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# IFHE

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# International Journal of Home Economics

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## Special Issue: Rapid response and lockdown learnings—Home economics, the global pandemic 2020, and beyond

On 2 June 2020—at the time of writing this Call for Papers—there have been: 6,361,612 Coronavirus (COVID-19) cases with 377,150 deaths, and 2,900,072 recoveries recorded in 216 countries (Worldometer, 2020). This data is regarded as a very modest estimation of the actual number of cases since the outbreak began in Wuhan, China, in December 2019.

The effects of the pandemic have been felt globally. Typical responses to control the impact and spread of the virus have included closure of shops, transport systems and borders; hand washing campaigns; modification to schooling; home confinement; and new social and physical distancing boundaries. Regional approaches have differed greatly, as has the goal, such as “flattening the curve”, while others have made policy decisions with a view to achieve “herd immunity”, and in some cases, confusing mixed messages with little specific or sustained policy implementation. The true consequences of COVID-19 may not be known for years to come.

During an event such as this unprecedented pandemic, it is an important moment to capture current reactions, responses and research. According to Harris & Dakin (2020), it is imperative to ensure rapid innovation is underpinned by quality principles and features careful evaluation to enable “organisations to capture and evaluate these learnings: to identify what has worked, what has utility going forward, and what could or should be discarded” (p.3). Phases of response are typically: crisis, adaptation, and opportunity.

Using these concepts as a lens for framing contributions, the IJHE Editor, Professor Donna Pendergast, along with guest co-editor Dr Jay Deagon, welcome contributions from members and non-members about all aspects of home economics and consumer studies. All papers will be subject to a full peer review process consistent with the usual requirements for publication in IJHE. The focus of this Special Issue is: Rapid response and lockdown learnings: Home economics, the global pandemic 2020, and beyond. It will particularly focus on innovation and good practice, supported by an evidence base, in one or more of the phases of response—crisis, adaptation and opportunity—in addressing issues of relevance to the field, including, but not limited to:

- Food and nutrition—access, choice, affordability, quality, kitchen gardens and safety of food
- Equity and access, opportunities and barriers
- Home economics education
- Mental health and wellbeing for individuals, families and communities
- Habits and habitats—behaviour and attitude change

In the first instance, please send an intention to submit a paper in the form of an abstract of 150 words plus 50 word biographies of each author by 1 December 2020 to the Editor. Please send complete manuscripts for peer review for the IJHE Special Issue to Professor Donna Pendergast, Editor e-mail at [intjournalhomeeconomics@gmail.com](mailto:intjournalhomeeconomics@gmail.com) by 31 January 2021.

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## The state of learning activities in teaching Home Economics: A cross sectional study in Norwegian schools

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### Abstract

*Food and Health (FH) is an important subject in Norwegian schools, but little is known about how this subject is being taught. The aim of this study was to examine the use of exploratory/experimental activities, flipped classroom, activities where students are encouraged to use their senses and digital tools in FH. We further wanted to explore which factors teachers report as barriers and promoters to teaching and learning among students in this subject.*

*An anonymous online questionnaire was distributed by email to all primary and lower secondary schools in Norway (n=2821), and all FH teachers were invited to participate.*

*A total of 1170 FH teachers completed the questionnaire, 85% were women. Most teachers (71%) reported using learning activities where students were encouraged to use their senses, followed by exploratory/experimental activities (65%), digital tools (56%) and flipped classroom (14%). Lack of equipment, non-optimal premises and economic factors were most important barriers to good teaching in FH. All teachers highlighted engaged teachers as most important for learning.*

*Food and health teachers use of the different learning activities investigated in this study varied. Engaged teachers are important for learning, whereas lack of equipment, non-optimal premises and economic factors are barriers to good teaching.*

**KEYWORDS:** FOOD AND HEALTH, HOME ECONOMICS, SCHOOL, TEACHERS, LEARNING ACTIVITIES, NORWAY

### Introduction

Major health challenges such as obesity and non-communicable diseases are preventable, and an unbalanced diet is the leading cause of several of these challenges (GBD Risk Factors Collaborators, 2016). Because of this, there is an increased willingness and desire to strengthen the education related to food and health in both Norway, and other countries (Lichtenstein & Ludwig, 2010; Ministry of Health and Care Services, 2013; Slater, 2013).

In Norwegian primary schools (grades 1-7) and lower secondary schools (grades 8-10), Food and Health (FH) is a compulsory subject offered mainly in 6th and 9th grade (Directorate for Education and Training, 2006). FH has evolved from the traditional Home Economics subject, which is the terminology most often used about similar subjects around the world. However, the term FH will be used here onwards since it is specific for the Norwegian school system. The FH subject consists of three main topic areas; Food and lifestyle, Food and culture and Food and consumption, each with its own competence aims (Directorate for Education and Training, 2006). In addition, the five basic skills; oral skills, writing skills, being able to read, numeracy skills and digital literacy are all integrated in the competence aims.

The education in FH aims to contribute in promoting a healthy lifestyle, gain insight and acquire skills in critically choosing and reflecting on food and meals and stimulate the students to prepare food (Directorate for Education and Training, 2006). Despite its important role in a public health

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perspective, FH is the smallest mandatory subject in Norwegian schools with a total of 114 teaching hours in grade 1-7 and 83 teaching hours in grade 8-10 (Directorate for Education and Training, 2006), which constitutes 2.5% of the total teaching hours.

Home Economics courses are taught around the world under different terms, content and focus areas. All the Nordic countries have subjects comparable to FH. The Danish Food Knowledge, the Swedish Home and Consumer Studies and the Finnish Home Economics, are also small in terms of the hours allocated, but have the advantage of being compulsory and share common goal of introducing students to theory and practice relating to cooking. Research regarding this subject is still scarce. Lindblom, Arreman & Hörnell (2013) conducted a national survey of the Swedish Home and Consumer Studies, exploring contextual factors like teacher competence, quality of premises and equipment. They found that 23% of the teachers in Home and Consumer Studies lack formal subject specific qualification and that the quality of premises and equipment varied to a great extent. Veka et al. (2018) observed three FH classes in Norway, and saw that cooking was the most dominating part of the subject. The recipes were central when planning and conducting the teaching and they therefore call the recipes the “hidden curriculum”. Øvrebø (2019) interviewed Norwegian FH teachers and found that economical resources, time and collegial support were important issues related to the realization of the subject. The subject’s timetable set limitations to what they could do as teachers, and practical work relating to cooking was dominant.

Traditionally, FH lessons consist of practical work including cooking (Veka et al., 2018). The teacher introduces the theory in dialogue with the students before or after the practical work, or the theory is given as home assignments (Holthe & Wilhelmsen, 2009). When looking into this structure and comparing it to the aim of the subject (in context with the core curriculum), Holte and Wilhelmsen argue that what seems like a common challenge is to nourish the children’s creative abilities and foster critical thinking. Another challenge described by the same authors is teaching children decision-making processes and motivating them to choose a healthy lifestyle.

Learning activities where the students are performing tasks like discussing or solving problems and reflecting about what they are doing, fosters what is called active learning (Bonwell & Eison, 1991). When investigating Home Economics and food literacy, Pendergast & Dewhurst (2012) argue that students through active learning can come to a deeper understanding of the issues involved and that it can increase their motivation and enthusiasm. Activities like exploratory/experimental activities, sensory tasks, the use of flipped classroom and digital tools can all facilitate active learning.

In a flipped classroom approach, students usually watch short videos or recorded lectures at home before class, and use in-class time afterwards for applying the material through problem solving, peer interaction or other active learning activities (Bergmann & Sams, 2012). The idea is to free time from teaching and lecturing in the class so that the children get more time to work actively with the syllabus they were introduced to at home. Flipped classroom has undergone much research in recent years, especially in higher education (Akçayır & Akçayır, 2018; Baepler et al., 2014; Calimeris & Sauer, 2015; Giannakos et al., 2014; O’Flaherty & Phillips, 2015) and has shown to be a good method regarding students learning performance. Nonetheless, research on the use of flipped classroom approach in FH classes in Norwegian primary and lower secondary school is lacking. It is also uncertain to which extent teachers in FH use digital tools in their teaching. This is relevant to know on the basis of the focus on digitalisation and digital competence seen in schools today (Ministry of Education and Research, 2017; OECD, 2015) and the basic skill related to digital literacy in FH, discussed earlier. Digital literacy can be developed by actively using digital tools in the school setting. Digital literacy occurs at different levels, from being able to use software and technical equipment, to search for literature and be able to interpret and evaluate information from various digital sources critically (Knobel & Lankshear, 2006; Ministry of Education and Research, 2016). Future, renewal and digitization strategy for the primary and secondary education and training (Ministry of Education and Research, 2017) states that one-fourth of Norwegian 9th graders have such poor digital skills that they will have difficulties in school and working life. It might therefore be relevant to include the use of digital tools across all subject, including FH.

In the fall of 2020, the educational reform in Norway, which was introduced in 2006, will undergo a renewal in order to meet the demands of future competence in working life and in society. An important principle for the new curricula will be that the students should be given the opportunity to study the subjects in depth, to see links between disciplines and to develop the ability to reflect and think critically.



To our knowledge, no nation-wide survey with the aim to investigate the use of different learning activities and teachers' opinions regarding learning in FH has been conducted in Norway.

There are several reasons for exploring the use of these four activities in FH. Research has shown that many FH classes is centred around cooking and following recipes, with little emphasis on exploring (Veka et al., 2018). Leer & Wistoft (2018) outlines the importance of using taste education as a resource for learning and that recipes should be viewed as a basis for improvisation, not as a fixed manual. Øvrebø found low levels of nutritional knowledge among students in Norway and suggests to integrate theory and practice more, by using a variety of reaching methods (Øvrebø, 2014). Holthe & Wilhelmsen (2009) also highlights the difficulties in learning the students to choose a healthy lifestyle, in addition to issues with critical thinking and creativity. The increased focus on digitalization in schools (Ministry of Education and Research, 2017) makes it interesting to examine to which extend and why this is used in FH classes. Finally, the focus on deep-learning, which flipped classroom and other active learning tasks like exploratory/experimental activities or sensory tasks can facilitate, is prioritized in the renewal of the school curriculum (Ministry of Education and Research, 2015). It is therefore of interest to investigate this, in order to contribute in development of the subject in the future.

The aim of this study was to examine the frequency of use of the following four different learning activities among FH teachers in Norway; flipped classroom, digital tools, exploratory/experimental activities, and activities where students are encouraged to use their senses. We further wanted to explore the reasons why they were used, and whether there were any learning activities the FH teachers wanted to use more often. Finally, the study aimed to investigate potential factors important for learning in FH and barriers for good teaching in FH.

The study is approved by the Norwegian Centre for Research Data (ref.59097).

## Method

The current study is a cross sectional, questionnaire study (Polit & Beck, 2010). In April 2018, a short introductory email containing a link to the project's home page ([www.uia.no/lifelab](http://www.uia.no/lifelab)) was distributed to all primary schools and lower secondary schools (n=2821) in Norway. The web page contained the online questionnaire and all necessary information about the study. The headmaster of each school was asked to redistribute this email to their FH teachers, which was the target group for this survey. An invitation to participate in the survey was also published on two Facebook pages relevant for teachers in FH, in addition to a message in the journal published by The Norwegian Association for teachers in FH. Two reminders to answer the questionnaire were sent within five weeks after the initial email distribution and the questionnaire was closed for participants approximately two weeks after the last reminder. In total, 1170 FH teachers completed the questionnaire. FH teachers will onwards in this article be referred to as "teachers".

### The questionnaire

The anonymous, online questionnaire was made using SurveyXact 8.2. The teachers gave their consent by answering the questionnaire. The questionnaire contained 25 questions regarding demographics, general structure of the FH subject, learning in FH, learning activities and the need for a renewal of the subject. The questions were developed and pre-tested in collaboration with colleagues at the University of Agder at the Faculty of Health and Sports Science, and with inspiration from a survey conducted by the University of South- Eastern Norway (unpublished data).

This paper presents the findings from 12 of the questions in the questionnaire with focus on the use of different learning activities and factors important for learning.

### Participant characteristics

The age categories in the questionnaire were: 18-21, 22-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60 and >60. These were later merged and recoded into the categories 18-30, 31-40, 41-50, 51-60 and >60 (Table 1). The same was done with the question regarding years of working as a FH teacher. The response alternatives in the questionnaire were: <1 year, 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years and 26 years or longer, which were also recoded and merged into ≤5 years, 6-10 years and ≥11 years (Table 1).



The question regarding educational background in FH, consisted originally of 11 alternatives in the questionnaire. These were: “general teacher without FH in the portfolio of subjects”, “general teacher with 15 ECTS in FH”, “general teacher with 30 ECTS in FH”, “general teacher with 60 ECTS in FH”, “half unit (30 ECTS) in FH without teacher education”, “year program (60 ECTS) in FH without teacher education”, “Home Economics teacher”, “chef”, “restaurant and food processing (high school)”, “unskilled/assistant” and “other”. Some of the answers in the open-ended “other” alternative were manually moved into one of the other categories based on what was considered appropriate depending on what the teachers wrote (the details can be obtained on request). “General teacher education” was renamed “teacher education” and now includes all the different teacher educational backgrounds. Thereafter, some of the variables were recoded and merged into fewer categories: “general teacher without FH in the portfolio of subjects” was renamed “teacher education without FH competence” and “teacher educated with FH competence” now includes “general teacher with 15 ECTS in FH”, “general teacher with 30 ECTS in FH”, “general teacher with  $\geq 60$  ECTS in FH” and “Home Economics teacher”. “FH competence without teacher education” now includes “half unit (30 ECTS) in FH without teacher education” and “year program (60 ECTS) in FH without teacher education”. “Chef” and “Restaurant and food processing” were merged into one, the same with “other” and “unskilled/assistant”. Hence, we ended up with five educational categories (Table 1).

### Learning activities

Regarding the use of learning activities, the questionnaire focused on the use of flipped classroom, digital tools, exploratory/experimental activities, and activities where students are encouraged to use their senses. Question 1 (Q1) was: “Which of the following learning activities do you use in your FH-teaching? You can select multiple response options” the teachers could select among the four methods described or choose “don’t use any of the methods”. Q2 was: “On average, how often do you use the following learning activities?” response alternatives were: “every FH class”, “1-2 times per month”, “less than once per month”, and “never”. The activities were again presented, and the teachers connected each activity to each of the response alternatives individually (matrix question). Q3 was: “Is there any of these learning activities you would like to use more often? You can select multiple response options”. The teachers could then select among the four learning activities. The last question was: “Why do you use the following learning activities?”. The activities were again presented, and the teachers connected each activity to each of the response alternatives individually (matrix question). The response alternatives were: “the children request it”, “to promote learning among children”, “to promote motivation among children”, “to promote creativity among children”, “for variation”, “to promote cooperation among children” and “other”.

### Important factors for learning and teaching in FH

The teachers further responded to a five-point Likert scale to which factors they considered as important barriers to good teaching and promoters of learning in FH. The response options were “very important”, “important”, “do not know”, “not important” and “not important at all” and the categories “important” and “very important” were merged. Regarding barriers, the alternatives were: “lack of equipment”, “non-optimal premises”, “economic factors”, “few hours for the subject”, “collaboration with leaders”, “timetable-issues”, “lack of formally qualified teachers”, “the status of the subject” and “problematic working relations with colleagues” (Table 3). For important factors promoting learning, the alternatives were: “engaged teachers”, “good premises for teaching”, “A lot of practical cooking”, “motivated children”, “combination of practical and theoretical teaching”, “varied teaching methods”, “good economy”, “formally qualified teachers” and “A lot of theoretical teaching” (Table 4). The alternatives (factors) were selected in collaborations with all authors, and particularly with those who had experience working as FH teachers, as they have first-hand experience of which factors would be relevant to examine.

### Data analysis

IBM SPSS Statistics 24 was used to analyse the data. Results are presented as frequency with percentages and p-value using descriptive statistics and cross tabulation (Chi-square). Statistical significance was set at  $p \leq .05$ . Percentages have been rounded off to whole numbers.

## Results

1170 teachers completed the whole questionnaire of whom 85% were women and most were aged 31-40 (Table 1). Some participants only partly completed the questionnaire, and characteristics of those who completely and partly completed the questionnaire are presented in Table 1.

Table 1. Participant characteristics between those who completed the questionnaire ( $n = 1170$ ) and those who partly completed ( $n = 222$ ). LifeLab Food and Health Cross Sectional Study

	Completed		Partly completed		Total		p-value
Gender	n	%	n	%	n	%	
Male	147	79	40	21	187	13	
Female	1023	85	182	15	1205	87	
<b>Total</b>	<b>1170</b>	<b>84</b>	<b>222</b>	<b>16</b>	<b>1392</b>		<b>0.029</b>
	Completed		Partly completed		Total		p-value
Age	n	%	n	%	n	%	
18-30	148	87	22	13	170	12	
31-40	261	91	27	9	288	21	
41-50	346	83	72	17	418	30	
51-60	293	86	48	14	341	25	
>60	122	72	47	28	169	12	
<b>Total</b>	<b>1170</b>	<b>84</b>	<b>216</b>	<b>16</b>	<b>1386</b>		<b>≤.001</b>
	Completed		Partly completed		Total		p-value
Education	n	%	n	%	n	%	
Teacher education with FH competence	512	88	69	12	581	43	
Teacher education without FH competence	409	87	61	13	470	35	
FH competence without teacher education	65	80	16	20	81	6	
Chef or Restaurant and food processing	64	93	5	7	69	5	
Unskilled/assistant/other	120	85	21	15	141	11	
<b>Total</b>	<b>1170</b>	<b>87</b>	<b>172</b>	<b>13</b>	<b>1342</b>		<b>0.17</b>
	Completed		Partly completed		Total		p-value
Years working as FH teacher	n	%	n	%	n	%	
≤5 years	614	89	79	11	693	52	
6-15 years	352	89	43	11	395	30	
≥16 years	204	85	35	15	239	18	
<b>Total</b>	<b>1170</b>	<b>88</b>	<b>157</b>	<b>12</b>	<b>1327</b>		<b>0.321</b>
	Completed		Partly completed		Total		p-value
Time spent on practical cooking	n	%	n	%	n	%	
<30%	17	81	4	19	21	2	
30-50%	32	80	8	20	40	3	
50-70%	163	92	15	8	178	14	
70-80%	361	88	49	12	410	31	
80-90%	380	91	38	9	418	32	
90-100%	217	89	26	11	243	19	
<b>Total</b>	<b>1170</b>	<b>89</b>	<b>140</b>	<b>11</b>	<b>1310</b>		<b>0.16</b>

Cross tabulation and Pearson Chi-square were used to analyse participant characteristics.

Significant level was set at  $\leq .05$ . The numbers related to "Completed" and "partly completed" is presented to compare the distribution of answers in both groups.

In total, 43% of the teachers were formally qualified FH teachers. Most teachers (52%), had less than five years' experience in teaching FH, and most of them spent around 80% of their time in class on practical cooking. We present findings from the once who completed the questionnaire and the once who partly completed the questionnaire to see if there were any differences between the groups.

We found that there were significantly more women than men who completed the questionnaire ( $p=.029$ ). There were also significantly more teachers in the older age groups who partly completed ( $p=\leq.001$ ). We found no difference in experience of working as FH teacher between the two groups ( $p=.321$ ), neither in time spent on practical cooking ( $p=.160$ ), nor in educational background ( $p=.170$ ).

### The use of different learning activities

Of the four activities investigated, most teachers (71%) reported using activities where children were encouraged to use their senses when teaching FH (Table 2). This was followed by exploratory/experimental activities (65%), digital tools (56%) and flipped classroom (14%). When asked which of the activities they wanted to use more, most teachers (74%) reported flipped classroom, followed by exploratory/experimental learning methods (71%). The alternative with fewest responses (50%) was to use more digital tools in their teaching.

Table 2. Use of different learning activities (n=1170). LifeLab Food and Health Cross Sectional Study

Learning activities and frequency	Use of learning activities n (%) <sup>a</sup>	Wanting to use more of the activity n (%) <sup>†</sup>
	n = 1170	n = 1170
Exploratory/experimental <sup>a</sup>	762 (65)	834 (71)
Frequency of use <sup>b</sup>		
Every lesson	186 (16)	
1-2 times per month	397 (34)	
Less than once per month	468 (40)	
Never	119 (10)	
Flipped classroom <sup>a</sup>	164 (14)	860 (74)
Frequency of use <sup>b</sup>		
Every lesson	35 (3)	
1-2 times per month	94 (8)	
Less than once per month	627 (54)	
Never	414 (35)	
Use of senses <sup>a</sup>	833 (71)	790 (68)
Frequency of use <sup>b</sup>		
Every lesson	513 (44)	
1-2 times per month	356 (30)	
Less than once per month	230 (20)	
Never	71 (6)	
Digital tools <sup>a</sup>	654 (56)	584 (50)
Frequency of use <sup>b</sup>		
Every lesson	126 (11)	
1-2 times per month	414 (35)	
Less than once per month	528 (45)	
Never	102 (9)	

#### Descriptive statistics and frequency analyses were used.

<sup>a</sup> Answer to question: "Do you use this activity?"

<sup>b</sup> Answer to question: "How often do you use this activity?"

<sup>†</sup> Answer to question: "Are there any of these learning activities you would like to use more often?"

Note: since the questions in this table were asked as 3 independent questions, the response rates may vary.

Regarding the use of exploratory/experimental activities and activities where the students are encouraged to use their senses, most teachers highlighted students learning outcome as the most important reason for using them (Figure 1). Most teachers used digital tools and flipped classroom for variation purposes. To promote student motivation and creativity, most teachers reported using activities where students are encouraged to use their senses and exploratory/experimental methods. Very few used any of the methods based upon students request. To promote cooperation, most teachers used exploratory/experimental methods, and flipped classroom. Few teachers used digital tools to promote cooperation or creativity.

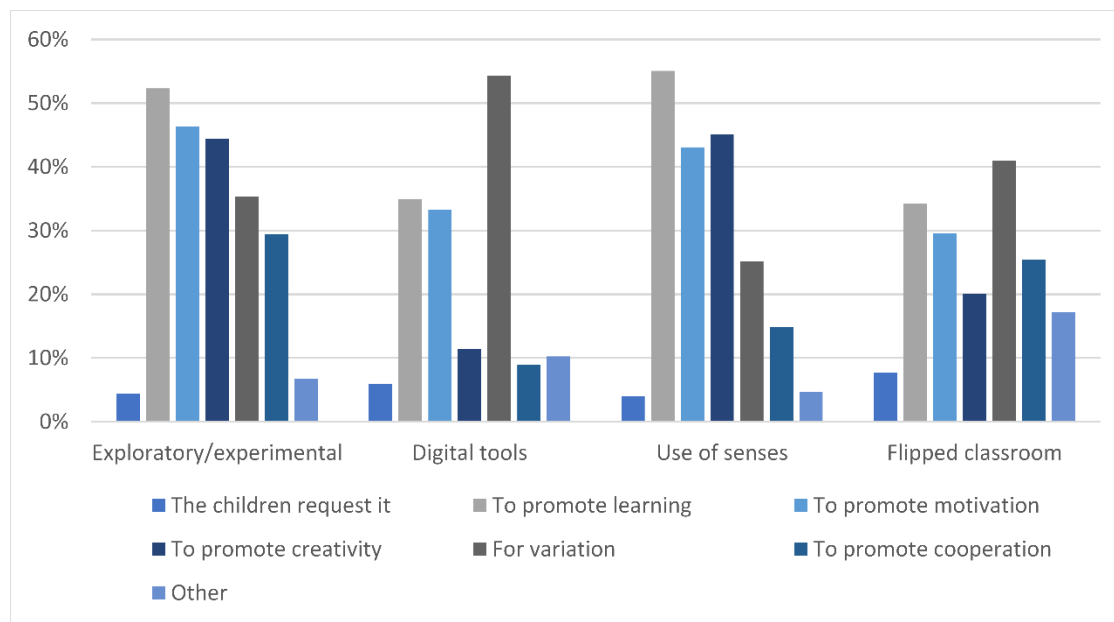


Figure 1. Reasons for using the different learning activities. Percent of answers (n=1170). Teachers were able to select multiple reasons. LifeLab Food and Health Cross Sectional Study

### Learning and teaching in FH

Among the factors being barriers to good teaching in FH, lack of equipment, non-optimal premises and economic factors were those mentioned as the three most important factors. Of the suggested factors, problems with colleagues were ranked as least important of the barriers (67%) (Table 3).

Table 3. Proportion of teachers reporting the following as important\* barriers to good teaching in Food and Health. N (%) LifeLab Food and Health Cross Sectional Study

Barriers to good teaching	Number (%)
<i>n</i> = 1170	
Lack of equipment	1130 (97)
Non-optimal premises	1125 (96)
Economic factors	1095 (94)
Few hours for the subject	1061 (91)
Collaboration with leaders	1017 (87)
Timetable-issues	984 (84)
Lack of formally qualified teachers	900 (77)
The status of the subject	867 (74)
Problematic working relations with colleagues	782 (67)

\*Important: includes the response options “very important” and “important”

Regarding important factors for learning, engaged teachers were important for all participants (Table 4). Furthermore, 99% thought that a lot of practical cooking and having the necessary equipment was important for the promotion of learning in the subject, in addition to motivated students (98%) and good premises for teaching (98%).

**Table 4.** Proportion of teachers reporting the following as important\* factors promoting learning in Food and Health. N (%) LifeLab Food and Health Cross Sectional Study

Factors promoting learning	Number (%)
	Total: 1170
Engaged teachers	1170 (100)
Necessary equipment	1158 (99)
A lot of practical cooking	1157 (99)
Motivated students	1150 (98)
Good premises for teaching	1147 (98)
Combination of practical and theoretical teaching	1108 (95)
Good economy	1099 (94)
Varied learning activities	1092 (93)
Formally qualified teachers	920 (79)
A lot of theoretical teaching	602 (51)

\*Important: includes "very important" and "important"

## Discussion

To our knowledge, this is the first study in Norway exploring FH teachers' use of different learning activities and what factors they consider influence learning and teaching in the subject.

Of the four learning activities investigated in this study, most teachers use activities where students are encouraged to use their senses (71%). This is not surprising since most of the lesson time is spent on cooking. Furthermore, 44% of the teachers included this in every lesson, indicating that the students are being encouraged to taste, smell or visually examine their food during preparation. However, we do not know how the teachers are working with this, which could be interesting to investigate further.

Few teachers (14%) used a flipped classroom approach in their FH teaching, and since 91% (Table 3) of the teachers found few hours for the subject to be a barrier to learning, applying a flipped classroom approach could be valuable, if they experience lack of time. Students could watch short videos at home on a special food preparation technique, how to prepare a dish or about the nutritional value of different food items, followed by practical work in class. Interestingly, flipped classroom is the method most teachers wanted to use more often which may indicate that they acknowledge flipped classroom as a good way to vary their teaching and to promote learning, which were reported as the two most important reasons for using it. Many teachers also reported that they use flipped classroom to promote student motivation and cooperation which is likely to be the outcome if the teachers also use active learning techniques in class. Furthermore, among the different activities, flipped classroom was the activity most students requested, although not by many.

