised that the lunch break could also be a break for her: "Sometimes it can be good to have a short break from an otherwise hectic teaching situation". None of the teachers referred to the lunch guidelines for school meals when explaining how they carried out the lunch in practice.

The observations confirmed the teachers' statements about the differences between their pedagogical practices during meals. The meal in the FH subject was influenced by the teacher's pedagogical content choice, such as the recipe. The recipe became decisive for the pupil groups' methodical cooking techniques and in this regard, the teacher's task was to follow-up with the pupils in their learning progress before, during, and after the meal. In the school lunch, it would appear as if the teacher's tasks were characterised by a specific format. The teacher instructed the pupils to clear their desks and take out their packed lunches. The teachers also ensured that the dining environment was calm throughout by correcting fidgety pupils and, finally, the teacher made sure that the pupils cleared sandwich papers and milk cartons from their desks before they could go out and take their break. Teacher A corrected pupils' assignments, while Teachers B and C chose to watch a program on the Smart Board with the pupils during lunch.

In the interviews, the teachers mentioned that the time they had available had influenced how they carried out the school lunch more so than when they were instructing the FH meal. The teachers noted that the time allotted to the school lunch was limited, and that there were many tasks to be performed within this time, such as the pupils having to clear away school items, taking out the packed lunch, and cleaning the desks after they had eaten. In contrast, the FH meal was part of the teaching hours in the FH subject, and the teachers could thus adapt the meals to suit the available time. Table 2 shows an overview of the teachers' active time during the FH meal, the teachers' active time during the school lunch, and the allocated time in the timetable for the FH and school lunches.

Table 1   **Overview of Time Spent on FH Meals and School Lunches as Categorised by Meal Time and Scheduled Teaching Time for Each**

School	Observation 1 FH meal		Observation 2 FH meal		Observation 3 School lunch	
	During meal time (min)	Scheduled teaching time (min)	During meal time (min)	Scheduled teaching time (min)	During lunch time (min)	Scheduled time for lunch (min)
A	22	129	40	129	18	20
B	19	119	21	119	18	15
C	17	128	17	128	10	15

Table 1 shows that the duration of school lunch at all three schools was shorter than the recommended 20 minutes (Norwegian Directorate of Health, 2015), and that less time was spent on the school lunch compared to the time spent on the FH meal. School C had the least amount of time for both FH meals and school lunches. School B had approximately the same duration for FH meals and school lunches. In School A, Teacher A extended the duration of the FH meal in one of the observations as pupils had to prepare desserts (ice cream) during the meal time. This showed that FH meals allowed for more individual choices and provided teachers with the freedom to organise the time spent on different teaching activities according to the total amount of teaching time. These types of adjustments did not apply for the school lunch. If the teacher were to extend the time during lunch, the teaching time or the pupils' break time would be reduced. Teacher A explained that it was difficult to adjust the lunch break because the pupils would not be very happy with a reduction of the longest break during the school day. Teacher A also pointed out that, for instance, the teachers' inspection of the playground during the break also affected how lunch was conducted because the teacher had to end the lunch break earlier to prepare for the teacher's playground duty.

The head teachers reported that they were responsible for preparing a budget for financial expenses for use in the FH subject. According to the teachers, the head teachers influenced the purchasing of ingredients for use in the FH subject, and all of them expressed satisfaction with the allocated budget. During the school lunch, the teachers did not refer to the school's financial obligations since

the meal was based on food the pupils brought with them. In school lunches, the head teachers' task was to administer subscription schemes for milk, fruit, and cold food (School B).

Physical space

The physical space refers to the design of the classrooms' dining areas and available equipment and how it affects the teachers' pedagogical practice during meals.

The observations in the classrooms where the pupils ate the FH meal and the school lunch showed that the pupils' dining areas had different layouts. In the FH classroom, the pupils sat in groups of five to six pupils and the dining area was organised into four groups of benches and tables. In the classroom where the pupils ate lunch, the pupils sat on chairs with an accompanying desk and sat in pairs or separately at desks. The different layouts for the FH and the school lunch classroom dining areas are shown in Figures 1 and 2.

Figure 1   Classroom Kitchen Units and Dining Areas for FH Meals (A, B, and C left to right)

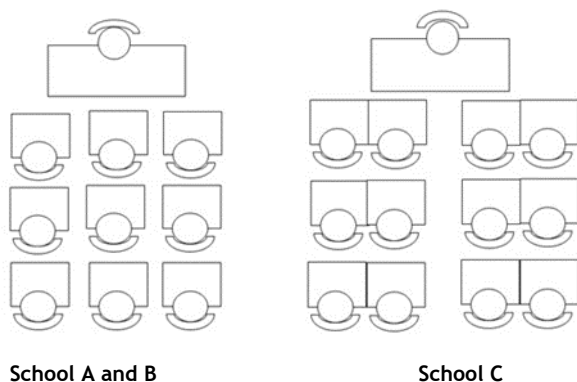**School A and B   School C**

Figure 2   Classroom Layout for the School Lunch

The physical layout of the dining areas in the two classrooms, such as that in the FH meal where the pupils sat in groups as opposed to in the lunchroom where the pupils sat separately or in pairs, may be one of the factors that influenced the teachers' pedagogical practice during the meals.

In the FH meal, Teachers A and C took part in the meals by sitting down to eat with a selected group of pupils throughout the meal. Teacher A also moved around to each group in the room and tasted their food. During the school lunch, the teachers did not take part in lunch. Further, the teachers did not influence the pupils with togetherness because the teacher sat behind their desk during the whole lunch and did not eat lunch in the classroom. The physical layout did not have a dining area, and as such pupils ate at their desks. This design may have also influenced the teachers' pedagogical practice in how the teachers communicated with the pupils regarding unwanted behaviour during the meals. During the FH meal, Teacher A largely talked to the pupils she sat down with about behaviour, but she also moved around to curb unwanted behaviour among the other groups of pupils in the room.

When asked about why she was upset about having a large group of pupils together, she explained the following:

> Up to six pupils sit on the same bench, meaning that they sit very close to each other because the benches are too small for so many. The pupils thus sit bumping and nudging each other throughout the meal which causes a lot of unrest.

Teacher A said that with fewer pupils in the group, she could better initiate social or subject-related conversations with the pupils during the meal. In contrast, with larger groups, a considerable amount of time was spent calming unrest and reprimanding unwanted behaviour between groups of pupils. Teachers B and C reported that they perceived the dining areas as acceptable for the group of pupils in the FH meals because the pupils' behaviour during the meals was not greatly affected by the size and number of benches or chairs.

During the school lunch, each teacher talked to the entire class of pupils about unwanted behaviour. The teacher sat behind the teacher's desk, which led to the teacher speaking louder so that all the pupils in the room could hear what the teacher said. It could also seem that the teacher influenced the lunch by reprimanding the behaviour of some pupils, particularly those who sat closest to the teacher in the room, while other pupils continued to talk quietly together, such as the pupils of Teacher C. These pupils sat in pairs and could interact if they spoke quietly and did not disturb the whole group of pupils.

All teachers had access to a blackboard and a Smart Board in the classroom, where pupils ate the school lunch. In the FH room, Teachers A and B also had Smart Boards, in contrast to Teacher C. The three teachers explained that neither the blackboard nor the Smart Board was used in the FH subject, especially during meals, and thus it did not affect their pedagogical practice during the meals. Teacher A said, "Sometimes I use the Smart Board when teaching a theory in the FH subject, but never during the meal". During the school lunch, all teachers said that they used the classroom Smart Board and believed that using this tool affected the pupils' behaviour, in which they experienced a more calm dining environment, something the observations also confirmed.