One of the competence aims for 10th grade is to use digital tools to evaluate energy and nutritional content in food and beverages and make use of this in cooking (Directorate for Education and Training, 2006). Accordingly, all teachers should use digital tools in their teaching during the FH lessons in 9th grade but according to our study, only 56% of the teachers do, and these numbers also includes teachers in 6th grade. As with flipped classroom, most teachers report using digital tools less than once per month (Table 2). The main reason for using digital tools are for variation purposes, but it is not known in what way they use digital tools, which digital tools they use or in what way it promotes variation. The survey conducted by Lindblom et al (2013) also found that the use of computers in Home and Consumer Studies was low and argues that it could be useful to implement

computer use as there are useful webpages that could compensate for the limited access of textbooks in the subject.

As mentioned in the introduction, the aim of FH is to promote insight and skills in critically choosing and reflecting on different types of food and meals (Directorate for Education and Training, 2006). Through the internet, children and adolescents get access to huge amounts of information about what a healthy diet looks like, what is unhealthy, and so forth. It is therefore important that they get taught how to critically appraise all this information, and the FH classes seems like a relevant arena for activities that can foster food literacy (Pendergast & Dewhurst, 2012; Vaitkeviciute et al., 2014; World Health Organization, 2018) cf. the aim of this subject. The curriculum for FH states that using digital tools in FH would make it possible to search for information, compare and evaluate nutritional content and present academic content (Directorate for Education and Training, 2006).

Most teachers (65%) use exploratory/experimental activities in their FH teaching (Table 2), and they use these methods mostly because they believe these methods can promote learning (Figure 1). In the survey, there were no examples of what was meant by exploratory/experimental methods. Therefore, it is possible that the participants interpreted the question differently. Some might consider cooking itself as an exploratory/experimental activity, others might think it is about having a scientific approach to cooking or food items. Experimenting in FH can be understood as working with different experiments regarding smell and taste (sensory tasks), inventing your own products from simple ingredients, or examining what happens with an egg as it is being boiled. The traditional way of organising the FH lectures discussed earlier may inhibit the student's creativity and experimentation in cooking. It is worth noticing that teachers use these activities, and other activities where students are encouraged to use their senses, mostly because they believe it promotes learning. As can be seen in Figure 1, the teachers believe exploratory/experimental activities facilitate cooperation, motivation and creativity to a great degree, which are important elements in deep learning (Fullan et al., 2018). In total, 71% of the teachers also wanted to use more exploratory/experimental methods, indicating that they believe these are good activities regarding student learning outcome. In the school of the future, being able to explore and create is presented as one of four areas of expertise, and critical thinking and problem solving are subsections of this (Ministry of Education and Research, 2015).

Most teachers use approximately 80% of the allocated time on cooking (Table 1). This shows us that the practical cooking part stands strong in this subject, and that it is highly prioritized, supported by the studies conducted by Øvrebø (2019) and Veka et al (2018). This may explain the low frequency use of the various other activities, since parts of the lesson also need to be used to introduce the present meal, instructions, eating, and cleaning up afterwards.

Our study shows that lack of equipment, non-optimal premises and economic factors were the three most frequently reported barriers for good teaching (Table 3). These factors are strongly linked to practical cooking, indicating again that cooking is the most dominating part of the FH subject. Most teachers ticked off that 'few hours for the subject' was a barrier, which also may explain the marginal use of the various activities and the high level of teachers wanting to use more of these methods. Sufficient economical resources and resources like time and collegial support was reported as important factors for realization of the subject among FH teachers interviewed by Øvrebø (2019). These findings are in accordance with our findings related to factors affecting learning and teaching.

All teachers reported 'engaged teachers' as the most important factor for learning (Table 4), which correspond to Lyngsnes & Rismark (2007) who state that teacher knowledge, expectations, creativity and effort is the most crucial determinant of the learning outcome and the experiences the students are left with. This is also supported by Hattie who highlights the importance of what he calls the "expert teachers" (Hattie, 2014, Chapter 3).

The latest hearing from The Norwegian Directorate for Education and Training (2019) regarding the new curricula in FH, highlights several things: more systematics in cooking, a reduced focus on recipes and that the subject will facilitate exploring, using senses and experiencing joy with food and the social part of the meal. Some of these are highly relevant in relation to our findings. Our findings regarding the use of senses and exploring adds to the knowledge of to which extend this is done today, showing that this is something that needs to be emphasized more in the future teaching in FH, if teachers shall meet the upcoming requirements of the subject. The use of a flipped classroom

approach could save time for the teachers on instruction, so the students get more time to work themselves. This would also facilitate an opportunity to include digital tools in their teaching.

### **Strengths and limitations of the study**

The biggest strength of this study is the large number of participants who completed the whole questionnaire (n=1170) and its broad content. The questionnaire was anonymous, short (only 10-15 min response time) and contained only 25 questions. This may have been important factors contributing to the relatively high response rate (45.5% of the recipients completed or partly completed the questionnaire), considering that we did not have direct contact with the teachers. In addition to assess frequency of use of different learning activities, we also investigated the reasons for using them. The questionnaire was piloted among colleagues at the Department of Nutrition and Public Health who had experience with teaching FH in schools.

This study also has limitations. First, not all teachers completed the whole questionnaire. Second, we only investigated four different activities and most response alternatives were closed-ended. In addition, there is always a chance that the teachers misinterpreted the questions and response alternatives (Moy & Murphy, 2016). The teachers were obligated to answer one of the given alternatives before they could move to the next question, although they might have felt it was not completely correct. Some questions should have been limited to those who had responded positively on the previous (for example reasons for using the different activities). The teachers who did not use any of the methods had to select "other" to this question and type in their response to continue the questionnaire. When looking at their responses afterwards, many teachers wrote that they do not use the methods. Because of this, it would be better if the teachers reporting to never use the methods were not given the question about why they use it. Third, the response alternatives in the questions relating to barriers to good teaching and factors important for learning could have been more different to address different aspects more specific to each. The question regarding barriers to good teaching were also not a question asking to rate the importance of the different factors, even though the response alternatives were outlined so. Finally, all questionnaires are prone to errors relating to the memory of the teachers which may affect the accuracy of the responses.

### **Conclusion**

In this paper, we have discussed the use of digital tools, flipped classroom, exploratory/experimental activities and activities where students are encouraged to use their senses in the FH subject. We found that the use of these four activities varied and that sensory tasks were the most frequently used (71%). This was followed by exploratory/experimental activities (65%), digital tools (56%) and flipped classroom (14%). Incorporating and working pedagogically with these activities in teaching FH could be positive both in terms of increased learning outcome and meeting the demands of the upcoming renewal of the subject.

According to the FH teachers, engaged teachers are important for learning, while lack of equipment, non-optimal premises and economic factors were barriers for good teaching. Knowledge about these barriers are valuable in advocating for change with policy makers, both at the school level and nationally. School leaders across the country could benefit from identifying to which extent their teachers experience these barriers, in order to make necessary improvements. In the future, qualitative methods like interviewing FH teachers, could add to the understanding and give a more in depth and holistic picture of the issues investigated here.

### **Author biographies**

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# Challenges to Interdisciplinary teaching for nutrition and health in Swedish compulsory schools

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## Abstract

*The Swedish National Agency for Education states that educational provision should involve pupil opportunities for interdisciplinary work and the experience of learning in different ways. In this context, the current study aimed to explore the actual operation of interdisciplinary teaching (IDT) in Swedish compulsory schools, i.e. from preschool (6 years) to grade 9 (16 years) regarding nutrition and health. To investigate this, two web-based nationwide questionnaires were sent out in 2014 to compulsory schools in Sweden. One questionnaire was aimed at teachers in five subjects: Home and Consumer Studies (HCS), Natural Science Subjects (NSS) (Biology, Chemistry, Physics), and Physical Education and Health (PEH). The second questionnaire was for school principals. A total of 388 teachers and 216 principals answered the respective questionnaire. The study showed that 40% of the teachers and 59% of the principals reported that their school worked in an interdisciplinary way regarding nutrition and health education. Practical scheduling problems and a lack of time for planning were seen as the main barriers by both teachers and principals, but to a much larger extent by teachers. A prerequisite for successful IDT is that teachers have a chance to meet and plan, and this study indicates that frame factors have a critical impact on what is possible regarding IDT in Swedish schools. It is crucial that principals appreciate their part in facilitating IDT. Increased interdisciplinary teaching for nutrition and health (IDT-NH) might increase school potential for the better integration of knowledge and understanding about the importance of lifestyle for health, the environment and society.*

## Introduction

Learning can take place in many different ways and settings. Schools should therefore provide a variety of teaching methods to increase pupils' opportunities for learning. One way is to work with interdisciplinary teaching (IDT) which gives pupils a chance to study school subjects from different angles to develop a broader understanding of specific content and the way that subjects are associated (Svingby, 1986). The Swedish national curriculum states that teachers should collaborate in order for pupils to attain the goals of the education (National Agency for Education, 2011a). It describes how teachers can organize and carry out the work so that pupils 'receive opportunities to study subjects in greater depth, develop a frame of reference and context, and receive opportunities to work along interdisciplinary lines' (National Agency for Education, 2011a, p. 16). The Swedish National Agency for Education (2011b) also have guidelines for lesson planning and implementation, stating that pupils should have opportunities for interdisciplinary learning.

## Aim

Against this backdrop, the current study aimed to explore the actual operation of interdisciplinary teaching for nutrition and health (IDT-NH) in Swedish compulsory schools, i.e. from preschool (6 years) to grade 9 (16 years).

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### Interdisciplinary teaching

For some time now, IDT has been promoted in Sweden and other Nordic countries (Blanck, 2014; Imsen, Blossing & Moos, 2017; Karppinen, Kallunki & Komulainen, 2019; Svingby, 1986;). IDT is sometimes also called interdisciplinary pedagogy or cross disciplinary project work (Imsen et.al., 2017). In the early 20th century, John Dewey, maybe one of the most influential philosophers and educational reformers of that century, suggested interdisciplinary thinking and interdisciplinary studies as a means of address present day issues in the classroom (Fallace, 2016). In Sweden, Dewey's ideas on education were particularly influential and underpinned post-war educational reforms at all levels. In the early 1960s, this included the introduction of nine year compulsory education (Grundskola) in a comprehensive school system that was free to all (Imsen et.al., 2017; 1946 School Commission, 1948). Within the Deweyite education philosophy, IDT has been promoted to support pupils' broader understanding of subject contents. IDT has also been used to make subject linkages more visible (Blossing & Ekholm, 2008; Svingby, 1986). Interdisciplinary thinking, Wilson (1999) argues, is part and parcel of the human mind that searches for connections between objects and qualities and, in doing so, it crosses the socially-constructed borders between disciplines. Howlett, Ferreira and Blomfield (2016) similarly make the case for interdisciplinary approaches to teach sustainable development in higher education. According to Karppinen et al. (2019) interdisciplinary pedagogy, as currently used in teacher education in Finland, works across and beyond subjects' boundaries to provide a more holistic picture of the real world, and thereby supports pupils' deeper understanding of complex relations between different phenomena. Furthermore, several studies have shown positive results in mathematics when combining the teaching with other subjects, such as HCS (Brante & Brunosson, 2014; Malmer, 2002), and history (Roy, Eli, Hendrix, & Graul, 2018).

A recently published report about HCS from the Swedish School Inspectorate showed that teachers and principals considered IDT to be important but rare (School Inspectorate, 2019). The report concluded that if content from HCS were incorporated with other subjects, it would give pupils opportunities for more repetition and a better understanding of some content that can only be treated superficially in HCS.

However, there are also studies with less positive assessments. Hattie's (2009) early synthesis of over 800 meta-analyses and more than 50 000 studies relating to academic achievement is the world's most comprehensive review of what affects pupils' learning outcomes. In terms of IDT, 144 meta-analyses were used to show that it only had a modest effect on learning. Importantly, though, there was differentiation and better effects were seen for interdisciplinary work with young children, low-performing pupils and multicultural groups. The effects were further improved when the lessons were held by a more experienced teacher, and when the teaching was of thematic character. One criticism of Hattie's analysis is that he only used measurable indicators of pupils' learning as outcomes and thus excluded 'soft' values such as the way that pupils felt about their learning and their confidence in classmates etc. which could also be strong indicators for learning (Terhart, 2011).

### Schools responsibility for interdisciplinary teaching

In Sweden, IDT is highly valued. In fact, the Swedish National curriculum (2011a) prescribes that principals should give teachers opportunities to work in an interdisciplinary way with different topics. The curriculum also states that pupils at the end of compulsory school should have knowledge and understanding of the importance of their lifestyle for their health, the environment and for society. In fact, core content (required content in each different school subject that teachers are obligated to include in their teaching) related to nutrition and/or health is in varying degrees included in five school subjects: HCS, Natural Science Subjects (NSS) (Biology, Chemistry and Physics) and Physical Education and Health (PEH) (Table 1). This makes IDT-NH a way to give opportunities for pupils to achieve the overall goal of the curriculum as well as to understand linkages between the five subjects.

Table 1. Comparison of total hours and core content (core content total and related to nutrition and/or health) in five different school subjects in Swedish compulsory school, grades 1-9 (National Agency for Education, 2011a).

Home and Consumer Studies (HCS)	Natural Science Subjects (NSS)			Physical Education and Health (PEH)
	Biology	Chemistry	Physics	
118 hours	200 hours	200 hours	200 hours	500 hours
33 core content total	51 core content total	59 core content total	61 core content total	38 core content total
14 core content related to nutrition/health	3 core content related to nutrition/health	3 core content related to nutrition/health	1 core content related to nutrition/health	1 core content related to nutrition/health
Grades 1-6	Grades 1-6	Grades 1-6	Grades 1-6	Grades 1-6
<ul style="list-style-type: none"> <li>• Recipes and instructions, how they can be interpreted and followed, common words and terms for cooking and baking.</li> <li>• Different methods of baking and cooking.</li> <li>• Planning and organizing the preparation of meals</li> <li>• Tools and technical equipment used for baking and food preparation and how these are used in a safe way.</li> <li>• Hygiene and cleaning when handling, preparing and storing food.</li> <li>• Different tools to support planning of varied and balanced meals, and also how meals can be distributed over a day.</li> <li>• Importance of meals for a sense of community.</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of food, sleep, hygiene, exercise and social relations in order to feel good.</li> <li>• How mental and physical health are affected by sleep, diet, movement, social relationships and addictive substances. Some common diseases and how they can be prevented and treated.</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of food, sleep, hygiene, exercise and social relations in order to feel good.</li> <li>• Contents of food and the importance of nutrients for health. Historical and contemporary methods for extending the life length of food.</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of food, sleep, hygiene, exercise and social relations in order to feel good.</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Grades 7-9	Grades 7-9	Grades 7-9	Grades 7-9	Grades 7-9
<ul style="list-style-type: none"> <li>• Comparisons between recipes and calculating quantities when preparing food. Creating own recipes.</li> <li>• Different methods of baking and cooking. How choice of method influences the work process and results.</li> <li>• Planning and organizing the preparation of food</li> <li>• Tools and technical equipment that can be used for baking and food preparation, and how these are used in a functional and safe way.</li> <li>• Hygiene and cleaning when handling, preparing and storing food.</li> <li>• Individual needs for energy and nutrition</li> <li>• How meals can be arranged and organized, and the importance of meals in developing a sense of community and well-being.</li> </ul>	<ul style="list-style-type: none"> <li>• How physical and mental health is affected by sleep, diet, exercise, social relationships and addictive substances. Common diseases and how they can be prevented and treated.</li> </ul>	<ul style="list-style-type: none"> <li>• Content of food and beverages and their importance for health. Chemical processes in the human body, such as the digestive process.</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Different definitions of health, relationships between movement, diet and health, and the relationship between addictive substances and ill-health</li> </ul>

Every day people are faced with a variety of food choices, and increasingly have access to foods of all kinds at any time (Vandevijvere, Chow, Hall, Umali, & Swinburn, 2015). Research has shown that individuals make on average over 200 food-related decisions per day (Wansink & Sobal, 2007). Limited knowledge about good choices from health, economic and environmental perspectives could have negative consequences for both the individual and society. Teaching pupils about nutrition and health, and how to make healthy choices from different perspectives; i.e. improving both health literacy (Nutbeam, 2000) and food literacy (Pendergast, Garvis, & Kanasa, 2011) could be one way to counteract the increasing prevalence of non-communicable diseases like obesity, hypertension, cardio-vascular disease and type-2 diabetes. More generally, this thinking could also be important for health equity since many children can be reached through school (World Health Organization, n.d.).

### **Pedagogical leadership—a facilitator of interdisciplinary teaching**

Pedagogical leadership is a concept used in Scandinavia as one of several responsibilities for principals (Nestor, 1993). It concerns supporting teachers' capacity for teaching and improving pupils' learning environments (Bredeson, 2000). Bredeson argues that principals, along with teachers, are the most significant factors for pupils' school outcomes.

A weakness in pedagogical leadership is that organizational structures have not always supported communication about teaching and learning issues (Leithwood, 2006). One important factor is that within the new emphasis on decentralization of the Swedish school system in the 1990s (Blomqvist 2004), it became possible to recruit principals from various professional backgrounds (Holm & Lundström, 2011). It was no longer a requirement that the principals should have a teacher education, instead principals were recruited from other occupations e.g. economists, or organizations e.g. the military. This had negative effects for the pedagogical focus of principals. However, since 2010 all new principals are required to have one semester (30ECTS) of university level principal education, although those recruited before 2010 are exempt (Jarl & Rönnerberg, 2019).

In the Swedish national curriculum, principals have a special responsibility to provide prerequisites for different tasks (National Agency for Education, 2011a). Two examples with importance for IDT are: first, the coordination of teacher schedules in different subjects to ensure pupils are provided with opportunities to understand larger domains of knowledge as a whole. Second, encouraging teachers in different subjects to integrate cross-disciplinary areas of knowledge during lessons.

### **Frame factor theory and the decentralization of schools**

In the 1960s and 1970s, parallel with the introduction of 9 years compulsory schooling, Urban Dahllöf (1967) and Ulf P Lundgren (1972) developed the frame factor theory, which shows how education is dependent on various conditions or frames. Frame factor theory has been an important tool for understanding activity outcomes in schools. Dahllöf and Lundgren both showed that curriculum, classrooms, timetables, and so on, influence the actual teaching and are therefore important frame factors to keep in mind when trying to understand the preconditions for teaching and outcomes of learning in schools.

Profound school system changes in the early 1990s were implemented using management by objectives and result (Blomqvist, 2004). This included a new financing system of school vouchers, connected to pupil school choice and the onset of new tax-financed free-schools (Björklund, Clark, Edin, Fredriksson & Krueger, 2006; Lindensjö & Lundgren, 2014). With the new system, the governance and administration of education was transferred from the State to a variety of local decision-makers, including municipalities and schools that had been traditionally led and organized within municipalities along with the new free-schools (Rönnerberg, Lindgren & Lundahl, 2019). Overall, education became less regulated (deregulated) (Blomqvist, 2004; Gustafsson, Sörlin, & Vlachos, 2016). Many frame factors that were previously strictly regulated by the state, for example school buildings, and specific resources like laboratories and facilities for HCS, were no longer centrally controlled. Along with this dismantling of central regulation, new ways of decision-making provided both opportunities and challenges for the organization and distribution of school subjects (Broadly & Lindblad, 1999). For example, HCS teaching could now take place in different facilities (Lindblom, Erixon Arreman, & Hörnell, 2013), and by 'teachers' who lacked formal teacher qualifications (Gustafsson et al., 2016). These developments, along with leadership changes have created a new landscape for compulsory schooling and are the context for an examination of whether these new arrangements—specifically IDT for HCS—have been firmly established in schools. Even though there



have been profound changes in the Swedish school system, the central issues of frame factor theory—such as relationships between resources and results—apply (Lundgren, 2015). Moreover, with increasing differentiation between social groups and between schools, this might be more pertinent than ever (Yang Hansen & Gustafsson, 2016).

## Method

### Population and sampling

For this study, in 2014 two nationwide web-based questionnaires were distributed to Swedish compulsory schools. These were constructed using Google Apps for Education and were distributed by e-mail. Addresses for the schools were provided by Statistics Sweden (SCB) and at the time of the study they had e-mail addresses for 60% (2924) of all existing compulsory schools in Sweden (Figure 1). Information about the study was sent to all these schools.

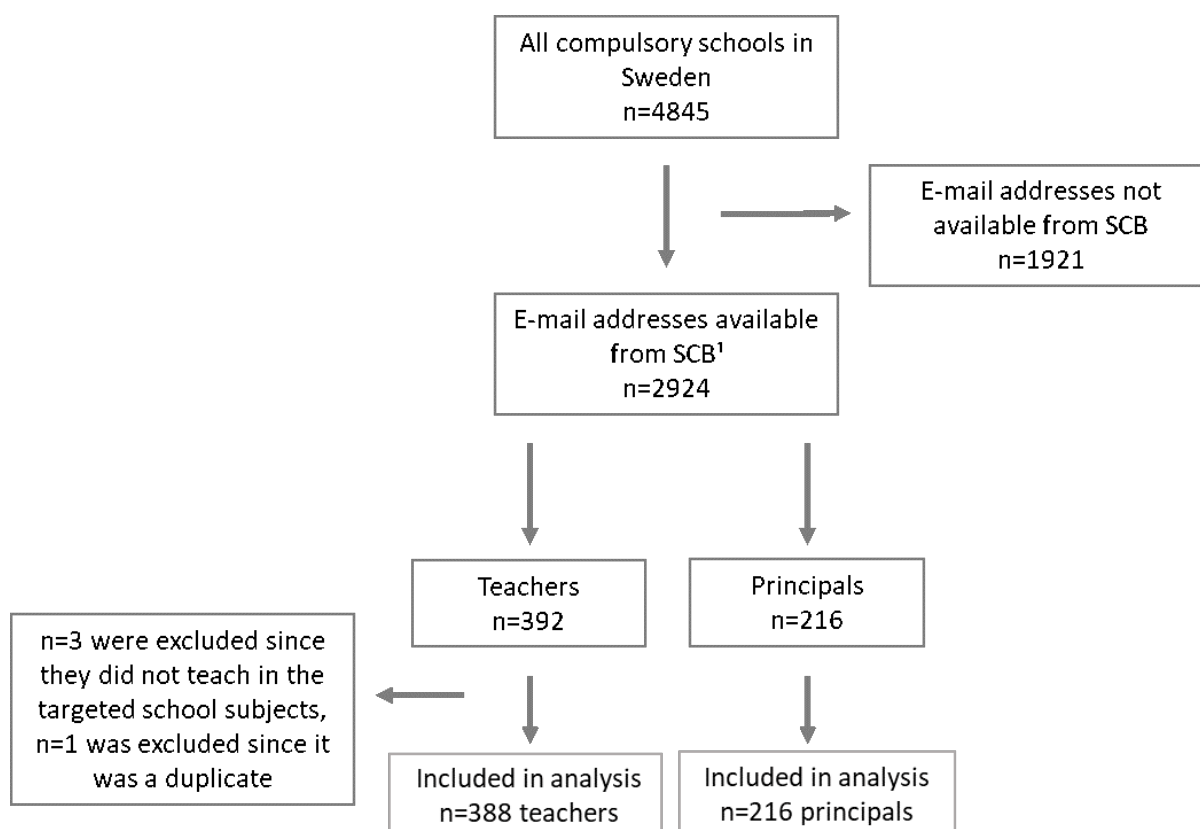


Figure 1. Data collection from online surveys to principals and teachers in 2014.

<sup>1</sup>SCB = Statistiska centralbyrån; Statistics Sweden ([www.scb.se](http://www.scb.se))

The information was sent to the schools' general e-mail addresses and recipients were asked to forward this to the relevant teachers and to principals. The e-mail included information about the survey and a link to the respective online questionnaires. One questionnaire targeted teachers of the five subjects with core contents including nutrition and health education in their syllabuses; HCS, Biology, Chemistry, Physics and PEH. The other questionnaire was directed to principals. Both questionnaires were pre-tested by a small group of people experienced in the educational field, resulting in minor revisions to the survey addressed to teachers. One reminder e-mail was sent to the schools three weeks after the first e-mail.

### Instrument development and data collection

The questionnaires were developed with reference to the identified knowledge gaps from previous literature. The teacher questionnaire comprised 40 questions (Q). Those used in the present study were: Q 1–8 were background questions about the teacher and his/her qualification as a teacher; Q 9–12 covered the use of IDT-NH and perceived barriers to it (graded with Likert scale from 1-7; see

explanation below); Q 13–38 were statements regarding teaching methods used for the core contents related to nutrition and/or health in the five subjects' syllabuses (see Table 1). Questions about core content were asked of all teachers regardless of what subject or subjects they had claimed to teach. The questions were all phrased in the same manner e.g., 'When I teach about 'Individual needs for energy and nutrition' in grades 7–9, I use the following methods: ...' The teachers could choose from ten different methods 'lectures', 'PBL (problem-based learning)/case', 'discussions', 'demonstrations', 'lab/practical work', 'research', 'roleplay', 'competitions', 'interdisciplinary teaching' and 'not applicable'. This study only presents data on whether teachers did or did not teach the respective core content, based on whether they claimed to use one or more teaching methods to teach it, not what type of teaching they used. Q 40 asked whether the teachers felt that they had enough knowledge in nutrition and health education considering the core content of the subject/-s they taught.

The questionnaire for principals comprised 22 questions. For the present study, six of those questions were used: three background questions about gender, highest education level and experience of the specific principal's education. Three other questions were asked—their views of nutrition and health education; whether there was any IDT-NH in their school; their perception of any barriers to IDT-NH.

Regarding these barriers, teachers and principals were asked to indicate on a Likert scale from 1–7 (where 1 corresponded to 'does not affect at all' and 7 'affects a lot') their perceptions of eight different factors as barriers to IDT-NH for their own teaching, or for their school respectively (principals were only asked about barriers for the school). These barriers were: lack of planning time; scheduling; facilities; equipment; economic factors; leadership from principal (principals were asked about to what degree they thought their own leadership was a barrier for IDT-NH); and knowledge of working methods, requirements and assessment. They could also answer that they did not know. Teachers were also asked to what degree their own interest in IDT-NH was a barrier.

Responses were received from 392 teachers (Figure 1). However, four completed questionnaires were excluded; three respondents did not teach in any of the five subjects and one was an obvious duplicate. The remaining 388 were included in the analysis. With the questionnaire for principals, all 216 were used for the analysis: none were excluded.

### Data handling and analysis

Eight new variables were constructed based on teachers' answers in the survey. One variable was constructed when teachers were grouped into three mutually exclusive groups showing the grades the teachers taught (Table 2): 1) Low grade (teaching Preschool–grade 3 (6–9 y), but not middle and/or high grade (n=21); 2) Middle grade (teaching grades 4–6 (9–12 y), but not low and/or high grade (n=60); and 3) High grade (teaching grades 7–9 (12–16 y), but not low and/or middle grade (n=121). This variable was used when testing if participation in IDT-NH were related to the grades teachers taught.

Table 2. Combination of grades teacher respondents taught and assignment to three mutually exclusive groups (low, middle and high grade) (n=388).