Social space

The social space refers to how the interaction, dialogue, and table manners affect teachers' pedagogical practice during meals.

The observations of the FH meals showed differences between the teachers' interactions with the pupils during the meal. Teacher A believed that her interaction with the pupils affected the meal. Further, Teacher A said that she had an influence on the meal since she sat at random and ate with a group of pupils. She explained that her random placement throughout the whole meal affected her relationship with the pupils by allowing her to engage in conversations with several groups of pupils during each lesson. On the other hand, Teacher C chose to sit and eat with the same group of pupils throughout the whole meal, but alternated between the groups in each lesson:

> In this way, I have more time for a conversation with the group and can ask questions about the meals or about the pupils' activities after school. For me, it is a way to show care for the pupils and it is an important task for me as a teacher, so that the pupils feel that they have a social affiliation.

Teacher B did not influence the meal. She said in her interview that she often used the time while the pupils ate to clean up or to put food away. These were tasks she had to perform before leaving the classroom in order to reach the next class.

Teachers A and C's conversations with their pupils during the meal also depended on whether the teachers' conversations had a pedagogical aspect, such as choice of ingredients and taste experiences or whether the conversations had a social aspect related to the pupils' hobbies, such as handball and football (Teachers A and C) and playing instruments, such as guitar (Teacher C). In Teachers A and C's conversations with their pupils about pedagogical knowledge, it seemed that the teachers created a high level of involvement in the subject with their questions related to pizza (A) and pancakes (C). The pupils were engaged and showed curiosity and interest in the questions. This led to topic-related discussions between the teacher and the pupils, and between the pupils, and everyone expressed their own opinions, such as "I like mushrooms", "I like peppers", and "I think pineapple is the best on pizza" (A). Teacher C encouraged the pupils to express their own taste preferences, such as what they associated with the smell of pancakes, bacon, or blueberry jam. These conversations continued

during the meal, and Teacher C understood and accommodated the conversations with the pupils about their preferences, but she also expressed her own preferences and traditions for eating pancakes, while the pupils showed great satisfaction in eating pancakes with their own choice of accompaniment. Teacher B also asked the pupils one question in the pizza meal: "Which pizza do you think is best, homemade pizza or purchased pizza?" It seemed that the question Teacher B asked the pupils had little effect on them as they continued talking to each other about their taste preferences related to pizza while the teacher continued with her own work, such as cleaning up and putting food away in the kitchen.

Teachers A and C did not manage to engage the pupils as much with their pedagogical questions in the meals where they ate Asian chicken (A) and fish balls (C). The pupils showed little interest in answering the teachers' questions, so the teachers withdrew from the pupil conversations and left it to the pupils to talk and discuss their own chosen hobbies. Teacher C was one of the two teachers who sometimes confirmed the pupils' statements by answering "yes", while teacher A smiled and nodded when a pupil spoke.

During the school lunch, the observations showed that the teachers' pedagogical practice was influenced by the teachers' own perceptions of performing the work tasks, such as correcting student tasks. Additionally, the teachers felt that showing movies while the students ate was appropriate. The teachers had different views on the use of the Smart Board. Teacher A, for example, who used this time for her own work, explained:

> I use the lunch break to finish work deadlines because of the heavy workload. [School lunch] is my opportunity to complete essential tasks while the pupils watch YouTube. Pupils get to choose what music videos they want to watch, but they do not watch music videos every day. We have rules for selecting activities (i.e., deciding what to watch) every weekday.

Teacher B explained that by using the Smart Board during lunch, it was easier to achieve a calmer dining environment and the pupils would thus experience the break as a quiet period. In addition, she pointed out that Smart Boards can also provide a learning opportunity. Teacher B explained:

> My experience is that if the pupils watch films and television, they eat peacefully and quietly. If I read to them, for example, or if the pupils sit and talk freely among themselves, they are more unsettled. That is not pleasant, and the pupils have a break immediately afterwards, so they have the chance to talk a lot together.