Grade	Total (n)	Combination (n)	F-3	4 TO 6	7 TO 9	Group
F-3	101	21	x			Low grade
		44	x	x		
		36	x	x	x	
4 TO 6	246	60		x		Middle grade
		44	x	x		
		106		x	x	
		36	x	x	x	
7 TO 9	263	121			x	High grade
		106		x	x	
		36	x	x	x	

The second variable grouped teachers into three mutually exclusive groups depending on the subject or subjects taught: 1) HCS; but not NSS or PEH (n=77), 2) those who taught one or several NSS; but not HCS or PEH (n=169), 3) those who taught PEH; but not HCS or NSS (n=102). In the results these three groups are denoted as 'teaching HCS', 'teaching NSS', and 'teaching PEH', respectively.

Five variables, one for each subject, were constructed to show whether the teachers were qualified in the subject they were teaching. Here the alternatives were 1) yes, 2) no, 3) inconsistent. The inconsistent option was chosen when a teacher stated that he/she had qualifications in a specific subject, but the answer about highest completed level of education made this unlikely e.g. stating compulsory school or vocational education as highest educational level, which does not provide a teacher qualification.

The last variable was constructed to show whether those who taught NSS (Biology, Chemistry and Physics) taught in one, two, or three of those. Since more than 80% of these teachers taught all three subjects, we merged them for some parts of the analysis.

For the analysis, the computer program SPSS (version 22/24; SPSS Inc., Chicago, IL, USA) was used. Data are presented as median [25–75 percentiles]. Differences in ranking between teachers and principals regarding barriers for IDT-NH were tested using Mann Whitney U-test. Other differences were tested using Chi-2 test and Kruskal-Wallis pairwise comparison-test. Results were considered statistically significant if the P-value was <0.05.

### Ethical aspects

The study was approved by the Research Committee at the Department of Food and Nutrition, Umeå University. The respondents were informed in written text that it would not be possible for the researchers to link the answers to a specific school, teacher or principals. In introductory information for the questionnaire, there was a statement that participation was voluntary and consent was assumed if respondents returned the questionnaire.

### Results

In total, 388 teachers and 216 principals, spread over the country, answered the questionnaires. Of the teachers, the majority (69.8%), were women, 29.6% were men and 0.5% stated 'other' indicating identification neither as a woman nor man. Corresponding percentages for principals were 71%, 28% and 1% respectively. The teachers stated that they had worked as teachers for a median of 13 years [7–18]. Eighty percent were qualified teachers, 6% were not, and 14% answered inconsistently (see Table 3 for result on each subject).

Table 3. Qualification of the 388 participating teachers (n=192 taught more than one of the subjects).

Subjects	Teaching subject N (% of total 388)	Qualified in specific subject N (% within subject)	Not qualified in specific subject N (% within subject)	Inconsistent N (% within subject)
HCS	99 (25.5%)	57 (57.6%)	26 (26.2%) (N <sup>2</sup> =16;N <sup>3</sup> =10)	16 (16.2%)
Biology	184 (47.4%)	138 (75.0%)	22 (11.4%) (N <sup>2</sup> =15; N <sup>3</sup> =7)	24 (13.5%)
Chemistry	184 (47.4%)	136 (73.9%)	21 (11.4%) (N <sup>2</sup> =13; N <sup>3</sup> =8)	27 (14.7%)
Physics	178 (45.9%)	134 (75.3%)	20 (12.4%) (N <sup>2</sup> =13; N <sup>3</sup> =7)	24 (12.4%)
PEH	137 (35.3%)	114 (83.2%)	7 (5.1%) (N <sup>2</sup> =1; N <sup>3</sup> =6)	16 (11.7%)

HCS = Home and Consumer Studies; PEH = Physical Education and Health.

N<sup>2</sup>= qualified in another subject; N<sup>3</sup>= not qualified in any school subject.

Ninety-six (24.7%) of the teachers taught in only one subject, equally divided into teaching HC-studies and PEH. The rest had a wide spread from two to 17 different subjects (median 3 [2–5]). Of the 197 participants who taught NSS (Biology, Chemistry, and Physics), 84.3% taught all three subjects, 8.6% taught two and 7.1% taught one. The principals stated that they had worked as a principal for a median of 8 [3.5–15] years and two-thirds (68%) had a principal education qualification (unfortunately principals were not asked whether they had a teacher education qualification as well).

### Interdisciplinary teaching regarding nutrition and health

Almost half of the teachers ( $n = 183$ , 47.2 %) stated that they were involved in IDT-NH. At the same time, only 155 (40 %) reported that their school worked in an interdisciplinary way.

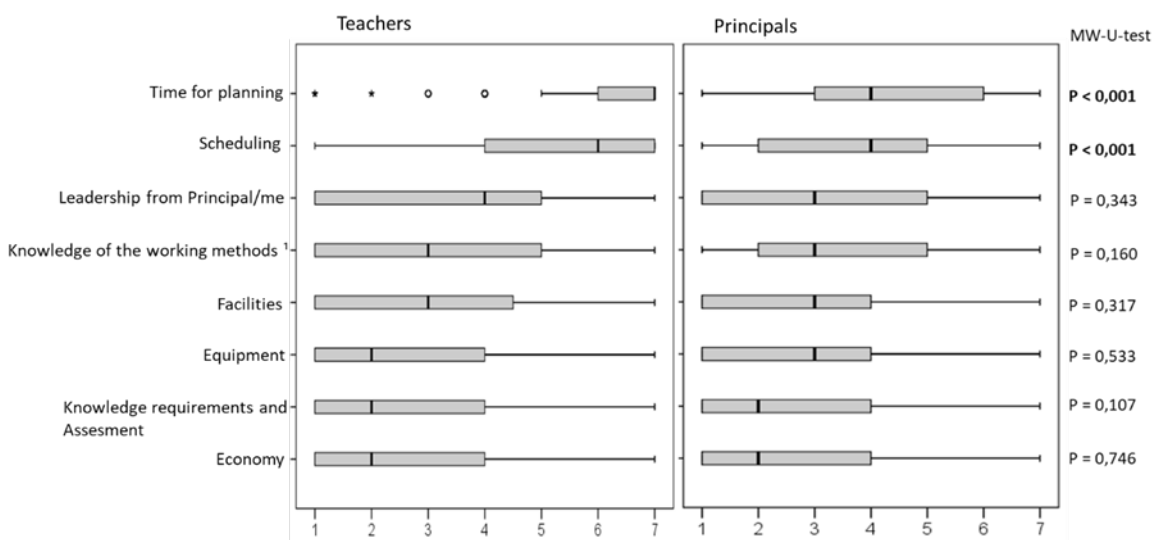
No differences were seen regarding IDT-NH depending on the teacher's qualification, different subjects or number of subjects, nor on the grades the teachers taught ( $p = 0.39$ – $0.47$ ).

Fifty-nine percent of principals stated that the school they were responsible for had IDT-NH, 36% said no and 5% did not know. Half of the principals ( $n = 109$ , 50%) stated that education regarding nutrition and health was very important. All school subjects were mentioned as having potential for IDT-NH, and almost all principals stated specifically that PEH (99%), HCS (97%), and NSS (95%) were suitable for this.

### Barriers to Interdisciplinary teaching for nutrition and health

All principals and teachers who did not engage with IDT-NH ( $n = 230$ ) were asked what they perceived as barriers to IDT-NH. The question was however not blocked for those teachers *working* interdisciplinary and more than half of them ( $n = 90$ ; 60%) also answered the question.

Lack of time for planning and scheduling problems were seen as the main barriers for IDT-NH by both teachers and principals (Figure 2). However, teachers graded these factors as more crucial for IDT-NH than principals did (7 [6-7] vs 4 [3-6], for lack of planning time and 6 [4-7] vs 4 [2-6], for scheduling problems; both  $p < 0.001$ ). The majority (78%) of the teachers and one third (35%) of the principals graded time for planning as a six or seven on the seven-point scale, and around half (55%) of the teachers graded scheduling as a six or seven compared to 18% of the principals (Figure 2). It is notable that factors' influencing possibilities for IDT-NH ended up in the same order for both teachers and principals.



**Figure 2** Barriers to IDT-NH in schools according to teachers ( $n=320$ ), and principals ( $n=214$ ), 1= does not affect at all, 7= affects a lot.

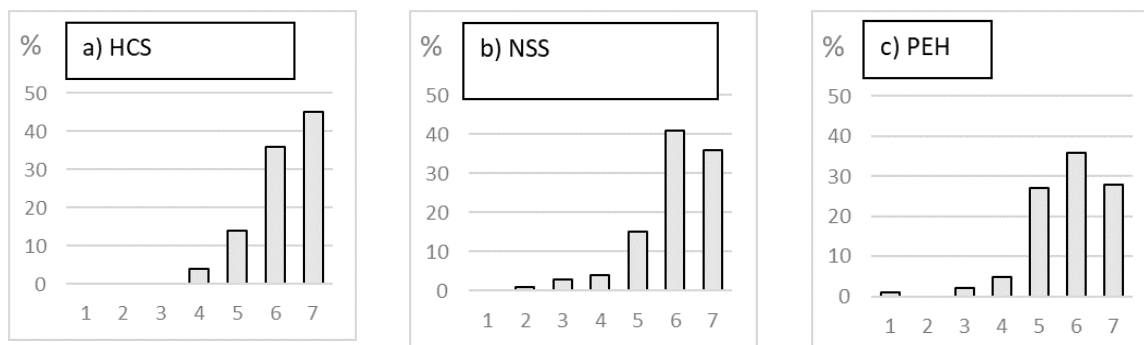
MW-U-test= Mann Whitney U-test.

<sup>1</sup> Teachers opinion about their own knowledge about the working method and principals opinion about the teachers' knowledge.

Only teachers were asked about their own interest for IDT-NH (not included in the Figure 2). Their answers had a median of three [2–5].

### Teachers' perceptions of their own nutrition and health knowledge in relation to the content they were responsible for teaching

To investigate teacher confidence in the nutrition and health knowledge they were responsible for teaching (see Table 1), they were grouped according to the subjects they taught. Teachers who taught either HCS ( $n=77$ ), PEH ( $n=102$ ) or NSS ( $n=169$ ), were included in this analysis. Those who taught more than one of these subjects were excluded. Most of the teachers felt they had relatively good knowledge about nutrition and health education (Figure 3). Those teaching HCS seemed most confident, although they were significantly higher only when compared with those teaching PEH ( $p=0.012$ ). Other group comparisons were not significant ( $p=0.168$ – $0.477$ ).



**Figure 3.** Teacher confidence in the nutrition and health knowledge they were responsible for teaching among teachers of a) HCS ( $n = 77$ ), b) NSS ( $n=169$ ), and c) PEH ( $n=102$ ). 1= *very poor* and 7= *very good*. P value between HCS and NSS = 0.477, P-value between HCS and PEH = 0.012, and P value between NSS and PEH = 0.168. Kruskal-Wallis pairwise comparison test.

Note: Only teachers who only taught in one of these subjects; i.e. HCS, NSS or PEH, were included in this analysis.  $N= 348$ .

### Core content not related to the teaching subject

A relatively large proportion of teachers indicated that they taught content from subjects other than their own (the number varied depending on subject taught and core content). For example; 52% ( $n = 39$ ) of those who only taught HCS (of the five subjects included in this analysis) stated that they taught about 'chemical processes in the human body, such as the digestive process' which is core content related to the Chemistry syllabus. Forty-one percent ( $n = 42$ ) of those who only taught PEH taught about 'content of food and beverages and their importance for health', which also is core content belonging to the Chemistry syllabus. Twenty nine percent ( $n = 48$ ) of those who taught one or more NSS taught about 'individual needs for energy and nutrition' which is core content on the HCS syllabus. In each case, a little under half of the teachers (44%, 42% and 46% respectively), also stated that they participated in IDT-NH.

### Discussion

The most important finding from the present study is that although almost half of the teachers participated in IDT-NH, the frame factors *planning time* and *scheduling* were seen as considerable barriers to whether IDT-NH was practiced in the school or not. These factors were seen as important barriers also by principals, but the fact that they saw these as less of a barrier than teachers is problematic since principals had both the responsibility and authority to schedule teachers' time.

The literature reports that IDT has positive effects for pupils' learning. However, IDT does not 'just happen', it requires planning, involvement, engagement and time. Teachers (and to a lesser degree principals) in the present study stated that the frame factors *planning time* and *scheduling* were organizational barriers critically affecting possibilities for IDT-NH. This is in line with a report from 2004 which also concluded that time for planning was the most important prerequisite for IDT (Eriksson, Arvola Orlander, & Jedemark, 2004). Also Persson, Ekborg, and Garpelin (2009) concluded in their study that teachers saw organizational structures as the largest barrier to IDT. Lack of time

is something discussed in many different contexts by teachers in Swedish schools (National Agency for Education, 2015). After the 1990's decentralization, national examinations for pupils were increased with the intention of enabling measurable and comparable results around the country (Codd, 2005). However, this took a large amount of time from teachers which could be one reason why teachers believe their time is now too limited to plan IDT-NH. Another important factor might be that teachers are involved in many administrative tasks not directly related to the teaching (National Agency for Education, 2013). Considering the strained working situation for teachers in Sweden, it is perhaps unreasonable to expect them, of their own accord, to organize and find time for IDT-NH. The question regarding barriers was only intended for those who did not participate in IDT-NH. However, more than half of those who actually participated in interdisciplinary work also replied. This implies that they also experienced barriers and considered them problematic but used IDT-NH regardless. This could imply that they perceived the benefits to outweigh the barriers or that they felt pressured to engage with it.

The fact that principals saw planning time and scheduling as less of a problem than teachers raises the question of whether principals realize their importance in facilitating IDT. In the Swedish National Agency for Education's guidelines for IDT it is stated that principals should ensure that scheduling is organized so that teachers have at least 60 minutes every week for collaborative planning (National Agency for Education, 2019a). A principal does, however, have many responsibilities in school—for example, finance and pedagogical leadership—as well as teacher and pupil development (National Agency for Education, 2019b). Since a teaching qualification is not now a requirement to become principal, pedagogical questions might have been overlooked in favor of financial and organizational matters.

However, many of the frame factors that principals face regarding, for example, finance, time and organizational structures, are out of their control. This results in principals being unable to give teachers the time they need to plan IDT. The question remains as to whether not ensuring enough time for this is an active choice or if some principals do not realize its importance.

Considering the reported barriers, which have also been reported in other studies (Eriksson et al., 2004; Kain, 1997; Persson et al., 2009), it is encouraging that as many as half of the teachers reported IDT-NH. However, it is important that schools provide teachers with the right conditions to enable this. As research has shown the benefits of IDT for pupils' learning (Brante & Brunosson, 2014; Campbell & Henning, 2010; Karppinen et al., 2019; Malmer, 2002; Roy et al., 2018) and self-efficacy (MacMath, Roberts, Wallace, & Chi, 2010), especially for low-performing children and multicultural groups (Hattie, 2009), we believe that increased IDT-NH is crucial for pupils to see the 'bigger picture' and to have a chance to acquire knowledge and then be able to use it to make informed choices. Therefore, we suggest nutrition and health education should be carried out within the framework of IDT on a regular basis.

It has been suggested that the school restaurant is an important arena for pupils' learning about nutrition and health (Andersen et al., 2014; Benn & Carlsson, 2014; Fung, Kuhle, Lu, Purcell, Schwartz, Storey & Veugelers, 2012). In Sweden, the potential is particularly good as a law requires the school meals to be both nutritious and free of charge for the pupils (Education Act, 2010, p. 800). Furthermore, the Swedish National Food Agency promotes school meals as a good teaching arena (National Food Agency, 2015). Teachers and other school staff eat with pupils in the school restaurant in as many as 95-98% of Swedish schools (Olsson and Waling, 2016).

Since 2014, two agencies, the National Agency for Education and the National Food Agency provide freely available educational material to support IDT for various aspects including nutrition and health education (National Food Agency, 2015; National Agency for Education, 2019a). Swedish National Food Agency material is based on the present curriculum and provides detailed descriptions on how different subjects and the school meal restaurant can collaborate. The material is available through The National Administration's web-site and, according to U. Brunn (personal communication, 3 April, 2019), the National Food Agency has also distributed this material directly to teachers through different web sites and when visiting schools around the country.

The present study shows that many teachers taught content related to subjects other than their own. This was not related to whether they were involved in IDT-NH. However, we do not know to what extent IDT-NH was used by those saying they did it. According to a study focused on HCS only 7% of HCS teachers used IDT on a regular basis (Lindblom et al., 2013). Höjjer (2013) further showed that

IDT rarely occurred in HCS as a result of the physical location of the classroom which made it hard for HCS teachers to collaborate with other teachers. Considering that teachers are responsible for planning and teaching their respective subject syllabus, it is worrying if they teach content belonging to other subjects, especially if their own subject has very few hours (such as HCS). Unless it is part of planned IDT-NH, this might lead to pupils missing out on important content for one subject and instead get repetition of content from other subjects, albeit from another angle. Teachers (and principals) need to have knowledge about the content of different school subjects, and their points of contact, to be able to see the advantage of IDT. We believe that if that is achieved, both pupils and teachers would benefit. Pupils (and teachers) would have the opportunity to see the potential of many subjects and the similarities in core contents which might enhance pupils learning (Brante & Brunosson, 2014; Campbell & Henning, 2010; Malmer, 2002).

However, according to Tholin (2006), there are three different explanations for the difficulties of teaching the current syllabus; 1) teachers work according to the previous curriculum, 2) teachers use old textbooks to steer the content of lessons, and 3) teachers use lesson materials from the old curriculum but justify it with their experience of 'what works'. Therefore, it is important that teachers have good knowledge about subject content. One way to deal with that is to have qualified teachers and to facilitate continued professional development for teachers during their career. The Swedish parliament considered that, as a prerequisite for their governance to have an impact in schools, teachers must have a teacher education qualification (National Audit Office, 2005). Their governance is to a large extent aimed directly at teachers in the curriculum and grading criteria. In order for the governance to work, teachers must have curriculum knowledge, as well as the pedagogical competence to interpret and apply these documents.

A limitation of this study was the recruitment procedure of the two questionnaires which makes it difficult to draw any general conclusions. The e-mail addresses were only available for 2924 of Swedish schools (60% of the total). Information about the study and the two questionnaires was sent to a general e-mail address for the schools. This meant that we did not have control over whether the questionnaires were forwarded to the intended persons. The response rate was low, total numbers of teachers in the five subjects and principals in Sweden at the time of the study were 40688 and 3627 respectively of which 388 (1%) and 216 (6%) participated, but the answers were well spread over the country. Gender balance and teacher qualifications in the survey were in line with the Swedish National Agency for Educations statistics (National Agency for Education, 2019a, 2019c), giving validity to the study. We do not know if participants were more or less involved or more positive about IDT-NH than the average teacher/principal or vice versa but this would of course affect our results. Some of the teachers' answers could however be verified by other studies, which gives validity to our study and indicates that the study gives a fair overall picture of IDT-NH in Sweden.

We did not ask how participants defined IDT. The absence of that question could be problematic, however, it should only be a minor problem as all teachers and principals are obligated to follow Swedish National Agency for Educations' syllabus which refers to IDT and how to implement it.

## Conclusion

The most important finding from this study is that lack of time for planning and scheduling problems were seen as the main barriers to IDT-NH by both teachers and principals, but to a much larger extent by teachers. IDT can be a good way to facilitate pupils' learning, and therefore schools, principals and teachers have to be given the prerequisites in terms of good frame factors—for example, time for planning and a schedule that facilitates IDT with other subjects. We also argue that IDT could be useful to help pupils acquire a more holistic picture of the relations between school subjects, and deepen their understanding of school subjects as part of the world outside. Also, considering the limited time teachers have in today's schools, good pedagogical material is important so that the threshold for starting IDT is not too large.

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# Self-efficacy Perceptions toward Online Learning of English Language Learners

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## Abstract

### **Purpose**

*This research explores associated self-efficacy perceptions via a focus on undergraduate students enrolled in online courses. More specifically, the purpose of this comparison analysis was to explore differences in self-efficacy perceptions and its determinants (previous experience, online anxiety, social interaction, mastery perceptions, and instructor feedback) of ELL and non-ELL students.*

### **Design/Methodology**

*Quantitative research method was utilized with a sample of 206 undergraduate students.*

### **Findings**

*Results indicated that ELL students were found to have significantly lower self-efficacy levels when taking online courses and would not enroll in as many online courses as their non-ELL counterparts. Self-efficacy was also found to have a significant direct relationship with their successful previous experience in taking online courses and indirect relationship with having anxiety toward online learning*

### **Practical implications**

*Education is about communication, and online learning lacks the interaction between student and her teacher. Communication works the best when it is face-to-face. Online learning creates anxiety in second language learners.*

### **Social implications**

*Higher education should be accessible to students with a variety of cultural and language backgrounds. Certain teaching methodologies are not suitable for persons whose English is a second language. There are many shortcomings of online education, because second language learners rely a great deal on non-verbal communication. When teachers see students face-to-face, they can gauge their understanding and explain the material differently if needed.*

**KEYWORDS** SELF-EFFICACY PERCEPTIONS, ENGLISH LANGUAGE LEARNERS, ONLINE LEARNING

Statistics show that in recent years the number of English-language learners (ELLs) in the United States has grown at an increasingly rapid rate (U. S. Department of Education, 2020). Over the last three decades, while the overall U.S. population has increased by 34%, the subset of those who speak a primary language other than English has increased by 140% (U. S. Census Bureau, 2010; Kindler, 2002). Nowhere is this growth more evident than in U.S. public schools as there was a sharp increase in 2014-2015 school year (U. S. Department of Education, 2017). This growth is not projected to slow down in the future. There is no doubt that when in schools ELLs are faced with challenges of language difficulties as well as adjustment to a new cultural environment. ELLs must employ more of a variety of learning and cognitive strategies (Bifuh-Ambe, 2011) than their native-speaker counterparts, which puts them at an academic disadvantage. Target (English) language proficiency is an important factor

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in their educational attainment and success and therefore a special assistance is needed to help with language difficulties. English language learning becomes a task which is a part of every course for ELLs. However, there is a limited amount of special assistance for ELLs once they enter higher educational institutions and there is in most cases no acknowledgement of their language learning status (Cho & Reich, 2008), which could lead to intimidation and low self-esteem when in college environment.

Learning landscape in higher education has been changing with the popularity of online classes. The growing popularity of online learning is indisputable, especially in higher education (Allen & Seaman, 2016), which could pose additional language challenges for ELLs. Few studies have been conducted to focus on ELLs experiences and successes in higher education and this study will close the gap in research regarding ELLs' perceptions of their confidence (self-efficacy) in taking online courses. Self-efficacy, being an important attribute in students' learning, can be a crucial determinant of their online learning experience and success. Therefore, the focus of this study is to examine self-efficacy perceptions in online learning of ELL undergraduate college students.

### **Self-efficacy and Online Learning**

Self-efficacy is considered to be a key psychological factor affecting students' success with online learning (Pajares, 1996); however, research has yet to identify tools to promote language minority students' self-efficacy in online learning environments. Furthermore, Bandura's (1986) social learning theory describes human performance as a result of a continuous "triadic reciprocity" (p.18). His theory is based on the interaction of three determinants: behavior, personal factors, and environment. His theory holds that human beliefs and feelings are developed and altered by social influences present in learners' environments. Bandura (1977) has also clarified that *behavior* (one of the three determinants in his theory) can be regulated by humans, who have a system of self-beliefs enabling them to take control of their feelings, thoughts, and actions; *thoughts* and *feelings* subsequently affect *behavior*.

Self-efficacy, which appears to be the most powerful attribute in human agency, refers to (a) an individual's beliefs in his or her capabilities to learn and (b) the ability to recognize what needs to be done in order to achieve certain types of outcomes (Bandura, 1986). Thus, self-efficacy is a self-reflective thought that affects a learner's behavior. Students who possess high self-efficacy will be more motivated and persistent in their academic achievements (Bandura, 1997; Zimmerman, 2000). Self-efficacy beliefs help to determine why people's behaviors may differ tremendously even when they possess the same skills and knowledge.

Differing levels of self-efficacy alter students' perceptions of their learning environments (Multon, Brown, & Lent, 1991; Shkullaku, 2013; Tenaw, 2013). Lee, Lee, and Bong (2014) have also found that self-efficacy directly and indirectly predicted scholastic achievement. Similarly, Jiang, Song, Lee, and Bong (2014) found that self-efficacy was one of the most dominant and influential predictors of scholastic achievement. Wilson and Narayan (2014) have investigated the self-efficacy of undergraduate students and concluded that students with high self-efficacy attain high performance on given tasks; this study also reported that (i) past performance and (ii) learning strategy are important predictors of student performance. Not surprisingly, low self-efficacy appears to foster negative emotions in students, which have been found to adversely affect student achievement (Mega, Ronconi, & De Beni, 2014).

### **English Language Learners**

Many online education research studies have focused on self-efficacy; however, these studies have not focused on minority students such as ELLs. ELL students require sufficient levels of interaction with native English speakers (as well as social and cultural capital) to attain postsecondary degrees. Although self-efficacy is considered to be a key psychological factor affecting students' success with online learning (Pajares, 1996), research has yet to identify tools to optimize ELL students' self-efficacy in online learning environments.

ELL students are now the fastest-growing group in public K-12 schools across the United States. Interestingly, only 20 percent of online undergraduate college students are ELLs (Aslanian & Clinefelter, 2013), which is commensurate with the percentage of students in public school systems who are ELLs. However, some staggering statistics on ELLs' postsecondary attainment have been

noted by Kanno and Gromley (2013) which showed that only half of ELL children actually participate in PSE (post-secondary education), which creates a big gap in educational attainment when compared to non-ELL children.

But the important question facing this present study is whether online courses might have a tendency to hinder ELL students' learning abilities and thus ultimately prevent them from succeeding in higher education. Furthermore, since one of the biggest challenges of online learning is retention, it is crucial to understand whether language minority students might (i) be discouraged from taking online courses (because there is minimal student-to-student and teacher-to-student interaction (Gray, 2013)), or (ii) possibly drop out of college altogether (because of challenges associated with online coursework).

## Research Objective

The objective of this study is to examine self-efficacy perceptions in online learning of ELLs undergraduate college students. Self-efficacy had additional constructs (determinants) which were examined in relations to self-efficacy. These constructs were examined: *previous experience* with taking courses online, *online anxiety*, *social interaction*, *mastery perceptions*, and *instructor feedback*. There were two main research questions studied in this research.

### Research Question 1: What is the self-efficacy of ELL college students when taking courses online?

- H1 Does the self-efficacy of ELL students differ from non-ELL students when taking online courses?
- H2 Is there a relationship between ELL students' self-efficacy and their anxiety when taking online classes?
- H3 Is there a relationship between ELL students' self-efficacy and their *previous experience* with online classes?
- H4 Is there a relationship between ELL students' self-efficacy and their *social interaction* while taking online classes?
- H5 Is there a relationship between ELL students' self-efficacy and their *instructor feedback* when taking online classes?
- H6 Is there a relationship between ELL students' self-efficacy and their *mastery perceptions* when taking online classes?

### Research Question 2: Do ELL students enroll in less online courses than non-ELL students?

- H7 There is a difference in ELL students' and non-ELL students' enrollment in online courses.

## Method

### Procedure

Students were recruited from four undergraduate courses in the College of Health and Human Services at San Francisco State University (SFSU). Upon the instructors' approval, students registered in these courses, were given the choice to participate in this study. The researcher only visited the classrooms once. During this visit, the study was introduced and explained. Those students who agreed to participate had to sign a consent form before they were given the survey. It took participants around 15 minutes to complete the survey.

### Participants

ELL participants were selected from a sample pool of 206 participants. These were 56 ELL undergraduate college students enrolled in four courses at SFSU. A quarter of the sample identified as language minority (23%). Even though the age of the respondents ranged from 20 to 40, the majority of them were between 21 and 25 years of age (80%). All of the 56 ELL respondents stated that English is not their first language. Their gender, linguistic and ethnic background, and socioeconomic status varied. Participants also varied in academic majors, with the majority majoring in design (52%), health services (38%) and child and family studies (7%).

### Measures

The survey instrument (comprising 32 questions) consisted of two main sections, plus student demographics information. Self-efficacy and self-efficacy construct questions (Bates & Khasawneh, 2007) were used in this study. The above authors previously adapted "computer self-efficacy"



questions from Compeau and Higgins (1995), and modified them to reflect the specific requirements of online learning systems in college classrooms. One of the self-efficacy constructs (i.e., *social interactions*) was from Shea and Bidjerano's (2010) study.

The first section of the survey queried students about their self-efficacy beliefs; the researcher used 10 validated survey questions. Items in this "online learning self-efficacy" measure have a base question ("I could complete the online learning requirements of a college course using online learning technology...") and a number of questions to complete the base ("...if I had a lot of time to complete the task"). These questions were measured on a one-to-ten confidence scale (1=not at all confident, 5=moderately confident, 10=totally confident), with the internal consistency indicating a value of  $\alpha=.91$ .

The second section of the survey included five determinant variables: (a) *previous success with online learning technology* (four items, including "In the past, I had been very successful using online learning technology as a learning tool") ( $\alpha=.93$ ); (b) *online learning system anxiety* (four items, including "Online technology is intimidating to me") ( $\alpha=.82$ ); (c) *instructor feedback* (three items, including "The instructor gave me feedback when I needed it about my online learning contributions") ( $\alpha=.89$ ); and, (d) *social interaction* (five items, including "Online discussions help me to develop a sense of collaboration") ( $\alpha=.66$ ). This section also included determinant *student mastery perceptions* (four items, including "If I use online technology, I will be a better student") ( $\alpha=.85$ ). The third section of the survey included demographic questions (e.g., age, gender, and academic major).

### Study Design

This study employed a quantitative research design, specifically a survey of undergraduate students who had taken online courses. The dependent variable of this study was student self-efficacy perceptions when taking online courses which examined the differences between ELL and non-ELL undergraduate students (independent variable). Student self-efficacy perceptions when taking online courses was also examined in relationship to other independent variables—previous experience, anxiety, mastery perceptions, social interactions and instructor feedback. Additional dependent variable included the number of online courses taken (online enrollment). Data were analyzed using independent samples t-tests (including Cohen's *d*) and correlation analyses. See Figure 1.

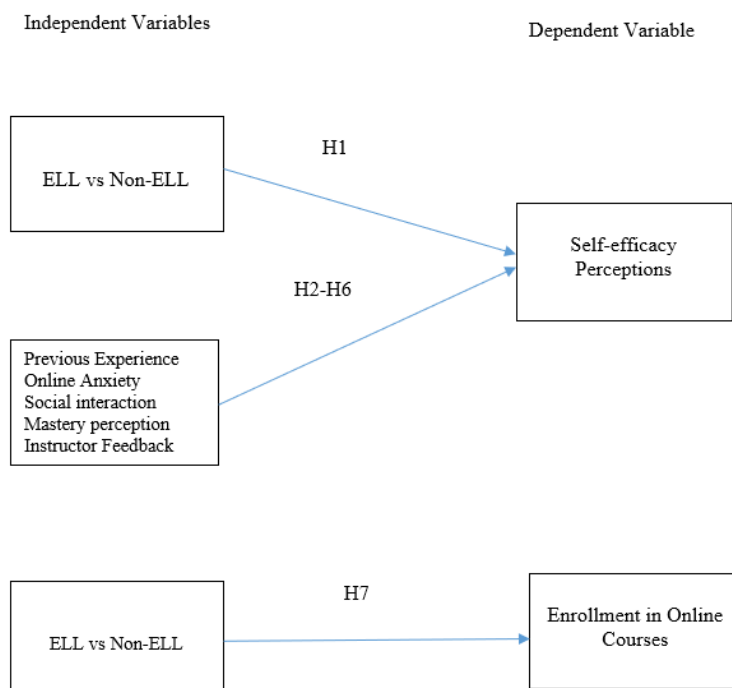


Figure 1. Conceptual Model

## Ethical Considerations

The option of participation in this study was given to students, who were asked to sign a consent form before the research began. The researcher followed the San Francisco State University's Institutional Review Board (IRB) requirements for the Protection of Human Subjects and obtained and received IRB approval.

## Theoretical Framework

Bandura's social learning theory was used as theoretical framework in this study. As previously mentioned, Bandura's (1986, p. 18) social learning theory examines human behavior resulting from "triadic reciprocity," which involves shared interaction among three determinants (behavior, personal factors, and environment). The interaction of these determinants helps explain students' self-efficacy perceptions in online learning environments. See Figure 2.

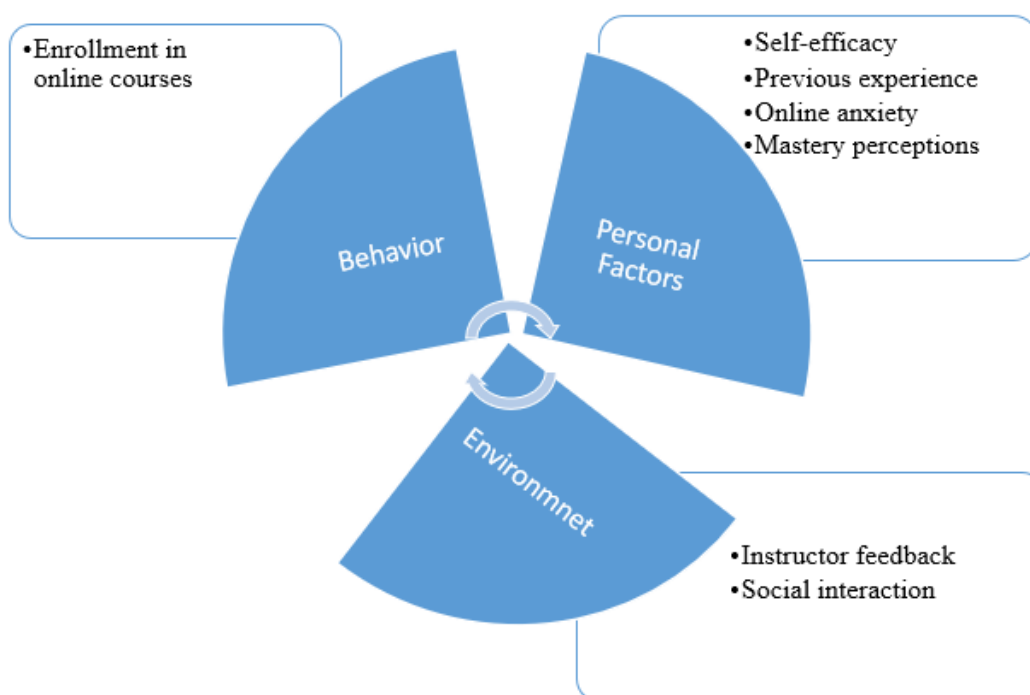


Figure 2. Theoretical Framework - Bandura's Social Learning Theory (depicting a model of interaction of three determinants).

## Operational Definitions

For the purpose of this study, Bandura's three determinants (behavior, personal factors, and environment) were measured by self-efficacy and its constructs in the following way.

**Behavior** was measured by the number of online courses students have taken (online enrollment).

**Personal factors** were measured by the level of anxiety students feel when taking online courses, by the level of confidence (self-efficacy) they feel about taking online courses, and their previous experience with taking online courses.

**Environment**, the third determinant, which was measured by instructor feedback and peer interactions when learning online. See Figure 2.

## Results

### Differences in Self-efficacy Perceptions between ELL and Non-ELL Students

Independent samples t-test was conducted to examine the differences between ELL students' self-efficacy perceptions and non-ELL students' perceptions toward online learning. Perceptions toward

online learning included self-efficacy and five other determinants—*previous experience, online anxiety, mastery perceptions, social interaction, and instructor feedback*. Results indicated that ELLs students had a significantly lower self-efficacy perceptions ( $m = 7.2$ ,  $SD = 1.5$ ,  $p = .05$ ) toward taking online courses than their non-ELL counterparts ( $m = 7.7$ ,  $SD = 1.5$ ). ELL students indicated that they would not feel as confident as non-ELL students if they had more time to complete the task ( $p = .00$ ). ELL students did not believe they would be as confident as non-ELL students taking online courses, if they could call someone for help if they got stuck ( $p = .05$ ). See Table 1.

Table 1. Independent Samples t-test for Differences in ELL and non-ELL Students' Self-Efficacy Perceptions

Variable	Non-ELLs		ELLs		t	p level	Cohen's d
	Mean	SD	Mean	SD			
<i>Self-efficacy</i>							
Never used technology like this	6.3	2.4	6.2	2.4	0.28	0.78	0.04
No one to tell me what to do	6.4	2.5	5.8	2.2	1.7	0.08	0.25
If I had online help facility	7.1	2.2	6.4	2.2	1.8	0.06	0.31
If I had seen someone else using it	7.9	1.9	7.5	1.9	1.2	0.2	0.21
Call someone if I get stuck	8.3	1.8	7.7	2.2	1.9	.05*	0.3
If someone help me get started	8.5	1.7	8	2	1.4	0.14	0.27
If I had lot of time to complete the task	8.6	1.6	7.6	2.1	3.5	.00**	0.53
If I had software manuals	6.3	2.6	6.3	1.9	-0.05	0.95	0
If someone had showed me	8.7	1.6	8.2	1.7	1.8	0.06	0.3
If I had used similar online technology	8.7	1.5	8.2	1.8	1.7	0.08	0.3
<i>Previous Experience</i>							
In the past I had been successful	4	0.93	3.8	0.97	1.4	0.16	0.21
Outstanding previous online accomplishments	3.8	0.91	3.6	1	1.4	0.15	0.21
Previous experience very successful	3.9	0.96	3.7	0.95	1.5	0.13	0.21
Success has been outstanding	3.7	1	3.6	0.94	0.6	0.54	0.1
<i>Online Anxiety</i>							
I feel nervous when I use online technology	2.2	1.1	2.5	1.2	-1.4	0.14	0.26
Online technology frightens me	1.7	0.94	2	1	-1.6	0.1	0.31
Online technology is intimidating	1.8	1	2.2	0.97	-2.2	.03*	0.4
I feel threatened when I imagine using it	1.7	0.96	2	0.95	-1.7	0.08	0.31
I get worried using online technology	2	2	2	1	-0.25	0.79	0

Note: Mean of Self-Efficacy 1 = *not at all confident*, 10 = *totally confident*

Mean of Determinants 1 = *strongly disagree*, 5 = *strongly agree*

Significant when  $p < .05$  \*  $p < .01$  \*\*

Regarding the outcomes of the five determinants, the results are the following.

ELL students perceived as having somewhat successful previous experience with taking online courses. ELL students ( $m = 3.8$ ,  $SD = .97$ ) did not perceive as having as successful of previous experience taking online courses as non-ELL students ( $m = 4.0$ ,  $SD = .93$ ). Although this difference did not show statistical significance, it showed small practical significance (Cohen's  $d = .23$ ). ELL students did not believe to be frightened or threatened about taking online courses, however they perceived online technology to be more intimidating ( $m = 2.2$ ,  $SD = .97$ ,  $p = .03$ ) when compared to their non-ELL counterparts ( $m = 1.8$ ,  $SD = 1.0$ ). ELL students did not believe online learning will make them better students, will help them learn more, nor it will help them earn better grades. There was a small practical significance found (Cohen's  $d = .20$ ) in these *mastery perceptions* with ELL students indicating lower mastery perceptions than their non-ELL counterparts.

ELL and non-ELL students somewhat agreed that getting to know course participants would enhance their learning and that online discussions are somewhat helpful (*social interaction*).

ELL students felt neutral (did not agree nor disagree) about instructors giving them feedback in online courses and somewhat disagreed that the feedback was prompt when taking online courses—no significant differences between ELL and non-ELL students. As mentioned above, four of the five constructs *previous experience*, *mastery perceptions*, *social interaction*, and *instructor feedback* did not show statistically significant differences between ELL and non-ELL students. Only one question of the online anxiety construct showed significant differences and previous experience, mastery perceptions showed practical significances between ELL and non-ELL students. See Tables 1, 2, & 3.

Table 2. Independent Samples t-test for Differences in ELL and non-ELL Students' Self-Efficacy Perceptions Continued

Variable	Non-ELLs		ELLs		t	p level	Cohen's d
	Mean	SD	Mean	SD			
<i>Mastery Perceptions</i>							
If I use online tech I will be better student	2.9	0.85	2.7	0.88	1.4	0.15	0.23
Online tech will increase the quality of course	3	0.99	2.9	0.99	0.56	0.57	0.1
I will learn more with online tech	2.9	0.97	2.8	0.87	1	0.28	0.11
I will get better grades with online tech	3	1	2.8	0.99	0.95	0.34	0.2
<i>Social interaction</i>							
Get to know course participants	3.4	1.1	3.4	0.97	0.22	0.82	0
Important to form impressions of participants	2.9	1	3.1	0.87	-1.2	0.23	0.21
Online is excellent for social interactions	3	1	3.1	1.1	-0.09	0.92	0.09
I feel comfortable disagreeing with others online	3.3	0.87	3.1	0.85	1.4	0.14	0.23
Online discussions help me learn	3.2	1	3	0.94	0.98	0.32	0.2
<i>Instructor Feedback</i>							
Instructor gave me feedback	3.2	1.1	3.1	1	0.31	0.75	0.09
Instructor gave prompt feedback	3.2	1.1	3.1	1	0.33	0.73	0.09
Regular instructor feedback	3	1.1	2.8	1	1.2	0.21	0.19

Note: Mean of 1 = *strongly disagree*, 5 = *strongly agree*

Significant when  $p < .05^*$

Table 3. Aggregate Data for Differences in Non-ELL and ELL Students' Online Self-Efficacy Beliefs/Determinant Variables

	Non-ELLs		ELLs		N	df	t	p level	Cohen's d
	Mean	SD	Mean	SD					
Self-efficacy Student Beliefs	7.7	1.5	7.2	1.5	206	202	-1.9	.05*	0.33
Previous Experience	3.9	0.86	3.7	0.89	206	202	-1.3	0.17	0.22
Anxiety	1.9	0.96	2.2	0.9	206	202	1.6	0.1	0.3
Student Mastery Perceptions	3	0.81	2.9	0.77	206	202	-1.1	0.25	0.2
Social interaction	3.2	0.69	3.2	0.58	206	202	-0.35	0.72	0.06
Instructor Feedback	3.1	1.1	3.1	0.93	206	202	-0.65	0.51	0.1

Self-efficacy/Mean of 1 = *Not at all Confident*, 10 = *Totally Confident*

Antecedent variables/Mean of 1 = *Strongly Disagree*, 5 = *Strongly Agree*

Significant when  $p < .05^*$

### Frequency of Online Enrollment

Independent samples t-test was conducted to measure research question two.

#### Research Question 2: Do ELL students enroll in less online courses than non-ELL students?

There was a significant difference found between ELL students and their non-ELL counterparts when it comes to enrollment in online courses. Non-ELL students enroll ( $m = 4.8$ ,  $SD = 3.4$ ) in more online courses than their ELL counterparts ( $m = 3.6$ ,  $SD = 2.5$ ,  $p = .02$ ). See Table 4.

Table 4. Independent Samples t-test for Differences in ELL and non-ELL Students 'Amount of Online Courses

Variable	Non-ELLs		ELLs		t	p level	Cohen's d
	Mean	SD	Mean	SD			
Number of online courses taken	4.8	3.4	3.6	2.5	2.3	.02*	0.4

Significant when  $p < .05^*$

### Relationships between Self-efficacy and its Determinants

Correlation testing was conducted to measure relationships between self-efficacy and the five determinants. Intercorrelation matrixes were conducted separately within ELL students and within non-ELL students. These intercorrelations help to answer hypotheses two through six.

#### Self-efficacy—ELL student group

Self-efficacy perceptions significantly correlated with only two out of five determinants within the ELL student group. The first significant relationship was between students' self-efficacy and their previous successful experience in online courses. As positive previous experiences in online courses increased so did students' self-efficacy in taking online courses ( $r = .44$ ,  $p = .00$ ). The second significant relationship was an indirect relationship between self-efficacy and feeling anxious when taking online courses. As ELL students' anxiety levels increased their self-efficacy toward taking online courses decreased ( $r = -.56$ ,  $p = .00$ ). Even though no correlation between ELL students' self-efficacy and obtaining prompt and regular instructor feedback occurred, the results showed that the more online courses ELL students took their beliefs that they received prompt and regular instructor feedback significantly increased ( $r = .54$ ,  $p = .00$ ). See Table 5.

Table 5. Intercorrelations-Self-efficacy/determinants and Number of Online Courses taken for ELL Students

	1	2	3	4	5	6	7
1. Self-efficacy	---	.436**	-.560**	0.175	0.101	0.117	0.072
2. Previous experience	---	---	-0.473	0.228	0.208	0.224	0.297
3. Online anxiety	---	---	---	-0.072	0.041	-0.095	-0.171
4. Mastery perceptions	---	---	---	---	.392**	.496**	0.224
5. Social interaction	---	---	---	---	---	.487**	0.231
6. Instructor feedback	---	---	---	---	---	---	.543**
7. Number of online courses	---	---	---	---	---	---	---

Significant \* $p < .05$ , \*\* $p < .01$

#### Self-efficacy—Non-ELL students

Self-efficacy perceptions significantly correlated with four of the five determinants within the non-ELL student group. Non-ELL students showed relationship between self-efficacy and mastery perceptions ( $r = .19$ ,  $p = .05$ ). Thus, as non-ELL students' beliefs increased in online courses being able to help them earn better grades, increasing the quality of their course, and allowing them learn more, their self-efficacy toward taking online courses also increased. Self-efficacy perceptions also correlated with instructor feedback in non-ELL student group ( $r = .18$ ,  $p = .05$ ). When the beliefs about instructors providing, prompt and regular feedback when taking online courses increased so did students' self-efficacy in taking online courses. Previous experience showed the strongest direct relationship with self-efficacy perceptions ( $r = .46$ ,  $p = .00$ ). The more successful their previous

experience was in taking online classes the more confident they felt about taking online courses. Feeling anxiety when taking online courses showed a strong indirect relationship with self-efficacy perceptions ( $r = -.46, p = .00$ ) in non-ELL students. This result was similar to ELL students' in a way that it was significant, but the relationship in ELL student group was stronger ( $r = -.56, p = .00$ ). Interestingly, social interaction in the online environment was the only variable that did not show significant relationship with self-efficacy for both ELL and non-ELL student groups. Social interactions are very important for ELL students as they are instrumental in their learning success. Interactions will help them understand materials as they can ask additional questions or learn from each other while interacting. See Tables 6 and 7.

Table 6. Intercorrelations—Self-efficacy/determinants and Number of Online Courses taken for non-ELL Students

	1	2	3	4	5	6	7
1. Self-efficacy	---	.456**	-.458**	.194*	0.003	.183*	0.117
2. Previous experience	---	---	-.528**	.422**	0.131	.317**	.175*
3. Online anxiety	---	---	---	-.375**	-.191*	-.266**	-0.127
4. Mastery perceptions	---	---	---	---	.223**	.320**	0.094
5. Social interaction	---	---	---	---	---	.262**	0.018
6. Instructor feedback	---	---	---	---	---	---	.222**
7. Number of online courses	---	---	---	---	---	---	---

Significant \* $p < .05$ , \*\* $p < .01$

Table 7. Summary of Research Hypotheses Testing

Research Hypotheses	Accepted ( $p \geq .05$ )
<b>Research Question 1: What is the self-efficacy of ELL college students when taking courses online?</b>	
H1: Does the self-efficacy of ELL students differ from non-ELL students when taking online courses?	Accepted
H2: Is there a relationship between ELL students' self-efficacy and their <i>anxiety</i> when taking online classes?	Accepted
H3: Is there a relationship between ELL students' self-efficacy and their <i>previous experience</i> with online classes?	Accepted
H4: Is there a relationship between ELL students' self-efficacy and their <i>social interaction</i> while taking online classes?	Rejected
H5: Is there a relationship between ELL students' self-efficacy and their <i>instructor feedback</i> when taking online classes?	Rejected
H6: Is there a relationship between ELL students' self-efficacy and their <i>mastery perceptions</i> when taking online classes?	Rejected
<b>Research Question 2: Do ELL students enroll in less online courses than non-ELL students?</b>	
H7: There is a difference in ELL students' and non-ELL students' enrollment in online courses.	Accepted

## Discussion

This study provided evidence that ELL, undergraduate college students do not feel as confident about their scholastic abilities when taking online courses as their non-ELL counterparts. Since the number of online learning courses has been increasing, this could pose serious problems for ELL students attaining higher degrees. It is true that online courses provide many benefits for students (e.g., convenience and the ability to maintain day jobs); however, some adjustments could be made to online learning environments that would benefit ELL, undergraduate students. This is an important finding because according to Bandura (1997), students who possess high self-efficacy will be more motivated and persistent in their academic achievements. Therefore, non-ELL students have more of an advantage in higher education than their ELL counterparts.

Correlation analyses showed that only two determinant variables—*previous experience* with online technology and *online anxiety*—had relationships with ELL students' self-efficacy. On the other hand, analyses also showed that four determinants—*previous experience* with online technology, *online*

*anxiety, mastery perceptions, and instructor feedback*—had relationships with non-ELL students' self-efficacy. Previous experience with online technology showed relationship with self-efficacy of both ELL and non-ELL students. Educators can build on students' experiences with online technologies and focus on providing them with more skills (e.g., by incorporating repetition when working with online technology). This finding somewhat aligns with numerous studies (Jan, 2015; Bates & Khasawneh, 2007; Muilenburg & Berge, 2005). Prior, Mazanov, Meacheam, Heaslip, and Hanson (2016) found that experience with using technology (i.e., digital literacy) significantly affected students' self-efficacy. Prior et al. (2016) suggested that educators should provide plenty of opportunities for students to build on digital literacy (e.g., via the provision of detailed instructions and providing opportunities for students to ask questions frequently, as well as the utilization of guides). Determinant variables are significant factors in online learning environments because they are key components in the development of efficacy judgements. When a student has a successful prior experience with the utilization of online technology, this will increase his or her self-efficacy and mastery of learning in online environments. Thus, it is important for educators to provide positive learning experiences in online environments because these experiences will affect subsequent experiences that students have in online classrooms. This variable functions as a building block in the success of students. Also, regular instructor feedback could increase the self-efficacy of students and, in turn, higher enrollment in online learning courses. Teachers should also provide prompt feedback; the lack thereof will lower the self-efficacy levels of students (and thus lower enrollment in online learning courses).

### Viewing Self-efficacy through Bandura's Lens

As previously mentioned, Bandura's (1986, p. 18) social learning theory examines human behavior resulting from "triadic reciprocity," which involves shared interaction among three determinants (behavior, personal factors, and environment). The first determinant *behavior* included the number of online courses taken variable. The second determinant *personal factors* included variables: self-efficacy perceptions, online anxiety, mastery perceptions, and previous experience. The third determinant *environment* included social interactions and instructor feedback variables. The interaction of these determinants helps explain the results of students' self-efficacy perceptions in online learning environments. An online learning environment (i) is controlled by the educator and (ii) includes the *teacher feedback* variable, which (as previously mentioned) is an important determinant for non-ELL students' self-efficacy. Personal factor anxiety variable showed indirect significant relationship with self-efficacy, indicating that as both ELL and non-ELL students' *anxiety* increased self-efficacy decreased.

The findings of this study emulated Bandura's "triadic reciprocity," with shared interaction among three determinants (personal factors, behavior, and environment); specifically, the relationship between ELL students' self-efficacy and two variables—*previous experience* with online technology and *online anxiety*. As for non-ELL students relationships were between four variables—*previous experience* with online technology, *online anxiety, mastery perceptions, and instructor feedback*—students' self-efficacy. The *social interaction* variable would be a part of the environment component in Bandura's model; however, social interaction, very much emphasized by educators as being an important component in online learning, was not found to be important in this study and did not appear to have a relationship with students' self-efficacy. Both ELL and non-ELL students did not feel they needed more social interaction activities (e.g., debate, forums, and discussions). Overall, there were more interactions found among the determinants (including self-efficacy) in non-ELL students than ELL students (because more significant relationships occurred). Therefore, more effective learning will occur for non-ELLs students than ELL students as Bandura's theory suggest more effective learning will happen when interaction occurs amongst the three determinants such as *behavior, personal factors, and environment*.

### Recommendations

This study supports three main recommendations. The first recommendation is based on the result that online classes can be intimidating for ELL students, a finding that aligns with studies regarding anxiety and online learning. Students' fears of not being able to open files, complete assignments, or navigate through virtual courses are common (Clair, 2015). In order to tackle this anxiety, and increase self-efficacy levels, instructors could provide supportive tutorials at the beginning of each semester for all students. Also supportive materials would allow students to become familiar with online systems and include practice assignments and practice exams. Also, Clair (2015) recommended

including a “Check-in Quiz” tool (as a prerequisite to this type of online learning). Through the Check-in quiz, students are able to navigate through every part of the online virtual space and familiarize themselves with courses in a very low-stress manner (which Clair believed will ultimately eliminate the fear and anxiety of online virtual spaces). Additionally, Cohen et al. (2009) developed a 15-minute, self-esteem-boosting writing exercise that has proven to lessen the anxiety of minority students, and have significant, long-term, positive results. Instructors simply ask students to write about what is important to them and why (e.g., musical ability or popularity). Cohen et al. developed PERTS (the Project for Education Research that Scales), which allows instructors to rapidly administer this self-boosting exercise online as an adjunct to standard coursework.

The second recommendation is based on the result that non-ELL students believe they may not have enough time to complete online assignments (as there is usually a set time limit for completing assignments and exams online). To decrease anxiety and increase self-efficacy, instructors could consider (i) giving students more time to complete online assignments and (ii) have instructions in writing and in video or audio formats.

The third recommendations stems from the importance of spreading awareness of the best online teaching practices for ELL and non-ELL students. This study provided evidence that ELL, undergraduate college students feel less confident about their scholastic abilities when taking online courses and take lesser amount of online courses than their non-ELL counterparts. Since the specific reasons for lower self-confidence of ELL students remain not clear, it is recommended that educators encourage ELL students to take online courses despite their intimidation. As the results of this study showed, successful previous experience with online learning will increase students’ self-confidence and with every successful completion of online course, they will feel more confident about taking the next course online.