Teacher B received questions from the pupils related to the topic of the program that was shown on the Smart Board. It seemed that Teacher B was not very interested in the questions or did not want to be involved in them. She answered the pupils with a yes/no answer, so there was no further communication on the topic.

Teacher C claimed that it was the pupils' wish to watch programs, such as news for children, on the Smart Board during lunch. The observation showed great variation among the pupils as to whether they followed the news or whether they talked quietly with the pupils sitting next to them.

In the interviews with the teachers, the individual teachers pointed out that they had an expectation of the pupils to display good table manners during the FH meal and that during the school lunch, they expected pupils to sit at their desks without disturbing their fellow pupils. Teachers A and C influenced the FH meal by communicating norms related to food and meals as an expression of culture and social belonging. During the school lunch, the teachers explained that their communication about reprimanding unwanted behaviour was not related to food but to the pupils, as presented by Teachers A and B, respectively.

> Now you must behave, not sit there and mess with the food. Eat well, it is not pleasant for those you sit with to watch (FH meal: Teacher A).

> Hush, now you have to be quiet, there's much too much noise and you have to remember to eat (School lunch: Teacher B).

Discussion

The aim of this article was to explore teachers' pedagogical practices in the FH meal and school lunch in Norwegian primary schools within the school's foodscape. Our findings showed a clear difference between teachers' pedagogical practices in the FH meal and the school lunch. In the FH meal, the teachers took on two roles in which the teacher interacted socially with the pupils or

educated the pupils. During the school lunch, the teachers' role can be described as more passive (or withdrawn), where the teachers mainly addressed the pupils when correcting their behaviour.

The results show that the teacher is given a larger room for which to manoeuvre through (regarding the organisational, physical, and social space) in the FH meal compared to during the school lunch. The teachers have greater subject-related influence, greater room to manoeuvre in relation to time, and more influence on financial resources for the FH meal compared to the school lunch. The design of the dining area in the FH meal and the situation where everyone eats the same food that is made at the school facility creates a more varied teacher role. That the teachers varied between two teacher roles (in the FH meal and school lunch) can be interpreted as the teachers perceiving the FH meal as a pedagogical responsibility and thus exerted greater subject-related influence in contrast to the school lunch. The teachers perceived carrying out the school lunch as a supervisory task and the dialogue during the school lunch was more about correcting behaviour compared to subject-related conversation about etiquette, as observed during the FH meal.

According to Mita et al. (2015), teachers play a key role in pupils' learning processes in school. This is in line with what we observed with teachers playing a key role in pedagogical practices for how school meals were conducted. All three teachers emphasised the FH meal more than the school lunch, and the teachers expressed that the FH meal was important for establishing social relationships, such as sitting around a table eating and talking together. Our findings can also be seen in connection with Oljans et al. (2020), who found that meals are an important part of the FH subject. The researchers interviewed a group of teachers who claimed that the meal was important because the pupils sat around a table, ate, and talked to friends. This was something that the teachers in our study also emphasised. At the school lunch, the opposite was observed. Here, the pupils sat at their desks and ate their packed lunches. There was a clear difference between the teachers' pedagogical practices in that the teachers played different roles during the two meals. In the FH meal, the teachers agreed that the pupils talked together and the food they ate was naturally part of the conversations between the teacher and the pupils, unlike the school lunch where the teachers did not encourage that the pupils talked together. The teachers had no pedagogical responsibility for the content or for what the pupils ate for the school lunch. The teachers considered the packed lunches as a parental responsibility, and the lunch was believed to not be part of the responsibility of the teachers' pedagogical practices. The main explanation for these findings may be that teachers perceive the FH meal as part of the FH subject, and therefore, a central part of the responsibility element in the teachers' pedagogical practices. Benn and Carlsson (2014) also showed that it was more common for teachers to view the school lunch as part of the school's health policy and less as a form of education.