## Limitations and Future Research Recommendations

This study also comes with limitations. The environment where students took their surveys (i.e., classrooms with peers) may have affected the responses; for example, students might have not expressed their difficulties with online learning when around their peers. Although, more research is necessary to explore the dimensions of online learning self-efficacy perceptions, the anxiety construct, which had the lowest alpha value for reliability, lacked specificity. It would be beneficial to know the precise issues that students feel anxious about when taking online courses. Next step is to employ a mixed-method approach in examining the precise reasons for ELL students’ self-efficacy perceptions. Open-ended questions where ELL students can list their own personal experiences in online learning could help the researcher to understand the reasons for lower self-efficacy perceptions. Also, conducting one-on-one or group interviews would allow the researchers to gather more information regarding the reasons for heightened anxiety when taking online courses. Further, this study only targeted students from one university; thus, future research is needed to examine online courses at more universities across the United States.

## Author biographies

Assistant Professor Ivana Markova earned her Doctor of Education Degree in International and Multicultural Education from University of San Francisco, California. She is currently teaching at San Francisco State University. Her research and teaching focuses on diversity in higher education and on studying cross-cultural phenomena pertaining to individual development and human behavior.

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## Engaging Home Economics through New Philosophical Ideas: A Commentary on International Contributions

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### Abstract

*An analysis of philosophical contributions from 11 home economists from six countries (informed by the central questions of philosophy) revealed new lines of thought with the potential to take the profession in new directions; that is, future proof it in the face of constant change. Informed by French, German and Russian philosophers, the common threads were human, being, the life world, and everyday life instead of the longstanding well-being and quality of life. Engaging with home economics philosophically generated food for thought for reconstructing home economics philosophy. Ideas include home as a mediating space, dynamics as well as process, action as well as practice, humanistic as well as family oriented, and being in relationship with the world, all of which impact the human condition.*

**KEYWORDS:** HOME ECONOMICS, PHILOSOPHY, INTERNATIONAL, FUTURE PROOFING, HUMAN CONDITION, EVERYDAY, LIFE WORLD

Professional belief systems shape practice. Beliefs reflect a person's philosophy or personal ideas that guide their choices and behaviour. This paper is about *engaging* home economics<sup>1</sup> by exploring new philosophical ideas that have the potential to change practitioners' belief systems and resultant practice. Engaging with something means paying attention to it because you are interested in it and are thinking about it. Engagement also means getting involved with something and feeling a connection with it ("Engage," 2019). The hope is that home economists will pay attention to (engage with) philosophy and come to appreciate what it means in their practice, especially the addition of new ideas.

When wrestling (engaging) with home economics philosophy, the primary task is to understand home economics and its nature rather than give philosophical advice (Williamson, 2007). To complicate matters, many home economics practitioners often resist engaging with philosophy (McGregor, 2014c), and efforts to philosophize often lead to "the apparent absence of a substantial body of agreed results" (Williamson, 2007, p. 1). Despite the potential for lack of agreement, one of the philosophical goals of *any* profession is to constantly work out new philosophical details that can meet critics' scrutiny (Rachels, 1975).

Examining philosophy and professional belief systems matters, because claims about the philosophical aspects of a profession have a bearing on its practice (Biedenbach & Jacobsson, 2016). Professional practice is dynamic; it is a repeatedly reproduced pattern of activities in response to situations (Rouse, 1996). This practice is informed by and can be interpreted using philosophy, which is a way of thinking about things by asking very basic but abstract questions about the world, society and our place within this context.

These questions (called the central questions of philosophy) pertain to what counts as reality and existence, knowledge and knowing, logic and reasoning, and values and merit (McGregor, 2018;

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<sup>1</sup> Ideas in this paper also pertain to family and consumer sciences (FCS), family studies, human ecology, home sciences, human sciences, consumer sciences and other monikers for home economics.

Rouse, 1996). Despite being abstract and hard to answer, how people act and behave depends on their answers to these questions (Biedenbach & Jacobsson, 2016). Actually, people's behaviour is shaped by their philosophy whether they know it or not, which means an enlightened home economist would purposefully ask and engage with these questions (McGregor & Goldsmith, 2010).

The paper's title was inspired by Rouse's (1996) book title: *Engaging science: How to understand its practices philosophically*. After rethinking philosophical traditions that had informed science, he reconstructed the philosophy of science using new thoughts. This involved addressing the central questions of philosophy and how they shape science philosophy. Following Rouse's (1996) example, after explaining the central questions of philosophy, divergent ideas about home economics' philosophical base were pulled together in one place followed with a discussion of how they might shape future practice. The paper concludes with five big takeaway ideas that can be used to reframe philosophical understandings of home economics for future engagement. These ideas have the potential to move the profession in new directions.

### Central Questions of Philosophy

Philosophy is Greek *philosophia*, 'love of thought, love of wisdom' (Harper, 2020). It is a study of the fundamental nature of reality and existence (ontology), knowledge and knowing (epistemology), logic and rhetoric, and values and worthiness (axiology) (see Figure 1). These are called philosophical *axioms*, meaning they are accepted as self-evident (true without question) by those who use them. Each axiom has its own driving questions, which are set out below. The central questions of philosophy also concern truth, identity, beliefs, perceptions, origins, meaning, purpose, experiences, the body/mind connection, and ethics and morality (Ayer, 1973; Cooper, 2018). Answers to these philosophical questions help inform professional practice (Biedenbach & Jacobsson, 2016). Beyond the scope of this paper, McGregor (2018, Chapter 2) explained how the answers differ according to research methodologies and paradigms.

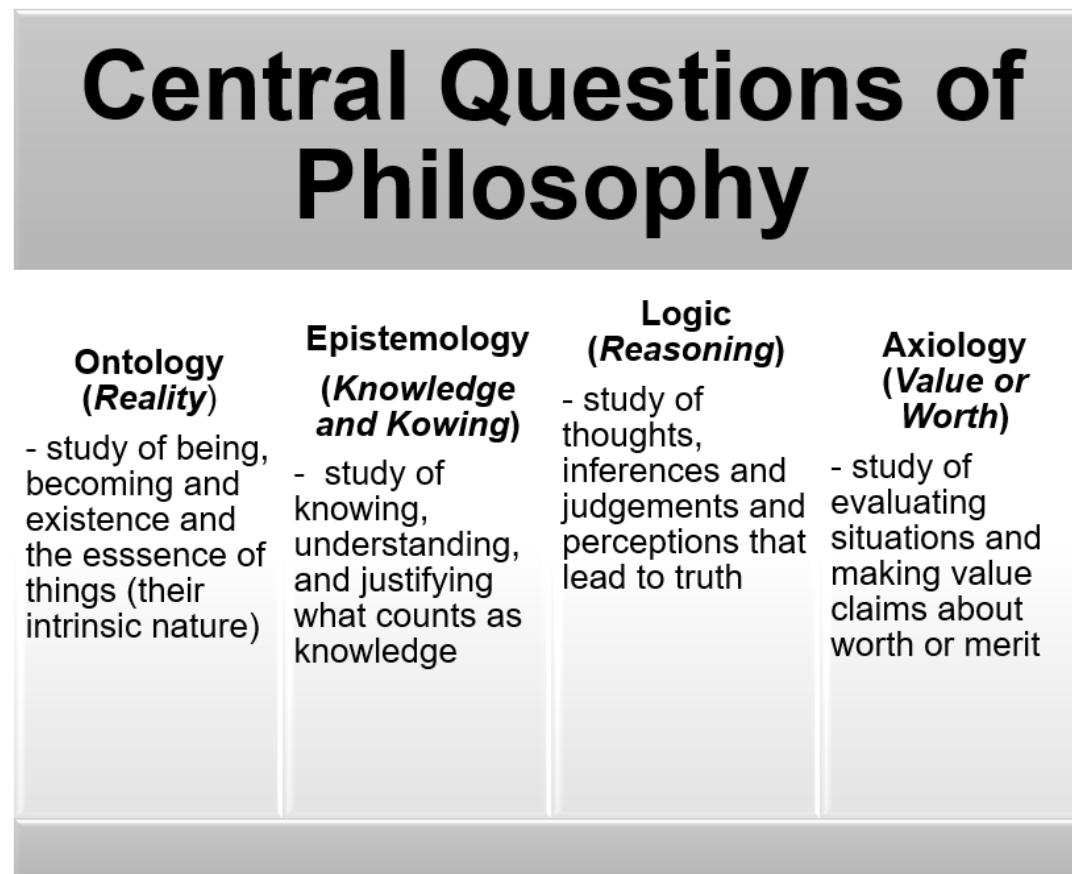


Figure 1: Four Central Questions of Philosophy.

### Central Questions of Ontology

Ontology is Greek *ontologia*, ‘the study of being’ (Harper, 2020). It is concerned with the nature of being and becoming and the essence of things (i.e., their intrinsic inner nature). It asks first, “what there is, what exists, what the stuff of reality is made out of [and] secondly, what the most general features and relations of these [particular] things are” (Hofweber, 2017, p. 7). Because it is not easy to answer the questions of ‘what there is and what is it like,’ ontology also involves the study of what is involved in settling on answers to ontological questions. A close corollary is to what degree are people committed to the answer they get to questions about reality and existence (Hofweber, 2017; McGregor, 2018).

### Central Questions of Epistemology

Epistemology is Greek *episteme*, ‘knowledge, how to understand’ (Harper, 2020). Vaidya (2015, p.1) explained that the central questions of epistemology concern “(i) what it is to know something, (ii) what it is to be justified in believing something, (iii) what it is to understand something, and (iv) what are the means by which we can come to possess understanding, justification, or knowledge.” Steup and Neta (2020) added that

epistemology is the study of knowledge and justified belief. [It] is concerned with the following questions: What are the necessary and sufficient conditions of knowledge? What are its sources? What is its structure, and what are its limits? As the study of justified belief, epistemology aims to answer questions such as: How we are to understand the concept of justification? What makes justified beliefs justified? Is justification internal or external to one’s own mind? (p.1)

### Central Questions of Logic

Logic is Greek *logike tekhnē*, ‘the art of reason’ (Harper, 2020). Logic pertains to habits of the mind related to (a) drawing valid inferences (i.e., a conclusion reached on the basis of evidence and reasoning) and good reasoning based on these inferences whether they are linguistic, mental or some other representation; (b) the study of thoughts and judgements (i.e., opinions formed objectively and authoritatively); and (c) the study of facts leading to a certain body of truth. Although logic may or may not place norms on reasoning (i.e., dictate *how* to think or reason), it is topic neutral meaning the process is valid no matter what topic one is thinking of or reasoning about (Hofweber, 2017; McGregor, 2018).

### Central Questions of Axiology

Axiology is Greek *axia*, ‘value or worth’ (Harper, 2020). Axiology is an area of philosophy focused on “theoretical questions about value and goodness in all varieties” (Schroeder, 2016, p.1). Axiological questions “encompass some ‘evaluative’ aspect” of a phenomenon or entity (Schroeder, 2016, p. 1). Axiology concerns what is important and useful (inessential), valuable (superfluous), good (bad), better (worse), best (worst), right (wrong) and moral (immoral or amoral) (Biedenbach & Jacobsson, 2016; Schroeder, 2016).

After *evaluating* a situation or scenario, people can choose to articulate a *value claim*. This differs from a factual claim, which argues the truth or falsity of an assertion. Value claims are judgements about something, its relative worth or merit (Schroeder, 2016). Axiology is basically concerned with “the essence of goodness, right conduct, value, and obligation” (Biedenbach & Jacobsson, 2016, p. 140). In research, axiology pertains to what role the researchers’ personal values should play in the inquiry process (e.g., value free, value laden, value dependent, value driven, value emergent) (McGregor, 2018).

## Home Economics Philosophical Innovations

This section profiles innovative philosophical ideas tendered by 11 home economists from around the world, organized by country with subsections labelled using the authors’ names presented in no particular order: United States (Brown, McFall); Canada (McGregor, Smith), Australia (Pendergast), Finland (Turkki, Tuomi-Gröhn and Palojoiki, Heniliä), Denmark (Benn), and Japan (Sekiguchi). Most of the collection was generated after the mid 2000s (ranging from 1993-2019). Older works tended

to be seminal pieces, meaning they strongly influenced later developments. Examples include Brown and Paolucci (1978), Brown (1993), and Tuomi-Gröhn and Palojoiki (2000).

## Method

This is, in effect, a commentary piece, because the author offers her thoughts on why insights from the process of reviewing already published works are valuable to a specific audience (Enago Academy, 2019), in this case, home economists concerned with how some members of the profession think it could engage itself philosophically. As was the case in this paper, authors of commentaries have in-depth knowledge of the topic and strive to present unique viewpoints, fundamental concepts, and newly created innovations. They want to “draw attention to current advances and speculate on future directions of a certain topic” (Berterö, 2016, p. 1).

Method wise, the author is intimately familiar with home economics philosophy literature (nearly 25 years) and follows it regularly and consistently reading widely and often. The final collection herein reflects her judgement on (a) who is most prolific in expressing opinions on this topic (Berterö, 2016). It reflects purposive sampling in that these women were judged as best able to provide information to answer the research question (McGregor, 2018).

As well, the final collection reflects the author’s judgement on (b) the novelty and innovativeness of the ideas relative to what exists in the field already (Berterö, 2016). As noted, she has been deeply steeped in the home economics philosophy literature for almost a quarter century and is very cognizant of how the ideas contained herein breach and augment what is already being utilized.

## Marjorie Brown

In 1993, Marjorie Brown published her thoughts about how United States’ (US) home economists understood themselves philosophically at the time. She was convinced that the profession would not be ready to reconceptualize itself unless it was more aware of where it came from philosophically. In a series of six essays, she focused on then-contemporary self-characterizations including but not limited to well-being, technical (practical) work, human ecology, and interdisciplinarity (see Table 1). These ideas arose from her own “preconceptions of home economics” as well as “representative sources” (Brown, 1993, p. xv) where other home economists had advocated for or used the same ideas.

Table 1: Brown’s (1993) critique of home economics philosophy

Essay Number	Self-identified but unexamined philosophical base	Recommended alternative philosophical base
1	well-being	<i>normative</i> well-being (focused on conditions of humanity as informed by justice, freedom, power, responsibility, peace and so on)
2	individualistic (self-interested) perspective of families in relationship with society (systems integration)	family as center of the development of <i>human qualities</i> conducive to the human condition (e.g., life world, holistic, autonomy (freedom to act), responsibilities, social integration)
3	professional community of practice	<i>democratic</i> professional community grounded in <i>philosophy</i> and concepts
4	practice is a practical (i.e., technical and instrumental) endeavour	reconceptualize practical so it means <i>moral</i> and <i>ethical</i> (live a just and good life)
5	interdisciplinary	transdisciplinary
6	human ecology perspective (narrowed to the human environment in the home)	broad, <i>transdisciplinary human ecology</i> : the “whole of human-environment relations” (p. 413) including but not limited to biological, natural, social, cultural, political, psychological

Brown (1993) did not “claim a monopoly on truth” about these ideas; instead, she invited other home economists to “enter into the thinking that I have done” (p. xv) if they wanted to rationally agree or disagree with her thoughts. She believed that it would be disrespectful to not critique the profession’s underlying philosophical base. Ultimately, she concluded that home economics practice was compromised, because members had *not* critically examined their philosophical belief system (i.e.,

these six aspects of its identity) (McGregor, 2014b). Brown (1993) then tendered new philosophical ideas for the profession's consideration (see Table 1). Regarding transdisciplinarity, McGregor (2012b, 2016c, 2019) has since championed the inclusion of transdisciplinary thinking in home economics philosophy.

### Barbara McFall

Also an American home economist (now called family and consumer sciences [FCS]), Barbara McFall (2006) formulated the construct of *qualities of living* instead of *quality of life*. A quality is an essential and distinguishing attribute. Quality of life feels static while *qualities of living* feels more dynamic. Life refers to existence, but living pertains to action, being alive (e.g., alert, active, having interest and meaning) and leading one's life (Anderson, 2014). Indeed, McFall (2006) saw *life* as a *state* of being that reflects accumulated experiences. She viewed *living* as a *process* (Braun, 2006).

A concern for the *qualities of living* implies that home economists should examine the dynamics of being alive instead of just the current state or quality of one's life. The word dynamic refers to the forces that stimulate development or change within a process or system (Anderson, 2014). Non-home economist Fuchs (2012) suggested that "the feeling of being alive" (p. 149) involves two different dynamics: (a) vitality (mood and attunement—ability to adjust to situations) and (b) conation or striving (drive, need, instinct, affect). The dynamics of being alive depend on two things: (a) a person's ability to self-organize and (b) the life process of living organisms in relation to their world.

### Sue L. T. McGregor

Nearly 30 years have passed since Brown (1993) tendered her critique of, what she called, the profession's self-identified philosophy. Since then, Canadian Sue L. T. McGregor has taken up this task not so much from a critique of how we say we understand each other but as an advocate for recommended shifts in philosophy. McGregor (2012c, 2015b, 2019) believed that home economists should augment their current philosophy by shifting from (a) integrated to integral thinking, (b) interdisciplinarity to transdisciplinarity, (c) systems to complex adaptive systems (CAS) and (d) well-being to the human condition (see Table 2).

Table 2: McGregor's recommended shifts in home economics philosophy

Current philosophical base	Recommended philosophical base
<p><i>Integrated thinking</i></p> <ul style="list-style-type: none"> <li>bring together or arrange things in a new way via synergy (things are stronger together than alone); there is no concern for whether anything is missing</li> </ul>	<p><i>Integral thinking</i></p> <ul style="list-style-type: none"> <li>pushes integrated further; assumes both that (a) as many perspectives as possible need to be considered to understand complexity and (b) particular things are necessary for a specific new whole to emerge (necessary for completeness)</li> </ul>
<p><i>Interdisciplinarity</i></p> <ul style="list-style-type: none"> <li>build bridges that bring different disciplines together so that new ideas, solutions and methods can be created through the transfer of knowledge and expertise</li> </ul>	<p><i>Transdisciplinarity</i></p> <ul style="list-style-type: none"> <li>bring disciplines and those beyond the university (e.g., government, business, civil society) together into the fecund space where resistance to others' perspectives is temporarily set aside so new knowledge can fuse and emerge</li> </ul>
<p><i>Systems</i></p> <ul style="list-style-type: none"> <li>holistic approach concerned with how the parts of a system (network of interconnected parts) interrelate over time and within the context of other systems; <i>human ecosystem</i> concerns humans in reciprocal relationships along levels of environments</li> </ul>	<p><i>Complex adaptive systems</i></p> <ul style="list-style-type: none"> <li>assumes systems can self-organize, regroup and adapt in the face of chaos and change; a huge number of decisions made every moment by many agents within the system create far-spread change with no one person coordinating this behaviour (e.g., ant hill, stock market, family unit)</li> </ul>
<p><i>Well-being</i></p> <ul style="list-style-type: none"> <li>pertains to separate individuals and family units and refers to their current state of being <i>well</i> (prosperous, healthy, happy, safe and autonomous) (e.g., economic, personal, social, physical, spiritual, political)</li> </ul>	<p><i>Human condition</i></p> <ul style="list-style-type: none"> <li>pertains to the collective of all of humanity and refers to the totality of actions taken by humans to date on the planet. Individuals and families are embedded within and constrained by the conditions of humanity; well-being is intricately connected with the human condition and vice versa</li> </ul>

What home economists have done in the past is not wrong, but it is not enough given today's complex issues (McGregor, 2019). She thus advocated for a paradigm shift with a normative tone indicative through the question "What *should* home economists do?" (McGregor, 2016a, 2018). What are their obligations and responsibilities to society? The *should* modality moves the profession beyond technical, taken-for-granted practice (given ends) toward critically examined work with and *through* individuals and families to meet their personally articulated valued ends (i.e., what is important to them).

East (1979), a fellow home economist, concurred, viewing the home as a matrix, a "molding force for individual development" (p. 141). Things develop and form within a matrix, which is Latin *mater*, 'mother, womb' (Harper, 2020). East suggested that home economics should focus on "improving that matrix" (1979, p. 141). She radically envisioned home economists doing their work *through* home and family, which serve as 'a means to an end,' a matrix within which things can develop. For East, home economics should be "focused on the home in order to improve humanity" (1979, p. 141). McGregor (2019) believed that effectively working *through* individuals and families requires new forms of thinking (e.g., integral, CAS and transdisciplinary) as well as a concern for the human condition (see Table 2).

On another front, respecting the home economics European usage of *everyday life* instead of *well-being* (Tuomi-Gröhn, 2008; von Schweitzer, 2006), McGregor (2008, 2012a) advocated for profession-wide up take of the *everyday*. This would involve imbuing our philosophy with Fleski's (1999/2000) (non-home economist) three dimensions of everyday life: time (rhythm), modality (habits), and space (home). Respectively, the connections and rhythms of daily life (and *time* spent on these) establish the structure of the everyday. The inherent, regularly repeated patterns that scaffold this structure free the mind for creativity and innovation. Everyday life manifests in habitual behaviours (*modality*), which make room for inventiveness and original thought. Time (rhythm) and modality (habits) unfold within the home (*space*), which is a venue for human agency and self-determination. Home also serves as an anchor from which to venture out into the world.

From this philosophical stance, the everyday lives of families become the very basis of humanity. The strength people gain from the security and safety of the everyday can be used to scaffold them when they experience the non-everyday (e.g., crises, turmoil, stress, trauma) (Fleski, 1999/2000). Philosophically, this means home economists need to strengthen the everyday if they want to strengthen families (McGregor, 2012a; Tuomi-Gröhn, 2008; Turkki, 2015a).

### Mary Gale Smith

Canadian Gale Smith (2016) invited home economists to draw on Mikhail Bakhtin's (1981) work (Russian philosopher), especially his notion of *dialogics*. In short, the *meaning* of what people say depends on the context and not just the words. Each time a thought is uttered, that particular *time* will have a set of conditions (e.g., social, psychological, historical) that affect how people interpret what the thought means. For Bakhtin (1981), dialogue is an ongoing social process rather than just casual conversation. In contrast, American home economists Brown and Paolucci (1978) advocated for *dialectics*, a process that merges point and counterpoint leading to synthesis rather than meaning as does dialogics (Sennett, 2012; Smith, 2016).

Regarding ontology, Bakhtin (1993) viewed *Being* an event, an act, instead of a steady state. During this act, people enter ethical relationships with others and are *answerable* for the act (i.e., the process of creating and authoring it) rather than responsible for the outcome. Inherent are the process of *Becoming* and the *eventness* of the event (i.e., the world it took place in). Bakhtin (1993) referred to this as *Being-in-process*. Smith (2016) explained that, when embracing this philosophical idea, home economists would help people to experience the world centered on an individual who is interconnected with others. People have to be answerable to themselves (and the acts they author) while being attuned to others (i.e., adjusting and adapting). Through each of dialogism, Being-as-an-event, answerability, and the eventness of an event (its immediacy), home economists could understand and do home economics differently.

### Donna Pendergast

Donna Pendergast (Australian) offered the philosophical ideas of *future proofing* and *expert novice*. First, Pendergast (2009) proposed that home economists need to believe (i.e., make part of their



philosophy of practice) that the profession's future depends on them (see also Magee, Yoo, Mok, & Washi, 2010). In particular, "the way ahead is to make links with the opportunities" (Pendergast, 2012, p. 19). The International Federation for Home Economics (IFHE) (2008) called this *future proofing*, which it defined as "anticipating future developments to minimize negative impacts and optimize opportunities" (p. 2).

In more detail, drawing on Rich (2014) (non-home economist), by anticipating what will happen in the future, given current circumstances, home economists can develop ways to minimize the effects of any attendant shocks and stresses. This way, the profession would continue to be of value and viable and avoid becoming redundant and obsolete. It would become flexible and remain relevant. Even as the profession aged, its agility and effectiveness would be maintained (Rich, 2014). It would actually "fit into society's paradigm of 'progress' while simultaneously changing that paradigm" (Kerr as cited in Rich, 2014, p. 34).

Second, in order to future proof the profession, home economists would need to become experts at being novices (Pendergast, 2009), which is Latin *novicius*, 'new' (Harper, 2020). By this, Pendergast meant that home economists should not privilege their existing expertise becoming instead open to always having to learn new things so they can deal with pervasive change. They would become *expert novices* who are open to and comfortable with being inexperienced in a situation. Pendergast (2009) borrowed this term from Gee, Hull, and Lankshear (1996) who defined it as "someone expert at continually learning anew and in depth [and who is not] stressed by this environment" (p. 164).

Expert novices are "good at learning new things" (Pendergast, McGregor, & Turkki, 2012, p. 1). They become experts at relentlessly finding solutions for emergent issues and challenges (IFHE, 2008). Home economists Mberwengwa and Mthombeni (2012) explained that this expertise involves (a) becoming specialists at integrating divergent, complex ideas; (b) being critical of what is happening in the world and how these events impact well-being; and (c) being creative and innovative in problem posing and solving. McGregor (2008b) added that because things are always changing, home economists should change too especially by "letting go of expertise if it is not meeting the needs of society anymore" (p. 137).

### Kaija Turkki

Finnish home economist Kaija Turkki offered two ideas, *integral specialist* and *human action*. *Integral specialist* augments integrated practice (see also McGregor, 2015b). By way of background, Brown (1993) suggested that home economists need to become good at *integrating* basic concepts, purposes, different modes of rationality (i.e., ways of getting and using knowledge), different modes of knowing, and the presuppositions of the disciplines that form the profession's foundation (e.g., science, economics, sociology, psychology). Turkki (2006) argued that viewing home economics as holistic and integrated (rather than a collection of subject-oriented expert specialists) requires a new kind of *specialist*, an integral specialist with "expertises [sic] that integrates, links, bridges, coordinates and communicates" (p. 46).

While this idea resonates with *expert novice*, which too involves integrating divergent ideas (Mberwengwa & Mthombeni, 2012), it is *more*. Being an integral specialist requires building bridges, seeking connections, seeing patterns, and talking across and beyond disciplines (McGregor, 2009b). Wearing this mantel, home economists would "have to pay attention to the dynamics and processes involved, and try to search for all hidden processes as well" (Turkki, 2006, p.46). They would ask 'What is integrated knowledge?' instead of accepting unintegrated knowledge. Furthermore, *specializing* in being *integral* means being concerned about not missing key aspects of a situation and its resolution. Any absence would be noteworthy and consequential, because it is *integral* (necessary) to completing the new whole (McGregor, 2019).

As do other European home economists (see Tuomi-Gröhn & Palojokiy, 2000), Turkki (2012, 2015a, b) has long advocated for a focus on *human action*. She frequently uses the phrase *human action in everyday life* when describing how home economists should relate to the world. (a) They are expected to work through an array of different knowledge, learning and belief systems as they work for human action. (b) Human action requires human processes including but not limited to thinking, acting, learning, human development, and choices related to meeting basic human needs, which are dynamic not static. (c) Human action is informed by time: past, present and future. (d) And, it is affected by stability and continuity; change and transformations; and social, cultural, religious,

ethical, technological and global dynamics. She recently layered on the new construct of *home economics literacy*, meaning home economists need to be literate in all dimensions of human action (Turkki, 2015a, b).