The findings of this study indicate that teachers did not take on a specific role, but that they alternated between different roles. In the FH meal, the teachers had more social interactions in conversations with the pupils than in the school lunch. Osowski et al. (2013) found that teachers could take on different positions, such as sociable, educational, and evasive teacher roles in interactions with pupils, and they expressed that the teacher's different roles in interaction with pupils was closely linked to contextual conditions; thus, the roles were decisive based on contextual differences. Our findings are consistent with those of Osowski et al. (2013). The teachers' interactions in discussions with pupils were more prominent in the FH meals than during the school lunch. During the school lunch, the teachers played a more evasive role by not initiating conversations with the pupils. We also saw in the FH meal that Teacher B was more passive in her interaction with the pupils than her colleagues. The results showed that in the meals where the students participated in deciding the content of the menu (compared to meals decided upon by the teachers), the involvement was also greatest; for example, in conversations about taste preferences related to pizza and pancakes (A, B, and C). Here, the teachers failed to create the same commitment regarding the menu, and it seemed as if the teachers changed their practice in interaction with the pupils by participating in conversations with them about their hobbies. Ludvigsen and Scott (2009) found that sociality often ranked above the food their children ate, which coincides with our results as the teachers seemed to prefer communicating about activities instead of the food eaten during the FH meal. Teacher B, however, showed a different practice of not eating with pupils. She claimed that it was important for the pupils to talk to each other during meals, which may be the reason why she did not participate. Jung et al. (2009) found that children enjoyed sitting together and talking while eating without being disturbed by an adult, which can be seen in the context of Teacher B's decision to let pupils talk without disturbing them.

Andersen et al. (2017) have pointed out that teachers use different forms of dialogue with pupils regarding behaviour during meals. They investigated whether the teachers spoke with the pupils, for example, in conversation, or whether they spoke to the pupils about correction, such as behaviour. Our results reveal a similar distinction where Teachers A and C talked with the pupils and held conversations about table manners. When the teachers approached the pupils at the school lunch, the teachers spoke to the pupils in a one-way dialogue, for example, about not disturbing their classmates. The teachers used a loud voice so that all of the pupils in the room could hear them, and it seemed that the intention was to correct the pupils more than to engage in a learning conversation about sitting nicely.

Our results showed that there are several more elements that can be understood as limiting opportunities for social interaction with pupils in the school lunch compared to that in the FH meal, which may be justified by a school culture. We also saw differences between the three teachers' pedagogical practices, for example, in that all teachers used the Smart Board in the school lunch, as opposed to in the FH meal. This can be perceived as part of the school's culture. This is in line with the research conducted by Lalli (2020), who found that the school culture influenced teachers' behaviours, that is, that the schools were characterised by common perceptions in this area. Our findings are also consistent with that of Fossgard et al. (2019), who found that many teachers chose to use TV programs and films to keep pupils calm in the classroom during school lunch and that both teachers and pupils mainly segmented rules and restrictions to the school lunch. Studies by Beinert, Palojoki, et al. (2020) and Lindblom et al. (2016) found that the relationship between the time set aside in the timetable and the many tasks in the FH subject was a barrier for teachers. Our findings with Teacher B are consistent with this finding. We also saw a connection between the three teachers who were influenced in their pedagogical practice during lunch by the number of tasks required within the given time frame. In addition, the given time frame, allocated locally, was shorter for all schools (see Table 1) compared to the national recommendation of 20 minutes. (Norwegian Directorate of Health, 2015). The FH curriculum (Ministry of Education and Research, 2006) does not specifically mention meals. The teachers were thus free to organise meals within the teaching lesson without time as an indirect limiting factor. Time allocation can be understood as limiting the opportunity for social interaction with pupils at school lunches because the lunch time places a demand on the teachers with its many imposed tasks.