### Terttu Tuomi-Gröhn and Päivi Palojokiy

Still regarding *human action*, Canadian home economist Renwick (2015) suggested that home economists should use Aristotelian human action in their practice: (a) *techné*—produce something, (b) *episteme*—seek truth, and (c) *phronesis*—do what is right. This approach assumes that human actions are voluntary and intentional requiring prior mental acts of deliberation and choice presuming humans are free to make choices. In likeminded thinking, Terttu Tuomi-Gröhn and Päivi Palojokiy (2000) believed that how home economists deal with human action depends on which paradigm they use. Traditional options proposed by Brown and Paolucci (1978) include technical/empirical, interpretive/communicative, and critical/emancipatory. In their seminal work, Tuomi-Gröhn and Palojokiy (2000) recognized these paradigms and added two contextual approaches: situated action and collective activity (see also Tuomi-Gröhn, 2008).

In more detail, *situated* human action assumes that individuals are in an interactive and dialectical relationship mutually affecting *each other*. *Collective* activity (theory) pushes this further by focusing on both the collective and the historicity of activities (i.e., the intersection of progress, purpose, time and history). Beyond a specific person's mental models and their overt behaviour in a specific setting or system (situated human action), home economists would be interested in knowing about the community within which people are choosing, deciding and taking human action (collective human action) (Tuomi-Gröhn & Palojokiy, 2000).

In effect, in addition to being in relationship with other people (situated action), human action in everyday life manifests in “the dialectical relationship between the individual and the society” (Tuomi-Gröhn & Palojokiy, 2000, p.117) (i.e., collectively housed human action). These two contextual approaches to human action move beyond the Aristotelian approach advocated by Renwick (2015), because the latter assumes human action is restricted to a human and his or her environment but not the collective (Tuomi-Gröhn, 2008).

### Jette Benn

Jette Benn (2004, 2006), from Denmark, advocated for home economists to become competent in *thoughtful practice* or, what she called, “knowledge in action” (Benn, 2009, p.11). This means helping people learn how to (a) handle everyday activities (be capable and cope-able meaning dealing effectively with something difficult), (b) be caring of others and the *life world* (a joint state of affairs in which the world is lived and the world has a life), (c) understand the coherence between actions and consequences, and (d) be responsible and willing to participate in the world (take a stand and solve problems). Unthoughtful practice would be careless, not well thought out and not thorough. It would pose a threat to individual and family well-being and their everyday.

Benn (2004, 2006, 2009) drew on Husserl's (1983) *life-world* construct as do most European home economists (McGregor, 2008a). In more detail, Husserl (1983) (German philosopher) viewed the world as having a life of its own, and humans are part of it. There will be moments when one's life and the world's life will be deeply interconnected. People's perceptions of the world's life contribute to their embeddedness within that life. This means that people's perceptions are part of a wider web of perceptions and sensations experienced by other bodies (Heinilä, 2014).

Indeed, adherents of this philosophical approach accept that the body (i.e., *Bodily being*) is an external phenomenon in relationship with others instead of just a physical, innate entity (Heinilä, 2014). McGregor (2008a) explained that through these webbed relationships,

people gain knowledge of their world. To have knowledge of the world is to be *part of that world*, not distinct from it. [This means that home economists can] pay attention to the lives of families enmeshed within the energy and creativity of the life of the world as it unfolds rather than seeing them separate from this life energy. (p. 274).

### Henna Heinilä

Finnish home economist Henna Heinilä (2004) mirrored Benn's (2009) reliance on German philosophers and offered the idea of *humans Being-in-the-World* to augment home economists' normal reference to just *human beings*. Whereas Husserl (1983) spoke of the *life-world*, Heidegger (1962) (German philosopher) conceived *Being-in-the-World* (Hornsby, 2010). This idea is grounded in his conceptualization of time, which "includes an idea of layers. 'What is, what was, and what is to become' exist and build *the moment*. At *one* space and time (one moment), we experience being-in-the-world multi-dimensionally" (Heinilä, 2014, p. 6). Instead of a ticking clock, Heidegger (1962) viewed time as "falling down with folds like velvet cloth" (Heinilä, 2014, p. 6). Everyday life happens in the folds.

As interpreted by non-home economist Hornsby (2010), Heidegger (1962) asserted that people can *care* for each other, because they have an awareness of and relationship with time (*temporality*). Through this care, they can establish a relationship with the world through *concern* for the world. This caring and temporal relationship is expressed through the construct of *Being-in-the-World*. People are totally immersed in the world, because it is all around them, everywhere. This concern helps them decide which decision is the right one for the world so they can move from one human condition to another, through enfolded time (life happens in the folds). Taking this stance helps people live an authentic life or existence by which they fulfil their potential *in the world* (Hornsby, 2010).

Heidegger (1962) also proposed that people are *thrown* into a world that already existed and will continue to after they are gone. And, there are people in this world. Being-in-the-World thus requires people to take the world up into their essence, to absorb it. They then become embedded within it. Once there, they have to gain an understanding of others in the world as a form of *Being-with*. A corollary is that *Being-with-One-Another* means people can only exist in reference to others. Not surprisingly, Heidegger (1962) posited that Being-in-the-World expresses itself through discourse with self, others and the world (Hornsby, 2010).

By discourse Heidegger (1962) meant "not only the usual verbal communication but all the ways the meaning can be brought out" (Heinilä, 2008, p. 55). Meaning-revealing discourse actually helps people move from *Being-in* and *Being-with* toward *Being-for* (anchored in care and concern). Care "signifies a [person's] existence and makes it meaningful. To be-in-the-world . . . is to be 'careful'" (Hornsby, 2010, para. 27). Heinilä (2004) believed that by drawing on the ideas of Unity of Being and *wholesight* (i.e., unify many ways of knowing and being-in-the-world), home economists could choose to honour the interests of all living systems as they strived to understand what it means to *be in this world and for this world*.

### Fusa Sekiguchi

Japanese home economist Fusa Sekiguchi (2004) published a philosophy of home economics based on Bollnow's (1963) notion of *protection* (German philosopher). Sekiguchi's work was originally published in Japanese in 1977 with three co-authors: Takadate Sakuo, Kageyama Wataru, and Mafune Hitoshi. Coincidentally, Brown and Paolucci (1978) published their American philosophical treatise at the same time but based it on two different German philosophers: Arendt (1958) and Habermas (1971, 1973). McGregor (2010) explained their ideas in more detail.

Sekiguchi proffered the construct of *human protection* informed by *habitation*, which Bollnow (1963) understood to be the "relationship between a human being and the world" (Sekiguchi, 2004, p. 52). Habitation (this two-way relationship) takes place in the home first and "secondly within the world *through* the medium of the home" (Sekiguchi, 2004, p. 52). She viewed the home as a place of security and protection from existential despair. When people experience despair, they experience a loss of self (i.e., their existence). With *human protection* comes hope, which thwarts existential despair. McGregor (2015a) subsequently discussed existentialism and its role in home economics philosophy.

Sekiguchi (2004) augmented the ideas of *home as habitation* and *human protection* with other constructs: (a) the first principles of human protection: love, nurturing, humanity, and technology; (b) the protective sphere; (c) the civil minimum (accepted minimum standards by which people

should live); (d) community as protection; and (e) the human condition. “Protecting the domain where families live (from the rampant incursion of the ills of an industrial society) is believed to promote the complete actualization of the true human nature and the soundness of human life” (McGregor, 2009c, p. 3).

## Reconstructing Home Economics Philosophy

This all matters, because philosophy truly does shape what home economists do day to day in their practice (Biedenbach & Jacobsson, 2016; McGregor & Goldsmith, 2010). And, practice informed by a particular set of philosophical stances is cumulative leaving a lasting impression on the world. Appreciating this impact, we have an opportunity to augment present-day practice with new ideas (i.e., future proof the profession). Or, as the inspiration for this paper implied (Rouse, 1996), we can reconstruct home economics philosophy using ideas emergent from engaging with the profession through a philosophical lens.

In agreement, Turkki (2004) asserted that “whether home economics is needed in the future depends on our understanding of home economics” (p. 24). To that end, per Heinilä’s (1999) suggestion, our “task is to study home economics philosophically” (p. 153). That requires turning back to the central questions of philosophy and using them to position home economics philosophically. Indeed, Turkki (2015a) acknowledged that the search for home economics answers will involve posing and answering many philosophical questions pertaining to ontology, epistemology and axiology. Deagon (2014) concurred asserting that “continuing philosophical explorations in home economics stimulate discussion and facilitate shifts in thinking and practice” (p. 139).

Some of the ideas herein fall within the category of how home economists could reframe their identity. In summary, they could assume the mantle of future proofing the profession by becoming expert novices and integral specialists engaged in thoughtful practice focused from a normative stance. Instead of drawing on just Brown and Paolucci’s (1978) three metasciences (i.e., empirical, interpretive and critical), they could adopt a contextual stance and focus on situated action and collectively housed action to better understand human action.

Readers are also reminded of the opportunities to shift to integral, transdisciplinary and complex adaptive system’s thinking grounded in the normative, moral and ethical imperatives to create a bulwark for the human condition. Brown’s (1993) idea about *transdisciplinary human ecology* (p. 408) has yet to be explored in the home economics literature. Although not cited in her 1993 work, Brown’s contemporary, non-home economist Steiner (1993), wrote of transdisciplinary human ecology. He called it “a trans-scientific endeavour” (p. 49), meaning it goes beyond science to include philosophy and the lifeworld. Humans encounter their world on these “three levels of world reference” (Steiner, 1993, p. 50).

Now to the core of the matter. In the collection herein, there was a pervasive focus on *everyday life* and the common threads of *human*, *being*, and *world* (or some combination) (see Figure 2) along with *relationships* instead of well-being, quality of life, and family—the usual home economics mantra. McGregor and Dišlere (2012) noticed the same thing in Latvia (a Baltic country)—a humanistic instead of family-oriented focus. They concluded that *human* as an adjective pertained to human development, psyche, environments, thinking, and morality.

In short, home economists are being asked to accept that the everyday life of people living alone, in families and in households is the very basis of humanity. This means home economists should strengthen *the everyday* so people (humans) are safe and secure in their home or wherever they are living. The following section teases out five big ideas (see Figure 3) emergent from analyzing the thoughts of 11 home economists in six countries. These thoughts resonated with each other leading to a portrait of philosophical building blocks for home economics belief systems.

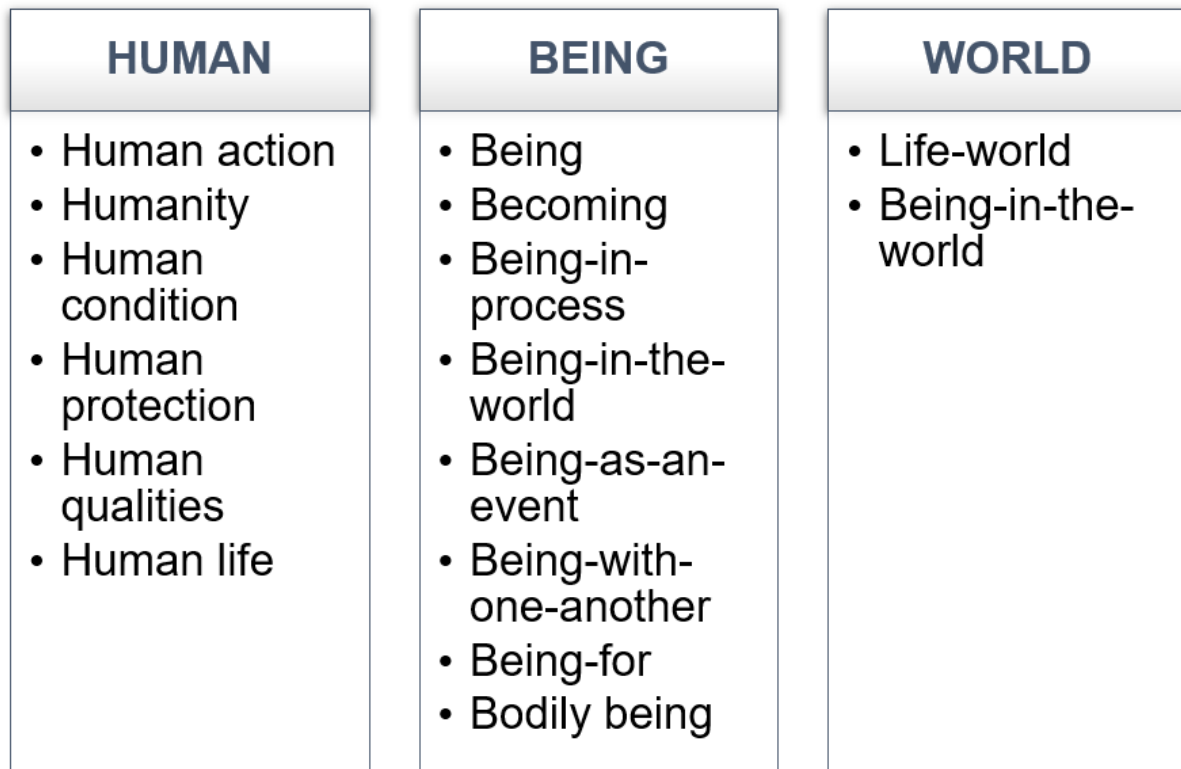


Figure 2. Human, Being, and the World Threads.

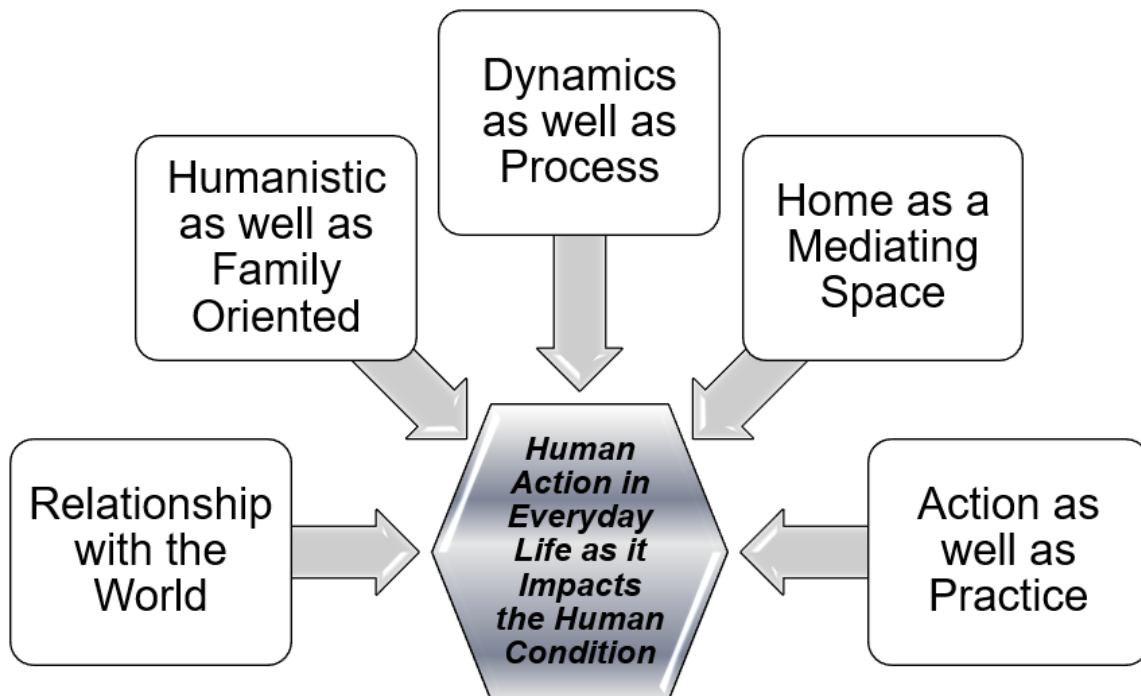


Figure 3. New Philosophical Constructs for Home Economics Practice.

**Relationship with the World**

Many contributors to this collection used the noun *world* instead of *family*, including *life-world* and *Being-in-the-World*. And, the concept of *relationship* was often used but not as it is conventionally

understood as a personal relationship with other people. Instead, humans were seen to be in relationship with the world, even embedded in it. Most home economists focus on the home not the world, and within that home, they examine family life not the life of the world. Accepting that the world has a life of its own and that humans are embedded in that life is a compelling ask.

This is where *Bodily Being* comes into play, for it frames the human body as an external phenomenon that is in relationship with others by which knowledge of the world is gained. The meaning of *body* (a structure) changes when it is tied to *being* (existing with an essence). Bodily beings are enmeshed in the world's life energy. Home economists would see people as *being* in the world *for* the world, not just living in the world.

To explain further, non-Heideggerian thinking holds that we live *in* the world but not in relationship *with* it. Heidegger (1962) believed that through their concern for and care of the world, people develop a relationship with it. It is part of their Being, their essence. In the Japanese context, the *home as habitation* construct also refers to humans in relationship with the world. In this case, the home is the mediating factor to ensure safety and protection. Home economists would focus on the home in order to protect humans from the ravages of a changing world.

### Humanistic as well as Family Oriented

Instead of focusing on the family as a social institution, many home economists in this collection focused on *human beings*. A social institution creates recognizable patterns, predictable order and provides established and stable organization in people's daily lives (healthy or not). Institutions govern behaviour and clarify societal expectations (Brown & Paolucci, 1978). Most *humans* begin and continue life living in a family, a social institution that has major obligations to other institutions (e.g., market, labour, government). Families add and care for members, control and protect them, socialize them into adult roles, and maintain morale and motivation (McGregor, 2009a). She explained that families provide the glue that holds society together and keeps it functioning.

So, what is gained by focusing on humans rather than the family unit? The phrase 'individuals and families' does not have the same resonance as the noun humans. An *individual* is a single person, but *human* as a noun connotes something different—an entire species, all of humankind. In this collection, the term *human life* was often used instead of *family life*. Respecting this insight, McGregor and Dišlere (2012) previously concluded that

a focus on humans draws us toward a concern for humanity and, by association, the human condition (see McGregor, 2010). The condition of humanity is influenced by lives lived out within family units and vice versa. Privileging humans over the family unit broadens and philosophically deepens the definition of the profession. (p. 4).

### Dynamics as well as Process

Two other twists were found in this collection: (a) *qualities of living* (instead of the old standard *quality of life*) combined with (b) viewing the family as the center for developing *human qualities* conducive to the human condition. First, qualities of living connote a dynamic process, which resonates with the human action construct grounded in the verb *action*. Augmenting quality of life with qualities of living means home economists would have to concern themselves with the *dynamics of being alive* necessitating exploring and influencing the forces that stimulate development or change inside and outside the home.

Dealing with dynamics is not quite the same as dealing with processes. Dynamic involves force (likely abrupt, intense, unexpected, uncontrollable) while process connotes a smoother scenario with more control (Anderson, 2014). That said, the *qualities of living* construct has a unique resonance and reverberation warranting further reflection within the profession. Using the family to foster *human qualities* that are conducive to the human condition (Brown, 1993) might well benefit from the new ideas of dynamics and forces at play while being alive. These qualities include a respect for the life world and everyday life, autonomy (freedom to act), attendant responsibilities, and social integration. The latter ensure *human sociation* (Brown, 1993), which refers to the patterns and forms by which people associate and interact with each other (Simmel & Wolff, 1950).

### Home as Mediating Space

McGregor (2016b) delved into the home and household constructs concluding that “the Western notion of household is a quantifiable concept, while home is much more symbolic” (p.1). In the collection herein, home was viewed as a sphere of protection—*home as habitation*—with the latter referring to a human’s relationship with the world mediated *through* the home. Forty years ago, just two years after Sekiguchi (2004) and her co-authors originally formulated their idea in 1977, American Marjorie East (1979) envisioned home economics as “focused on the home in order to improve humanity” (p. 141) with this work happening by working *through* home and family. Both initiatives view home and family as a *mediating space*, a means to an end with the end being an improved human condition for all of humanity.

This philosophical shift would mean reframing home and family ‘as a means to an end’ rather than the profession’s valued end (Brown, 1993). Our ultimate concern would instead be the human condition (Brown, 1993; McGregor, 2010, 2015b, 2019; Sekiguchi, 2004) with the home a secondary concern. As a caveat, the corollary ‘the end justifies the means’ must not prevail. Home and family cannot be sacrificed as a means; rather, they must be strengthened, and that is the true role of home economists.

### Action as well as Practice

As a final point of observation, many scholars in this collection used the notion of *action* more so than *practice*, especially the *human action* construct. Action was viewed as a viable philosophical concept to inform home economics practice. Indeed, home economics *practice* has long been touted as *action* oriented (Renwick, 2015). How do action and practice differ and how are they intertwined? Using the dictionary, “in any given context, ‘action’ is used as an abbreviation for a more fully named notion, like group action.” In this case, that notion is human action and all that it means. Practice refers to customary, habitual *action* or behaviour that is provided as part of a professional service (“Action versus practice,” n.d.).

Practice within a profession is dynamic (Rouse, 1996). In the collection herein, action was a verb modified by the noun human. Home economists are being asked to make sure their practice bolsters *human action*. That is, humans need help taking action to meet basic needs. That help includes how to think, problem solve, learn, make choices, make decisions and so on (Turkki, 2015a). This approach is being suggested instead of ‘optimizing well-being and quality of life for individuals and families.’ On the flip side, home economists would have to engage in *particular* actions within their practice to accomplish the valued end of human action in homes. European home economists are suggesting that our philosophical base (and resultant service) should include *human action in everyday life*. If nothing else, the use of action in conjunction with practice opens the door to dialogue about how this innovation fits within home economics philosophy.

### Discussion and Conclusions

Regarding the central questions of philosophy (see Figure 1), the analysis of the collection herein points to major implications for home economics philosophy on all four axioms.

#### Ontology

If home economists remained open to ideas herein related to what counts as reality, being, becoming and existence, they would believe that dialogics should augment dialectics. Dialogics (discourse about *being*) teases out meanings that people attribute to each others’ thoughts. Uttering and engaging with these thoughts shapes *being* and *becoming* as a person. Instead of assuming there is one reality, home economists would accept that there are as many realities as there are people creating and living them. *Being* (an aspect of reality) is an event not a steady state. And, people are in relationship with others, society and the world, which means their reality, *being* and *existence* are always in process.

#### Epistemology

By association, epistemology is affected, because what we accept as reality will dictate what we need to know about and how we come to know it. Home economists’ knowledge about *the world* would have to change if they embraced *the lifeworld* and *Being-in-the-World* constructs. The world

has a life and energy of its own, and people are embedded in it. Viewing people and their homes in relationship with the world's energy becomes plausible, because the world is alive and has a life. Home economists would have to know about how people's perceptions are shaped by a wider web of perceptions. Their knowledge about families and their daily life would also have to shift to *the everyday* and how people's *human actions* impact the *human condition* (not just their own well-being). Practitioners would learn to appreciate the power of being an *expert novice* and an *integral specialist* both of which inform how they come *to know* about the world's problems.

### Axiology

Axiologically, what home economists value will also be affected. Based on the ideas herein, they would value the *human condition* and bolster it by viewing individuals and families as an *integral means to an end*. The idea of making their *everyday* strong would have merit, and home economists would value working *through* them to effect change for all of humanity not just to make family units strong as the valued end. Home economists would be concerned with *human life* (i.e., the life of humans comprising *humanity*) and its comprehensiveness rather than just the narrower concept of family life (i.e., the life of people living in families), which is still important but for a different reason.

Axiologically, while still valuing *integration*, home economists would appreciate that *integral* and *complexity* thinking is needed while engaging in *transdisciplinary* practice (not just interdisciplinary). They would value input from everyone involved with and affected by complex problems and make room for all voices. They would value the home differently too. Instead of it being a symbolic place where people live, it would become *habitation*, meaning it is the mediating link between humans and their world. Strengthen the link—strengthen humans and bolster the human condition.

### Logic

Finally, home economics' conventional use of inductive and deductive logic, even abductive logic (McGregor, 2014a), may have to be augmented with complexity logic, which lets people cross and connect different ways of being and knowing in creative and coherent ways (Nicolescu, 2014). Complex problems embedded in complex systems (including the life-world) are by their nature unpredictable, and they definitely challenge our usual way of planning for the future. But this does not mean they cannot be understood. Doing so just requires a different kind of logic, one that can process complexity.

The logic of complexity would allow home economists to weave divergent ideas into something new for their philosophical base. This logic would also respect the role of dynamic forces that affect *being* and *becoming alive*. Then, *qualities of living* and *human qualities* conducive to the complex human condition become important. Life is viewed as a dynamic, unfolding process shaped by the *everyday* (time, modality and space), an idea that *quality of life* cannot quite capture.

### Limitations

As one limitation, those using the ideas herein are reminded that the author *purposefully* chose this collection of home economists, because they were judged to be the most prolific contributors to the idea of home economics philosophy (Berterö, 2016). Others may approach this exercise with a different collection of home economists. This would be a welcome addition to the literature. Second, commentaries on work already published are judged on how effectively the author reviewed chosen publications and argued why insights from the process are valuable to a specific audience (Enago Academy, 2019). It is up to each home economist reading this to determine if the argument is cogent and convincing for her or him. Third, home economics readers can personally judge the value of these ideas in their particular context. Their impact on research, policy and practice will be context specific.

### Conclusion

In conclusion, engaging with home economics using thoughts espoused by colleagues from six countries has yielded food for thought for reconstructing home economics philosophy and attendant belief systems. Rachels (1975) cautioned that new philosophical thoughts must meet critics' scrutiny; that is, their prolonged, intense, close, and critical examination. Home economists are respectfully



invited to consider and scrutinize these ideas as possible building blocks for their philosophical belief system and new directions for practice.

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# Enticing Young Professionals to Sustain the Profession: The Role of Professional Associations

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## Abstract

*Professional associations (gateways to the profession) are voluntary organizations that connect and sustain professionals who in turn sustain the association and profession as contributing members by promoting research and work to broader audiences, leveraging research outcomes, and influencing stakeholders. After discussing the topics of professional associations, young professionals, bodies of knowledge (BOK), and professional and academic cultures, eight recommendations were developed that professional associations can consider should they choose to entice young professionals to remain aligned with the profession's culture and the association's BOK after graduation.*

**KEYWORDS:** PROFESSIONAL ASSOCIATIONS, YOUNG PROFESSIONALS, HOME ECONOMICS, BODY OF KNOWLEDGE, PROFESSION'S CULTURE

## Introduction

This position paper serves to reflect the authors' position on the issue of using professional associations to sustain the profession. The intent is to make a well-reasoned statement about the topic anticipating that others will appreciate its merit and engage with it further (McGregor, 2018b). To begin, people enter higher education (HE) postsecondary degree programs with lay notions of their chosen profession. Ideally, the program will socialize them into the profession thereby facilitating their identification with and association as a new, contributing member (McGregor, 2011; 2019a); that is, a young professional. For a myriad of reasons, some graduates choose to take employment in other professions instead of cleaving to home economics. Other disciplines have similar concerns. In journalism, for example, possible reasons for not seeing a future in the profession included insufficient starting salaries to cover student debt and living expenses, a disconnect between working journalists' interests and those of new grads, nondescript job titles and postings, and the availability of better-paid alternatives that rely on similar skill sets (Indeed, 2016).

Some people do not see this premature abandonment as problematic. For example, Hirsch (2018) maintains that instead of preparing for a singular job role or title, postsecondary degrees prepare graduates to problem pose and solve, think critically and divergently, absorb and analyze complex information, see differing sides of an argument, and make reasoned arguments. With this intellectual scaffolding, graduates come away from "a program of learning" that taught them "how to learn" and to figure out "What am I here for?" (para.7). Upon graduation, their role is to "find what [they're] good at, and keep getting better and better at it" (Hirsch, 2018, para. 8).

In an off-handed way, Schmidt (2018) concurs, claiming that "the idea that students should choose majors by trying to guess what the job market will reward several years later is often nuts" (para. 16). Nonetheless, 70% of first year students say they want a university education, so they can make more money rather than develop a meaningful philosophy of life (40%) (Ahlburg & Roberts, 2019). The home economics discipline's stance reflects Hirsch's (2018) sentiment; that is, gaining immediate

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career-related employment is not the main intent, but it is an eventuality. Profession-orientation textbooks encourage home economics graduates to consider an array of career paths (e.g., government, business, education, non-profit, human services) *assuming* that their competencies and skills are transferable and they can succeed regardless of career tracts (Alexander, Holland, & Rambo, 2018; Hitch & Youatt, 1995; Sproles & Sproles, 2000).

With that said, the home economics profession and discipline are not without issues. The academic discipline is struggling with both declining enrolments and school and university unit closures (Arnett-Hartwick, 2017; Godbey, 2016; Schmidt, 2018) making it imperative that those who *do* choose a home economics career remain involved with the profession. This goal is challenged by a recent career-choice trend. Before entering university, people are now shifting their focus from what they *want* to study to “what they *should* be studying—a largely misguided effort to enhance their chances in the job market” (Schmidt, 2018, para. 4). He opines that students erroneously “*think* they have poor job prospects” in common university majors when, in fact, humanities graduates (including home economics) are more likely to be employed than most other disciplines, including sciences and business (Schmidt, 2018). Complicating these academic matters is the ongoing decline in home economics professional association membership, a trend that emerged about 20 years ago (Clarke, 2000) and continues (McGregor & Toronyi, 2009).

Within this triadic context of perceived and actual decline, this paper explores the role professional associations can play in helping graduates consciously choose to become a practicing home economics professional *after* their university socialization into the profession. Of special interest is the role of professional associations in orienting young professionals to the merits of embracing the professional association’s body of knowledge (BOK) and the profession’s culture after they graduate. The assumption is that giving young professionals ‘a home’ after graduation will make them want to steward and continue to align with this professional anchor.

Roubanis (2018) recounts an initiative wherein an American Association of Family and Consumer Sciences (AAFCS) affiliate promoted its BOK to students *while* they were still at university. Wright and Kimberly (2017) discuss using *student* organizations to develop home economics students’ success *while* they are at university. Compared to focusing on students still at university, this paper is about professional associations convincing new graduates (young professionals) to continue to align with the profession *after* leaving university. To scaffold the discussion and recommendations herein, several related constructs are defined as is their envisioned role in this dynamic: professional associations, young professionals, body of knowledge, and professional and academic cultures.

As a caveat, the authors fully appreciate that professional associations are undergoing fundamental change and face challenges in the 21st century. Their role and positioning in the professional arena and society is versatile and contextual evident in seminal studies on the topic (Brooks, 2006, 2007; Dalton & Dignam, 2007; Dalton & Inzeo, 2007). And we are cognizant that the Millennial generation has differing views of professional associations than earlier generations (McGregor & Toronyi, 2009). Nonetheless, professional associations still have a key role to play in the future of professions, and home economics is no exception. The message herein is intended for all home economics professional associations (local, national, regional and international) who are engaged with the issue of how to entice the younger generation to sustain the profession.

## Professional Associations

Professional associations are “essential to the life of the... profession” (National Business Education Association [NBEA], 2006, p. 2). They are a primary gateway to a profession (Moyo & Renard, 2016) helping practitioners to develop and maintain a professional identity. Associations define professionalism, set expectations regarding acceptable professional behaviour and ethical practice, and monitor member compliance (Green, 1982; Sullivan et al., 2014).

They support members and provide professional development (PD) opportunities and use conferences and journals to promote both research and a disciplinary knowledge base. The associations’ services also serve as forums for exchange and networking. Through membership dues, associations attain the resources required to offer these services as well as create scholarships and grants. Associations identify new directions, advance philosophical beliefs, and suggest best and next practices. And they serve as spokespersons and advocates (i.e., a unified voice) generating and promoting the

profession's mission (now) and vision (future) (Berkowitz, Bornmann, & Sain, 2018; Cooper, Lowe, & Ridler, 2004; Green, 1982; Moyo & Renard, 2016; NBEA, 2006).

By meeting these and other obligations, professional associations can contribute to home economists building a deeper professional identity with an abiding connection to the profession. At issue here is the association's role pursuant to mitigating premature postgraduate defection and entreating recent graduates to embed themselves in the profession's culture and association's BOK. "The path to professional status" is one thing; the subsequent voluntary attachment to the profession is another (Morris, Crawford, Hodgson, Shepherd, & Thomas, 2006, p. 711).

## Young Professionals

This paper focuses on professional associations' inclination and initiative to gain the attention and allegiance of young home economics professionals. The term *young professional* arises from the 1980s' term *yuppie* (young upwardly mobile professional). Young professional now refers to recent professional-program graduates, in their 20s and 30s, aspiring to or working in a profession. Managed and led properly, the energy of young professionals can shape and alter a profession (Arora & Andrew, 1998), innovate its BOK to meet contemporary issues, and ensure the profession's future. This is why it is imperative that young professionals are not lost to other ventures; they need convincing that they can best serve themselves and others within the arms of the profession.

All professional associations must recruit young members (not the same as new members) so the association and profession are future proofed with "the next generation of professionals" (Gronseth, 2018, para. 2). Younger members are future leaders, but most associations struggle to communicate with young professionals (Berkowitz et al., 2018). Virtually half (48%) of professional associations surveyed were challenged when it comes to engaging with young professionals. Nearly two thirds (60%) of associations felt it was very/extremely important to offer them leadership development opportunities, but 80% did not have a good understanding of their needs (Berkowitz et al., 2018). The latter statistic is concerning, because "growing a robust population of young professionals is essential to the future of [the] organization [and profession]" (Gronseth, 2018, para. 2).

At the global level, the International Federation for Home Economics (IFHE) now has a Young Professional Network (YPN) created in the mid 2000s (Arcus, 2008). As with other YPNs, the IFHE network gives a voice to young home economics professionals and provides a venue for information exchange, peer networking, career advancement, and promotional awareness of the profession (IFHE, ca. 2013). It also provides opportunities to strengthen cross-cultural communication skills, participate in an international professional community, disseminate and build the discipline's knowledge base (via a professional journal and conferences) and invest in the future of IFHE and the home economics profession (Arcus, 2008).

National, regional and local home economics professional associations are encouraged to model this approach by implementing young professional programs. In Canada, the national student-run professional association (Association of Canadian Human Ecology (Home Economics) Students, ACHES) purposefully aligns with provincial professional associations. ACHES' work, which unfolds *while* students are at university, involves connecting students Canada-wide and promoting the profession (ACHES, 2017). In the United States, both AAFCS and Kappa Omicron Nu (KON) have campus and/or state student affiliates that professional associations can approach as gateways to new graduates (Roubanis, 2018).

Professional associations could entice these young professionals into the profession by forming YPNs that are coled by young professionals, so graduates can stay connected with the profession *after* leaving university. The specific intent of any YPN would be to socialize young professionals into why it is imperative that they continue to align with the association's BOK and profession's culture. The professional association serves as a bridge between young professionals and the entire profession not just a *specific* association.

## Body of Knowledge

Professional associations are charged with facilitating the (a) profession's evolution, (b) discipline's research culture and knowledge base (built up by the academy) and (c) BOK (created by professional associations) (Cooper et al., 2004; Green, 1982). For clarification, a body of knowledge is the

complete set of agreed-to concepts, terms, principles and activities that make up a professional domain as defined and advocated by the relevant professional association (Hernandez, 2012). BOKs “contain the main domains of learning and respective high-level topics or knowledge areas” that define a profession’s intellectual gambit (McGregor, 2015, p. 17). As a point of interest, AAFCS is the only home economics professional association in the world that has a fully articulated BOK (details at Nickols et al., 2009).

McGregor and Toronyi (a young professional) (2009) prepared a blueprint for home economics professional associations to follow if they chose to actively target, recruit and retain the millennial generation (i.e., young professionals). They alluded to the gap between completing university and becoming a sustained, active professional with deep ties to the BOK. They recommended that professional associations “continue to update the emerging ‘body of knowledge’ statement, soliciting Millennial input” (p. 13). Cooper et al. (2004) also suggested that professional associations facilitate member involvement in developing and evergreening the BOK.

This inclusive strategy better ensures that young professionals continue to be engaged with the discipline’s knowledge base that they were exposed to during their university socialization process. But in this case, the professional association cherry picks particular elements of this knowledge base and frames them as its preferred BOK to guide practice (see AAFCS’ BOK at Nickols et al., 2009).

To clarify, BOKs are created by professional associations in consultation with academic disciplines who are charged with generating the field’s knowledge base (Hernandez, 2012). That being said, in their role of sustaining the profession using a BOK, professional associations could consider establishing relationships with other actors including governments, businesses, educators, and extension. Their lived experiences with the profession in action can be used to inform the BOK’s evolution.

## Professional and Academic Cultures

In addition to enticing young professionals to enter into and remain in the profession and embrace the association’s BOK, becoming a professional (moving beyond student status) entails embracing the profession’s culture, which professional associations perpetuate. This culture manifests in several ways: common (espoused and implicit) values and beliefs; norms (ways to join, meet, act); language and jargon; symbols, images, lore (traditions); and insignia (distinguishing marks of authority). A profession’s culture also includes good and bad stereotypes and perceiving (or not) the profession as one’s life work (Anderson, 1976; Greenwood, 1957, 1966; Evans, 2008; Kieren, Vaines, & Badir, 1984; McGregor, 2019b; Weigley, 1976).

In this culture, “professionals tend to adopt the value system and develop behaviour patterns consistent with their peers; they learn to ‘walk and talk’ alike” (International Civil Aviation Organization, 2013, p. 2-11). Home economics is both a profession and a discipline. The profession’s culture is different from but augmented by the *epistemic* culture of the attendant discipline area; that is, it is different from the knowledge, methods, validity and scope of the companion discipline (McWilliam, Hearn, & Haseman, 2008). An epistemic culture exists within a *discipline* and sustains and regulates core assumptions about *knowing* within *that* discipline (Knorr Cetina, 1999). To illustrate, Brown and Paolucci (1979) propose three ways of knowing in the home economics discipline that translate into practice in the profession’s culture: technical (analytic and empirical), interpretive, and critical.

In short, the home economics profession’s culture depends upon and perpetuates an association’s BOK that is informed by the epistemic home economics academic culture and knowledge base (McGregor, 2016b). Appreciating this relationship makes it possible to charge home economic academics with responsibly advancing the *discipline’s* knowledge base (accumulated over time) so that the *professional association’s* BOK (purposefully-pulled-together ideas) can evolve. Likewise, professional associations have the responsibility to apprise university programs of innovations and needs within the field (Moyo & Renard, 2016) so the discipline’s knowledge base remains evergreened. Consequently, professional associations need to nurture partnerships with the HE academic community (NBEA, 2006) and partake in curricular review and development (Moyo & Renard, 2016).



## Discussion and Recommendations

This section contains a collection of recommendations for professional associations to consider should they assume the role of stewarding young professionals into the profession so the latter can purposefully steward the profession. Each numbered recommendation is prefaced or followed with key discussion points that provided a supportive rationale (McGregor, 2018b). Their development emerged from iterative readings of the literature review and discussion points to discern possible remedial and forward-thinking actions open to professional associations embarking on this path.

Many professional associations have a student membership category with varying degrees of recruitment intensity (Moyo & Renard, 2016). Professional associations have tended to stay away from the university setting unless involved in program accreditation (Moyo & Renard, 2016) waiting until after graduation to approach graduates to join (an exception being outreach initiatives described by Roubanis, 2018). Also, many higher education students have little knowledge about professional associations and tend not to join until after they graduate (unless required for program completion or as a mandatory licensure for employment) (Michael, Keller, Tran, Sayles, & Custer, 2016).

When it comes to gaining professional certification or registration after graduation, students face the requirements of a minimum record of working hours, a portfolio of relevant job and/or volunteer history, and application fees. But often their university student experiences do not count. This creates a situation wherein young graduates are unsure of when they *actually* become a member of the profession. This scenario makes it hard for graduates to visualize their role in the profession when their own careers or employment opportunities have not yet emerged. To complicate matters, young graduates have varying degrees of debt and financial insecurity transitioning from the academic to working world. Being asked to pay association membership fees without immediately gaining registration or certification raises doubts about both the value of maintaining membership and uncertainty around whether they are finally a part of the profession.

**Recommendation #1:** Given the need to prevent graduates from prematurely abandoning the profession, professional associations have to be there when these young professionals walk out the university doors.

Graduation is a milestone, a life achievement. Messaging matters in this liminal period. Ideally, it would intentionally be designed to convince young professionals of the merit of working within the profession, not just joining a *particular* association. Holland (2018) very recently found that home economics “teachers’ planned persistence in the profession is significantly affected by their method of entry into the profession” (p. 97). They were more likely to intentionally stay attached to the profession if they had entered it from a home economics-focused teacher education program rather than an alternative teacher certification program.

If this finding holds for all home economics graduates (not just teachers), it implies that ‘planned persistence in the profession’ depends on the university’s undergraduate program, which is charged with socializing students into the profession *after* they enter the program. A challenge to this idea is Schmidt’s (2018) recent claim that students’ priorities and opinions of university disciplines “are being formed *even before* [emphasis added] they see the inside of a college classroom” (para. 2). Low opinions of a discipline mean lower enrolments and fewer professionals. If Schmidt’s (2018) observation is true, professional associations can contribute to planned persistence in the profession by working collaboratively with higher education programs to proactively market the discipline and profession in a positive light to students so they can pass the word and be ambassadors for the profession (McGregor, 2018a).

During the socialization process at university, students likely learn what it means to *be* professional (i.e., professionalism) (McGregor, 2011, 2016b, 2019b), but many young professionals may not fully appreciate what *a* profession is and why aligning with it is so important to them and the profession. Furthermore, professors who teach home economics classes, but do *not* identify as a professional home economist in rhetoric or professional title, may be indirectly implying that students are not aligning with a profession, even those professors whose understanding of the discipline’s knowledge base is enough to be on the forefront of socializing graduates into the idea that they *are* joining a profession.

**Recommendation #2:** To address these uncertainties, professional associations should add the concept of ‘a profession’ to their messaging when they engage with young professionals.

Succinctly, a profession is “a disciplined group of individuals who adhere to high ethical standards and uphold themselves to, and are accepted by, the public as possessing special knowledge and skills in a widely recognised, organised body of learning derived from education and training at a high level, and who are prepared to exercise this knowledge and these skills in the interests of others” (Professions Australia, 2000, para. 1; see also Kieren et al., 1984; Matthews, 2012). In varying degrees along a continuum, professions have their own culture as well as a systematic body of theory and knowledge, autonomy (control over their work), authority and expertise that are sanctioned by the public, and a code of ethics for responsible practice (Greenwood, 1957, 1966; Kieren et al., 1984).

Professional associations help professions by formulating codes of ethics, policy statements attesting to the profession’s essence, and scope and standards of practice documents (Matthews, 2012). They give voice, power and credibility to the profession. These legitimizing contributions have more impact if the association is a legal entity properly registered according to the country’s legislation (Moyo & Renard, 2016). When membership comprises a concentration of experts in various strands of the academic discipline associated with the profession, the association is particularly strong—“a powerhouse of professional expertise”—meaning the profession itself may also be seen as strong (Moyo & Renard, 2016, p. 3).

Sustained by professional associations, a profession has huge responsibilities to the public and the common good (Kieren et al., 1984). Home economists are in service to the public and do their work *through* individuals and families (East, 1979). By optimizing people’s quality of life, standard of living and well-being, the home economics profession strengthens community, society and humanity.

**Recommendation #3:** By messaging this common good-related opportunity and obligation, professional associations can give young professionals a powerful reason for remaining in the profession after graduation. “Clarity of purpose [about the profession] is important [because] only those who shared the dream would join.... [People would not inadvertently] join for the wrong reasons [and then leave the profession]” (East 1979, p. 141). Nor would they fail to join due to unclear messaging and misperceptions of the discipline and profession (Schmidt, 2018).

East (1979) further frames home economics as “a focus on the home in order to improve humanity” (p. 141) achieved by using the contexts of home and family to help people to reach their human potential. The home and family serve as a matrix within which things develop (East, 1979). However, compared to home and family, humanity is often viewed (erroneously) as a large philosophical construct (McGregor, 2010, 2016a), meaning humanity can be daunting and off putting.

**Recommendation #4:** Messaging about the profession’s focus on home and family for humanity’s sake can thus be both enticing and intimidating, but professional associations could package it so young professionals would be receptive to it.

Who wouldn’t want to be involved with a profession with the clear mandate of improving and sustaining humanity? East claims that “the ultimate goal [of home economics] is to make life successfully better for each generation—the time-binding principle” (1979, p. 141). Framed this way, home economics would thus represent a rich blend of pragmatism and altruism, something young professionals tend to value. They want to make an immediate *and* long-lasting difference with their professional work (McGregor & Toronyi, 2009; Roubanis, 2018).

**Recommendation #5:** The home economics discipline and profession were formally founded more than one hundred years ago, in 1908. Professional associations can use this fact to entice young professionals to continue to align with such a long-standing profession. This timespan intimates security and longevity warranting purposeful alliance; home economics is not a flash in the pan.

Indeed, any profession’s future depends on young professionals’ continued alliance, support and advocacy (NBEA, 2006). Promoting the professional organization’s BOK—if it has one—is one way to approach this. These official documents identify the key concepts, processes and principles shaping

young professionals' practice (McGregor, 2015). The existence of an entire body of knowledge reinforces the perception of longevity within the discipline. Young professionals can feel more confident when advocating for the profession's legitimacy and prestige.

**Recommendation #6:** In the event that a body of knowledge document does not yet exist, it behoves professional associations to socialize young professionals to insist on its development. The BOK is "the philosophical platform to all practitioners" in the profession (Roubanis, 2018, p. 64). Its absence threatens profession-wide consistency in practice and creates a void for what young professionals should emulate.

Instead of complacency or procrastination, professional associations can undertake this demanding task and recruit young professionals to both participate and hold the association accountable (McGregor & Toronyi, 2009). After all, the research, knowledge and theory base they were exposed to at university is still fresh in their minds. Elders in the profession and seasoned academics can all benefit from young professionals' insights and vice versa. And Nickols et al.'s (2009) articulation of AAFCS' BOK means other home economics professional associations have a template for inspiration. It is irresponsible to expect young professionals to embrace a BOK if it is nebulous or not clearly articulated.

Once the BOK is created, students and graduates "need multiple opportunities to cultivate a working understanding of [it]" (Roubanis, 2018, p. 64). With this understanding in place, professional associations must then creatively help young professionals to understand how the BOK applies across all areas of the profession so that this philosophy can manifest in their work *within* the profession (Roubanis, 2018), which by association is strengthened and sustained.

Regarding how professional association membership can strengthen the profession, young professionals mainly join associations to gain networking, career advancement, and educational benefits in the *formative* stage of PD (Carpenter & Miller, 1981; Chernow, Cooper, & Winston, 2003) - they do not intentionally join the association to strengthen the profession.

**Recommendation #7:** Home economics professional associations can use Carpenter and Miller's (1981) four-stage model of association engagement when approaching young professionals and affirm that not only do they gain membership benefits by joining the association but also the chance to sustain the profession.

In more detail, research shows that after the formative PD stage, members become less involved with the association, and perhaps the profession itself, because they are so focused on work and career (*application* stage) (Carpenter & Miller, 1981). Fortunately, if young professionals are successfully nurtured over time, professional associations can approach them during the *additive* stage of their career wherein practicing professionals assume leadership roles. The final stage is *generative* in that professionals mentor and influence the profession as a whole (Carpenter & Miller, 1981; Chernow et al., 2003), the ultimate goal of approaching young professionals in the first place.

Mapping out this potential professional progression for young professionals affirms the potential they have over the course of their career to embrace the association's BOK and profession's culture thereby sustaining the profession. Modelled this way, it can be presented as a natural progression with the professional association being the catalyst and enabler. PD activities for home economics practitioners need to be flexible and adaptive to participants' maturing needs and abilities (Robinson, 2019).

**Recommendation #8:** On a final note, continued allegiance to the profession is more likely if professional associations can clearly articulate and entice young professionals to embrace the profession's culture.

This requires the not-so-mundane task of defining culture and explaining that professions actually *have* a culture comprising the customs, institutions, character and accomplishments of the group accumulated over time. A professional culture is collective and attitudinal rather than individual and behavioral (which characterizes professionalism). The culture pertains to generally accepted ways of and attitudes toward working and being in a profession (Evans, 2008).

Each profession has a distinctive normative and prescriptive cultural configuration (Hoyle & Wallace, 2005). This professional culture permeates all aspects of professional life and is essential to the profession's overall well-being. Because culture sustains community, including a professional community, professional associations are charged with creatively explaining the profession's culture to young professionals and enticing them to partake. A rich reciprocal relationship could ensue—the professional culture sustains young professionals and they sustain the profession.

In summary, eight recommendations (with supportive rationale) were tendered for professional associations to consider if and when they decide to engage with young professionals to convince them to obtain professional association membership so they can contribute to sustaining the profession (see Figure 1).

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- **Meet graduates as they leave the university and convince them to align with the profession (not just a specific association), making the profession their 'home'**
  - **Message about 'what is a profession' and why purposeful allegiance is warranted (not the same as professionalism)**
  - **Explain that home economics works *through* family and home to improve humanity (serving the public and the common good)—a laudable reason to remain true to the profession**
  - **Develop, foster, evergreen and promote a body of knowledge (BOK) document—the profession's philosophical platform**
  - **Recruit young professionals to contribute to and embrace the BOK, and promote opportunities for them to engage with it**
  - **Frame profession as long-standing with this longevity worthy of allegiance**
  - **Explain that young professionals have career-long opportunities to contribute to the professions as their needs and abilities mature**
  - **Frame the home economics profession as having its own culture that sustains young professionals and needs them to sustain it**
  - **Nurture contributory relationships with higher education programs and apprise them of needs and innovations within the field**
  - **Create young professional networks (YPNs) and serve as a bridge and catalyst to the profession (not just a particular association)**
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Figure 1. Recommendations for professional associations convincing young professionals to purposefully stay in the profession.

## Conclusion

In the triadic context of closures to academic units and declining university enrolments, declining professional association membership, and new graduates' inclination to prematurely abandon career tracts within home economics, professional associations have to embrace their inherent responsibility of helping young practitioners to develop and maintain a professional identity with the profession's culture and the association's body of knowledge. To that end, recommendations were tendered for how this might happen, hopefully providing food for thought for future membership recruitment, retainment and enrichment initiatives. To reiterate, professional associations sustain young professionals who in turn sustain the profession.

## Author biographies

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## Digital diet planning task in a Food and health subject curriculum in teacher education

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### Abstract

*This practitioners' inquiry focuses on students' and teacher educator's experiences and reflections in implementing a digital diet planning task (DPT) as a learning/teaching method in an academic primary and secondary school teacher education at Oslo Metropolitan University (OsloMet). DPT involved students individually registering of all foods and beverages they ate during a 24-hour period, computing nutrients and energy consumptions by using a digital program and evaluated their diets by comparing these with the Norwegian Health Directorate's nutrients and diet recommendations. They also reflected on what food they could remove or substitute in order to consume a healthier diet.*

*The data was collected by a questionnaire administered to 23 students, interviews of eight students, and teacher educator's observation notes. The findings indicate that the task made the students more aware of healthy food choices based on scientific knowledge and regarded DPT as relevant to their future teacher careers. Most students responded positively to DPT as a teaching/learning method and meant that DPT supported their learning of the subjects' content knowledge but only little new digital skills. The results indicate that several students had propositional content knowledge, teachers' knowledge and professional knowledge.*

**KEYWORDS:** FOOD AND HEALTH SUBJECT CURRICULUM (FH1), TEACHER EDUCATION (TE), DIGITAL DIET PLANNING TASK (DPT), PRACTITIONERS' RESEARCH, STUDENTS' LEARNING.

### Introduction

In Norway, the political expectations for teacher educators' and teachers' professional competence are high (The Norwegian Ministry of Education and Research, 2018). The teacher educators are stakeholders in teacher education (TE) (Selmer, Bernstein, & Bolyard, 2016). They contribute to the education quality in many ways not only because they may model exemplary teaching (Lindstøl, 2017), but also because their understanding of knowledge influence how they prioritise and organise the contents in teaching. Teachers' knowledge is discussed in research literature and several concepts are used in describing teachers' knowledge base. Shulman (1986) uses "subject matter content knowledge" referring to disciplinary content knowledge, and "pedagogical content knowledge" when referring to "distinctive bodies of knowledge for teaching" representing "blending of contents and pedagogy into an understanding how particular topics..." can be taught, as categories in teachers' knowledge base. Winch (2014) writes about professional knowledge and uses the concepts "knowing that"-knowledge in describing the theory behind a professional practice and "knowing how to"-knowledge in describing how to use theory in the professional work. Furthermore,

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the expectations of research-based teaching requires a double role wherein teacher educators not only teach but also are active members in researcher communities (Munthe & Rogne, 2015).

TE in Norway should be research- and experience based, while simultaneous innovative and professionally oriented (Regulations on the plan for primary school teacher education, years 5-10, 2016). Policymakers expect that teacher education institutions develop effective evidence-based practices (EBP). However, EBP has been discussed widely. Several definitions has been suggested without any consensus (Biesta, 2013; Cordingley, 2008; Kvernbekk, 2016). However, research perspective on learning activities can strengthen students' abilities in learning how to teach (Korthagen, Loughran & Russel, 2006). Accomplishing evidence based teaching practices requires including practical and theoretical perspectives on teaching, and using newer constructivist learning theories (Canepescu, 2009), which emphasize student centred learning methods.

Several researchers have documented that although student-centered learning can be understood in different ways, it generally has positive influence on students learning. Bonwell & Eison (1991) write about strategies for promoting active learning. They remarked that active learning in the context of higher education demands that students are involved directly in higher-order thinking tasks such as analysis, synthesis and evaluation. Student-centered learning can be seen as learning in which students are encouraged to control their own learning processes to reach desired learning outcomes (Schleizer, 2011). Hattie (2012) summarised his findings in this area by highlighting students' capability in self-regulation, self-monitoring, self-evaluation, self-assessment and self-teaching. He emphasised the importance of teachers' considering themselves as evaluators of how their teaching affects students' learning. Findings in our previous study about inquiry-based learning in student-led lessons in the context of course food and health 1 (FHI) in TE (Müller & Sørberg, 2017) show that student-led lessons can be an effective method for developing student-centered learning. Teaching/learning method refers here to how the content is taught and learned.