Within the three dimensions of institutional foodscapes, there was a connection between social interaction, duration of meals, and responsibility. We observed a common pattern between influences in the teachers' pedagogical practices in social interactions with the pupils and a greater variation in the roles the teachers took in the FH meal than during the school lunch. During the school lunch, the teachers' pedagogical practices were almost the same. It seemed that the short period of time limited the teachers' opportunity for social interaction and the teachers chose a more withdrawn role to ensure that the pupils could eat their packed lunches. Our findings can be related to those of Priestley et al. (2012), who found that teachers behaved differently in different contexts and that these differences were based on teachers' prior understanding and experience. Our findings indicate that teachers' different behaviours are based on a pre-understanding. The school lunch was more integrated in the schools' daily routines and the fact that all the teachers carried it out in almost the same way can be an expression of a common preconception of how school lunches should be conducted. In the FH meal, there was a greater variation between teachers' pedagogical practices. This indicated that the teachers' experience affected the pedagogical practices to a greater extent during the FH meal than the teachers' pre-understanding. This finding that the teachers had different experiences that affect the content of teachers' pedagogical practice is also confirmed in the findings of Veka et al. (2018) in a previous study on the content of teachers' pedagogical practice. The results also showed that responsibility was crucial for how teachers' pedagogical practices affected the two meals differently. Hovdelien (2010) and Møller and Presthus (2006) claim that Norwegian head teachers and teachers do not interfere with each other's cases. This is in line with our observations and interview findings that the individual teacher is responsible for carrying out the two meals and that the head teachers do not interfere in how the teachers carry out the two meals at school.

Keating (2018) has pointed out that the external frames are the overall frames at the school level, and the internal frames may be, for example, the internal practices in schools. This study showed that external frames, such as the two national guidelines (Ministry of Education and Research, 2006; Norwegian Directorate of Health, 2015) did not affect teachers' pedagogical practices during the two

meals. Thus, it seemed that the internal frames of teachers' practices were governed by influencing different teachers' pedagogical practices during meals. The differences emerged in the duration of meals and the different roles the teachers took on during meals. This finding may be an expression of the practice for the collegial community. All schools conducted the school lunch in almost the same way, while in the FH meal, there were greater variations between the teacher roles. This can be explained by the fact that a collegial community affects school lunches more than FH meals. In result, in this study it appeared to lack a collegial community because experience influenced teachers' pedagogical practices during meals.

Strengths and weaknesses

The methods were adequately chosen. The empirical data were collected in a short period of time, and the analytical triangulation included observations and individual interviews with teachers and head teachers. The observations and individual interviews with the teachers and head teachers ensured an understanding of how these two meals were perceived and carried out in the three schools for this study. The number of schools, observations (such as two of the FH meals and one of the school lunches) at each school, as well as informants provided important insight. The three school principals were limited; thus, this is a weakness in the study. A larger sample size of different schools would have made it possible to uncover more differentiated variations between teachers' pedagogical practices in Norwegian primary schools within the schools' foodscapes.

Conclusion

The article has brought into focus how teachers' pedagogical practices in Norwegian primary schools are affected by two food landscapes: 1) the FH meal and 2) the school lunch. The results showed a clear difference between the teachers' pedagogical practices in the FH meal versus school lunch. In the FH meal, the teachers held two roles, as such, they communicated socially with the students and provided education. During the school lunch, however, the role of the teacher became more passive in which teachers mainly addressed the students when correcting behaviour. This difference could be explained by the fact that the physical space may have affected the meal framework. The findings can also be explained by the teachers' perception of the FH meal as the core of their profession as an educator, while the teacher's presence in the school lunch was perceived as a supervisory role, since the school lunch in Norway does not have a clear pedagogical purpose.

The results of the study have contributed new research knowledge about teachers' different pedagogical practices in two meal contexts in the school setting, which has not been previously investigated. The results of this study highlight that a clearer policy for meals in school should be developed where there is an emphasis on importance of meals and the role of the teacher as pedagogue in facilitating the pupils' development of health-promoting eating habits and social competence during meal time.

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