Digital skills are part of teachers' knowledge base and professional knowledge. Tømte, Kårstein & Olesen (2013) studied how teacher students develop professional digital knowledge and skills in creating pedagogical practices by using information- and communication technology during their education. Concerning digital competencies, they observed a gap between the political expectations and practices in TE. Gudmundsdottir, Loftsgård & Ottestad (2014) pointed out that students are expected to keep pace with the developments in societies' digital technology because digital competence provides opportunities for developing new and varied teaching/learning methods.

The TE subject FH in Norway and the equivalent international subject Home Economics are scarcely studied field in which little is known about how students develop subjects' content knowledge, pedagogical content knowledge and professional knowledge.

## **Aim**

The aim of this study is to analyse and describe students' and teacher educators' experiences and reflections in implementing the digital diet planning task (DPT) as teaching/learning method in the course Food and Health 1, in primary and secondary school teacher education at Oslo Metropolitan University (OsloMet) in Norway.

## **Context of the study**

The context of the study is the course FH1 (30 ECTS) at Oslo Metropolitan University (OsloMet). In 2006 the subject Food and Health (FH) replaced Home Economics in the Norwegian national curriculums in primary and secondary school education (The Norwegian Directorate for Education and training, 2006). National guidelines (National Council for Teacher Education (NCTE), 2016) complement the regulations and are mandatory basis for designing local course plans. The guidelines express the expectation for the students' learning to teach the basic skills including digital skills, as part of their future professional competencies, and the expected learning outcomes for students' learning in various subjects.

Learning outcomes are commonly understood as the learning results that students are expected to achieve at the end of their studies (Ross, 2000). However, different definitions of learning outcomes have been suggested (Prøitz, 2010) in order to emphasise a more process-oriented understanding. In

this study, the following learning outcomes were chosen as the most relevant for students' working with the DPT.

The student:

- has knowledge of foodstuffs and food processing, and knowledge about general education on healthy food.
- is capable of using digital tools in teaching.
- is capable of critically assessing dietary information and teaching materials according to the existing research.
- is capable of using subject specific concepts and terminology and of finding, applying and assessing research-based knowledge of relevance to the subject FH.

### Digital diet planning task

DPT is one of the work requirements for the course FH1 and DPT is one of the compulsory assignments that must be approved by the teacher educator before the student gets access to the final exam. The students used the DPT in assessing the nutritional quality of their own one-day diet compared to the Norwegian Health Directorate's recommendations for nutrients and diet (2011). The learning goals for the DPT were developed according to the learning outcomes mentioned previously. The goals specify the subjects' content knowledge and pedagogical content knowledge in DPT. They were used as a starting point for assessing students work with DPT. The learning goals for DPT are:

The student:

- is able to evaluate information about foods and processed foods, register diets, calculate the nutritional content in food and understand how different nutrients promote health in the population.
- can replace some foods in her/his own diet for achieving healthier diet.
- can use digital tools for learning in subject FH
- is able to consider and use the DPT as learning/teaching method
- can critically assess and/or compare diet information and the results of their diet registrations with the existing recommendations for nutrients and health promoting diets.

The students documented their work with DPT in a written report delivered individually in to a digital learning platform for feedback and approval from the teacher educator. To register their one-day diet, the students used the digital diet planning calculation program "Kostholdsplanleggeren", developed by nutritional experts at the Norwegian Directorate of Health and The Norwegian Food Safety Authority (n.d.). The diet calculation planner is an educational diet calculation program designed to display, compare and calculate nutritional content in various foods, meals, small and large menus. It is a free data program, a suitable teaching/learning method in the subject FH in primary- and secondary schools, teacher education, in nutrition and health science courses in higher education, private enterprises, and also useful for individuals.

Working with DPT, the students calculated the energy (kcal/kJ) in foods they ate and estimated their total energy consumption in terms of the chosen physical activity level (PAL). Furthermore, they calculated the amounts of protein, fat, carbohydrates, dietary fibre, vitamins, trace elements and minerals. It was also necessary to calculate the energy percent originated from proteins, fats and carbohydrates. Fat quality in terms of fatty acid composition was also evaluated. Each of the nutrients, included vitamins and minerals, was evaluated separately. The registered amounts of nutrients in the student's diet were compared with the official nutritional recommendations (Norwegian Directorate of health, 2011) and the results were evaluated.

The students reported how they assessed the under- or over-consumed nutrients to discover how they could improve the nutritional quality of their diets. If the calculated figures in the diet deviated from the nutritional recommendations, the students were to suggest what kind of other foods should be substituted to obtain a healthier diet. In performing this task, the students utilised the nutritional textbook, used individual tables or graphics from the digital program and enclosed these in their final report. Thus, by working with the DPT, the student learned to construct knowledge about their own diets, compare and evaluate their diet against the official recommendations for nutrition and diet.

## Methods

This empirical study is a practitioners' inquiry focusing on teacher educator's and her students' experiences and reflections in implementing the digital diet-planning task (DPT) as a learning/teaching method. It is research- and development work (Cochran-Smith & Lytle, 2009; Cordingely, 2008; Munby, Russell & Martin, 2001) aiming to develop our own teaching practice at the TE course FH1 at OsloMet. However, the results can also be useful in other similar contexts.

The data consist information from three sources: A questionnaire from 23 students, interviews of 8 students and teacher educator's observation notes. The printed questionnaire (Dalland, 2000) with open-ended, evaluative questions based on our earlier teaching experiences was developed to gain an overall picture of 23 of our 32 students' experiences with DPT. The students answered questions anonymously at the university after finished the task. The main questions mapped how the students experienced the importance and relevance of the task and in what extend DPT helped them attain the learning goals. We read the students' answers to the questionnaire several times, and summarized them. To gain a deeper understanding of the students' experiences and reflections on the task, an interview guide was constructed for piloting the semi-structured face- to face interviews (Brinkmann & Kvale, 2015). The teacher educator's field notes (Angrosino, 2007) consisted of their systematic observations and reflections on the students' work with DPT and their evaluations of the students' reports. We analyzed data manually by adapting the content analysis method (Hsieh & Shannon, 2005). However, interviews produced only minor data in this study. We present the results of the data analysis in the following sections, findings and discussion, after the ethical aspects of the study.

## Ethical considerations

Our research followed the recognised ethical standards drawn up by the Norwegian National Committee for Research Ethics in the Social Sciences and the Humanities (2016) to protect the individual students' confidentiality. We informed the students about the study in advance, and asked for a voluntary participation. Students could withdraw their participation at any time and the students' identities were kept entirely anonymous.

## Findings and discussion

This study show that DPT has several benefits for the students' learning and the teacher educators' teaching. The teacher educator developed and implemented DPT for meeting the requirements for research- and experience- based, professionally oriented teacher education where students' active learning is prioritised. The students should learn how to calculate the nutrients effectively, compare and analyse their food and beverage consumption with official recommendations, and evaluate their daily diets with the existing research-based knowledge about nutrients and diet which means that the DPT has potential in contributing to the development of higher-order thinking skills.

### Students' experiences, reflections and considerations

The summary of the students' answers to the questionnaire indicated that students had experienced benefits from the diet planning program as a teaching/learning method. In the questionnaire, many interesting, positive answers and few negative ones were found. The DPT gave students the opportunity to learn and apply research-based nutritional knowledge and understand what constitutes a health promoting diet (The Norwegian directorate for health, 2011).

The national guidelines for TE (NCTE, 2016) and national curriculum for primary- and secondary school (Education Directorate, 2006), require that teacher students and pupils learn knowledge about nutrition and can use it in choosing their foods. The following quote from the questionnaire illustrates subject matter content knowledge the student has gained (Shulman, 1986) about nutrition "I attained more knowledge about nutrients and their importance to the body". Another student seemed to have learned professional knowled when combining the "knowing that" and "knowing how" knowledge about nutrition: "[...] good to get to know the diet calculation programme and to apply theory in practice".

The overall purpose of TE in different countries is to teach students how to teach school subjects (Donche & Van Petegem, 2011). However, the results of our analysis indicated that several students used subject matter content knowledge about healthy diet in different contexts, and produced new

contextualised practical knowledge which refers to their learning of professional knowledge. One student expressed it in this way: “[...] a lot of knowledge relevant to the Food and health profession”.

In Norway, it is expected that teaching is research and experience based on all levels of education (Munthe & Rogne, 2015). Knowledge about nutrition in the course FH1 is an example of research based knowledge. The DPT gives the students experiences of using nutritional knowledge in adjusting their own one-day diet, and how it can be taught and learned. The students need also experiences in how to make professional judgements, for example when choosing the contents and methods for teaching nutrition. Our students’ answers in the questionnaire indicated that they had experienced benefits with DPT as a content and method in their learning processes.

Our data show that the DPT contributed to research based TE (Munthe & Rogne, 2015) in several ways. The students gained knowledge about nutrients and diet from the official recommendations that are based on a large amount of international research. One student wrote that “[...] one gets a chance to compare with recommendations from the Health Directorate”. The students also orientated themselves with nutritional disciplinary vocabulary when discovering, applying and evaluating research based knowledge relevant to the school subject FH. Because the official recommendations are simplified into every-day language in order to be understood by many different target groups, the students considered the differences between scientific, professional concepts and informal language. The diet planning program updates regularly according to new research, and thus gives students access to the recent information. We suggest that this task can have a potential in making the students more aware of the healthiness of their own food choices based on scientific evidence which can give a good start when they teach nutrition to the pupils. Comments from two students underpin this: “I have become more conscious of my own diet” and “Nice task to see nutritional content in your own diet and to be aware of the changes that can be profitable”.

Several students were positive about using the DPT in their future professional life in primary-and secondary schools. Following examples from the interview data highlights this: “I think it was an educational experience which I can use in teaching my pupils as well”. The diet calculation program is probably suited for slightly older pupils, as another student stated that DPT could be used as a teaching material, content and method in teaching:

“Especially in secondary school [...] pupils can learn what they eat [...], nutritional content is important, [...] the teacher can give demonstrations with the digital diet planning program”. One student wrote that the food registering provided fewer opportunities for learning, while it was instructive to analyse the figures. This indicates that the student understood that the task involves some routine work, but also that for a teacher there was something more challenging to be considered. Furthermore, the students experienced how the teacher educators used the DPT as a teaching method in FH1. Model learning (Lindstøl, 2017) is usual in TE and refers to one of the strategies how students learn teaching and gain pedagogic content knowledge (Shulman, 1986).

This study give no clear impression of whether students recognise DPT as a student-active learning or not. However, one student meant, “I learnt little about the lack of nutrients in the diet [...] but more about nutrients and got involved in changes one should make in the diet and the consequences of not making changes”. This could possibly mean that this student considered this task as a form of active learning form because the student used the active verb phrase “get involved in” in describing DPT. One student commented that DPT was an active process: “I generally had little knowledge about this [nutrition], so it was very educational [...] one learns a lot about working with the task [...] and about a day’s diet”. Another student argued that the task “makes one take more conscious food choices”.

One student evaluated the advantages of DPT on her/his own measurement scale: “The benefits were an 8 out 10”. Another commented “No need to change anything for me” which indicates that the student was satisfied with the task, and she answered all the questions positively. This supports our consideration that positioning oneself positively in a learning process can possibly assist learning. Most students had no trouble in understanding the diet planning program *Kostholdsplanleggeren* which one student indicated: “A simple program that did much of the job. Only the interpretation we had to do ourselves”. Another student claimed in the interview that, “...our generation has high digital skills”. Thus, we believe that DPT had minimal influence on the most of our students’ learning of digital skills. However, two of 23 students thought that the DPT was difficult and complicated. Furthermore, one of these students wished that “we could have had a little more teaching in the

classroom first”. Another student did not see much importance in evaluating the final part in the task and commented “[...] the discussion (evaluating) of the task was least relevant”. Our opinion is that the evaluating at the end of the task is important because it concerns the whole task and fosters critical and reflective thinking. Some of the students show critical thinking concerning the data program by writing about its weaknesses such as: “[...] I learned little about the lack of nutrients in the diet” and “[...] all the foods were not registered in the diet planner calculation programme”. One student’s comment in the questionnaire show a clear negative attitude towards DPT. Because she was previously familiar with the program she did not achieve much new knowledge, nor did she see the pedagogical benefits of the task.

### Teacher educators’ considerations

In addition to the responses from the student questionnaires and interviews, the teacher educator’s notes gave a lot of information and provided a fruitful base for critical reflections of our own professional practice. As a practitioners’ inquiry, this research provides in our opinion valuable contextualized information (Cochran-Smith & Lytle, 2009). Furthermore, this study can also be described as evidence informed practice (Cordingley, 2009) and experience-based learning in TE.

The DPT provides an example of how digital skills can be useful and improve efficiency in teaching/learning the subject. A task using diet registration over such a short term is not representative of the students’ diets. However, it can be an applicable method to raise the students’ awareness of their actual food consumption during a single day, learn more about health-promoting diets based on the official recommendations, and learn how to use this digital tool in teaching. Furthermore, the focus in DPT is on learning pedagogical content knowledge (the teaching method) and the main principles of diet evaluation (disciplinary content knowledge). Students learned from DPT how to evaluate diets in general, and how a student can evaluate her/his own one-day diets in particular. For students, this can be a motivating example of how new contextual knowledge can be constructed.

In many countries, the national learning outcomes are expected to guide teacher educators’ teaching (Walvoord, 2010). The learning outcomes are the statements of what the students should have learned at the end of the FH1 course, and the learning goals describe what the teacher educator expects the students will learn by working with the DPT. What a student should learn to be qualified as a FH teacher in Norway changed in 2006 when the subject Home Economics became Food and health. Globally, the nature of Home Economics as a field of knowledge is multiple and changing (Pendergast, McGregor & Turkki, 2012). For example, the subject has different names and goals, contents and frame factors in different countries. In Norway in the course FH1, one of the main focus in learning outcomes in TE is on the relation between food and health and knowledge in nutrition is important content. DPT was developed for creating a holistic view on nutritional knowledge. Continually asking critical questions about our teaching is important for developing our pedagogical practice.

During the observations the students, the teacher educator raised several questions concerning the learning goals in her notes:

- How did students’ learning goals relate with content and teaching /learning methods in DPT?
- What were the criteria for approving the students’ reports?
- What was the minimum of skills required?
- How does the DPT facilitate new views on learning and teaching as well as on knowledge and professional practice?

The teacher educator observed that the instruction of how the digital diet planning program work could have been better for some students with low digital skills. Our experience is that it is important for the teacher educator to demonstrate thoroughly how the digital diet program works. After completing this study, we reviewed the details in the written sheet about the functions in the digital diet program. It is essential that the teacher educators are available for questions during students’ work, so that they can clarify the task and better support students’ learning. Teachers should ensure that the students have understood what they are expected to learn, and try to communicate the learning goals in such a way that it is clear for students how to work towards achieving them. In our opinion, it is more important to set advanced goals than “do your best” goals because general formulations of learning targets can easily take attention away from achieving the learning outcomes

and competences. Therefore, clear goals for the task is crucial for students' success. According to the teacher educators' notes, most of the students approached learning outcomes satisfactorily. However, this task is not the only context in which the students learn about nutrition. The course literature, other teaching methods and further information sources and tasks are included in the subject curriculum. To be able to solve the DPT, the students have to understand nutrition in some degree and need knowledge about the official diet recommendations, along with possessing some digital skills. The timing of different learning activities is another major factor in teaching success DTP was given early in the semester. Only the energising nutrients were included in the teacher educators' teaching content before the task was finished, and students had to use textbooks to acquire more knowledge, specifically about vitamins and minerals. However, our view is that over time the students might have gradually become capable of discovering how to teach about nutrients, diets and health and official recommendations.

Zafra-Gómez, Román-Martínez & GomezMiranda (2015) observed that students learned more and obtained better results if they conducted research projects as a team and worked together on activities. This raises the question of whether the DPT should be a group task or an individual task. Even if it is an individual task, the students can collaborate when they have recorded and analysed the data. We argue that the DPT can be seen as a student-centered and active learning method because the students decide when, where, how and with whom they want to work with. Thus they were responsible for their own learning activities (Cochran-Smith & Lytle, 2009); (Hattie, 2012). Additionally, DPT involves a shift from teaching basic skills to teach applied skills (Trilling & Fadel, 2009). Active learning, student-centered, learner-centered and project-based learning are concepts used in describing learning in which students play an active role in their own learning, and teachers are activators for learning rather than instructors. According to the constructivist approach to learning, students need innovative learning experiences to integrate new knowledge with existing knowledge, critical thinking and pedagogical reflections (Canepescu, 2009). The learners' active participation in the task is thus seen as a prerequisite for learning. This study indicates that the DPT comprises a high degree of student engagement, which is in line with constructivist learning view.

An interesting question is whether students' learning was successful or not, and why. The students displayed skills such as problem-solving, creativity, critical- and reflective thinking to different degrees when working with the DPT. It is important that the educational use of digital technology support students' learning processes. The digital diet-planning tool used in this study provides several possibilities for using digital technology in FH1. For example, charts can be useful in presentations of numbers since visualising a numerical data is easier to comprehend. Digital technology seems to be used in solving practical problems and involves creativity rather than investigatory activity. Gudmundsdóttir et al. (2014) do not elaborate why future teachers are not prepared to use digital tools in teacher education. Their findings support the mismatch between political expectations for students' learning digital skills and teacher educators' teaching practises when it comes to digital competence. However, most of the students considered "Kostholdsplanleggeren" as a simple digital program that did not affect their digital skills particularly.

All students received written feedback of their task performance concerning its positive aspects, weaknesses, and measures for improvement. Such teacher feedback is most effective when it stimulates students' reflective thinking (Van der Schaaf, Baartman, Prins, Oosterbaan & Schaap, 2013). However, more research is needed about students' varied perceptions and beliefs about feedback, for example how they respond to teachers' comments (Higgins, Hartley & Skelton, 2002) and what the students do with such feedback (Bailey & Garner, 2010). We conducted the study after students had received feedback and revealed response to DPT. Most of our students stated that they were satisfied with the task, which may indicate that they also were satisfied with our feedback. However, the evaluation and follow-up of students' learning are often lacking in teacher educators' teaching (OECD, 2013). Maggs (2012) suggested that a single higher education institution could make considerable improvements to its feedback practices. Feedback can be brief, concise comments and include an overview that highlight both the positive and negative sides of the evaluated work (Ferguson, 2011). The teacher educator found shortcomings in some students' tasks, especially in case of missing calculation of some minerals and vitamins and unsatisfactory evaluating of the diet compared to the official nutrition recommendations. Several students did an inadequate assessment of their diet and thus had inadequate improvements, such as changing one food product for another. Because of these insufficiencies, some students had to deliver two times before the task was approved.

The DPT contributed to the students' development of knowledge, skills and competences and gave also new reflections for teacher educators. The students attained subjects' content- and pedagogical content knowledge, and professional knowledge. The DPT promoted students' progressing towards the learning outcomes for knowledge and skills and general competence in FH1. Furthermore, most of the students began to achieve some expertise about diet planning, applying and using official information and evaluating diets and took ownership of their learning processes throughout this task. Professional knowledge is constructed when students apply several forms of knowledge and transform it into the knowledge they can use later in their teaching in schools (Cochran-Smith & Lytle, 2009). Furthermore, Winch (2014) suggests that expertise demands that an individual is able to find her/his own way how to teach the subject. The DPT can be designed to suit several different target groups so that it can be relevant and interesting in primary and secondary schools in several countries. At primary level, the teacher, for instance, show comparisons of foods from the diet program, such as fat percentage of whole milk, light milk and skim milk. In the secondary school, the pupils can use the digital program on their own with guidance. The DPT has proven to be an appropriate teaching/learning method for the FH1 course in TE. The DPT can be used in several countries to increase and facilitate the understanding of the nutritional content of foods and the recommended intake of different nutrients. We argue that DPT is a learning activity that contributes intentions in the national curriculum for primary- and secondary teacher education.

## Conclusion

Our findings indicate that most students responded positively to the DPT as a student-centered teaching/learning method. The students and teacher educator reported that the DPT provided a good overview of the nutritional- and energy contents of foods, and information about energy consumption, and it enabled an effective diet evaluation based on the official nutrition recommendations. This task also made the students more aware of healthy food choices based on research- and experience based knowledge. The students regarded the learning experience as relevant for their future teaching career at schools. The results indicate that several students had propositional content knowledge, teachers' knowledge and professional knowledge.

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## What is the educational content of food and health?

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### Abstract

**Objective:** *The aim is to analyze and discuss Home Economics teachers' educational choices regarding the educational content food and health.*

**Method:** *A discourse analytic approach combined with a didactic perspective is used in the study. Data was collected from focus group discussions with Home Economics teachers.*

**Results:** *Four discourses were identified, representing different ways of constructing food and health. The various discourses point to different educational configurations.*

**Conclusion:** *We have shown different discourses and educational configurations concerning food and health. Each discourse is a constructed view of how to develop students' awareness of the relationship between food and health. Further, we discuss that teacher's actions, through their different choices, of a certain particular educational content instead of other alternatives can have consequences for students' potential learning outcome in terms of meaning making.*

**KEYWORDS:** FOOD, HEALTH, DISCOURSE, HOME ECONOMICS, EDUCATIONAL CONTENT

### Introduction

Food has become the object of intensified pedagogical activity across a range of domains (Flowers & Swan, 2015). For example, numerous studies have focused on the relationships between nutrition policy in school and childhood obesity. Overweight and obesity are significant problems and of serious health concern globally, and schools are identified as an important venue for intervention regarding these issues (Laitsch, 2009). The classroom may be an ideal environment for education aimed at increasing knowledge, developing skills, and forming attitudes to encourage children to make healthy lifestyle choices. No other institution has as much constant contact with children during the first decades of life, or access to youth of such diverse socioeconomic groups (Story et al., 2006). Teachers play a key role in the development, implementation, and evaluation of school-based initiatives (Mukoma & Flisher, 2004).

While the obesity reports have brought this issue to international prominence, it is important to examine these nutritional policy discussions in the broader school health context. This makes food and health a current educational issue, and puts what children learn at school in focus. Within the Swedish compulsory school system, subjects such as Physical Education, Biology and Home Economics (HE)<sup>1</sup> all address food and health in different ways. However, only one of them, HE, has food and health at its core. These topics are addressed together when HE students are expected to learn how to prepare healthy food.

HE is a complex, multidisciplinary subject, taught for a total of 118 hours in compulsory school. According to the Swedish national syllabus, the overall aim of HE is to help students gain the ability to make informed choices from an environmental, economic and health perspective. Students are also expected to develop practical knowledge of food, nutrition and cooking in relation to health

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<sup>1</sup> We use the international term Home Economics, though the name of the school subject in Sweden is Home and Consumer Studies.

(National Agency for Education, 2011). The subject is mainly taught in grades 5, 8 and 9, at the ages of 11, 14 and 15 years (Lindblom et al., 2013). Food and health have long held a dominant position within the subject of HE in Sweden.

However, what constitutes a healthy diet and how it is associated with a healthy lifestyle has had different meanings over time. Oljans et al., (2017) analyzed six HE syllabi from 1962 to 2011. Three different discourses, specific ways of constructing food in relation to health, were identified and named according to the main focus: i) the medical discourse, ii) the consumer discourse and iii) the human ecological discourse. Different discourses have dominated over time, and the construction of food in relation to health can be seen in its historical and cultural context according to what this knowledge content includes or excludes (Oljans et al., 2017, Höijer, 2014, Gisslevik et al., 2016, Eriksson et al., 2016). But what is stated in the syllabus may or may not be the content taught. Teachers have to interpret the syllabus and decide what to focus on in their teaching. This will be addressed in the present study.

## Aim

The aim of this study is to analyze and discuss HE teachers' educational choices regarding the knowledge content food and health.

## Teachers' choice of content

To study what knowledge content includes means dealing with questions about education and teaching from a didactic perspective. This involves focusing on how, what and why different values, knowledge and skills are included, maintained or changed. Our study that analyzes and discusses teachers' choices of content is in line with research done in recent years (see, for example, Quennerstedt, 2006, Almqvist, 2005, Hjalmskog, 2000, Englund, 1992). Englund (1992) raises the question of teachers' didactic competence, when focusing on the importance for teachers to be aware of their own selection regarding educational content. The insight of Englund's argument is important: a teacher makes choices, and choices are to be seen in relation to alternative choices the teacher could have made. This insight could increase the support for teachers when arguing for their selection of content. This is important because teachers' choices of content and educational methods may influence students' learning.

The content and purposes of the school subject Home Economics vary from country to country. A study on Home economics teachers' views on food skills showed that the respondents rated the practical "hands-on" skills required to prepare a healthy meal as most important in HE (Fordyce-Voorham, 2016). Höijer et al. (2013) showed that Home Economics teachers' choices were framed by educational visions and cultural values. Other studies highlighting the teachers' perspective are Deagon and Pendergast (2019) who show how Home economists identified aspects of spiritual health and wellbeing. Taste as an aspect in food education is studied and discussed by (Christensen, 2019). He shows that taste can be viewed as a constitutive element of meaning in students' learning processes. Gelinder et al. (2020) show the importance of taste in relation to issues about education for sustainable food consumption (cf. Gisslevik et al., 2017).

Furthermore, there is also an established discussion on food and health in HE in terms of food literacy research. The concept "food literacy" is used to highlight the important role food and eating play in our lives (Vidgen, 2016). Food literacy is a multifaceted concept and can be studied from different perspectives as for example to describe the knowledge and skills acquired in food education programs (Fordyce-Voorham, 2018), the role of hands-on cooking skills (ibid) and how cooking skills are measured and improved (Markow et al., 2012). Ronto et al. (2016) show that food literacy education may help students to establish healthier eating patterns.

Food literacy is also discussed through terms of ecology, connecting individual cooking and gardening skills to collective action in the community, in order to highlight the important of working for a more sustainable food system around the world (Powell & Renwick, 2019).

According to Benn (2014) food literacy studies are ranging from a narrow understanding of food literacy as the ability to read and understand messages regarding food to broader interpretations aiming at empowerment and self-efficacy concerning food and nutrition and from elementary cooking

skills to complex life skills and education towards understanding (Benn, 2014)<sup>2</sup>. Hence, education regarding food and health can include a range of different aspects.

Still, there is a need to further examine what teaching about food and health includes. What do teachers perceive as important knowledge when it comes to food and health? What are the teachers' educational configurations of the chosen content?

## The theory of educational configurations

The complexity of teaching practices, including teachers' selections of content, is discussed by Simonneaux and Simonneaux (2012). They introduce the concept *educational configurations* to characterize the approaches, practices and methods chosen by the teachers, in this study the approaches, practices and methods the teachers choose when teaching about food and health in HE. We argue that these choices can be both conscious and unconscious. Simonneaux and Simonneaux (2012) identify different educational configurations by integrating what they call *attributes of knowledge*, *teachers' epistemological postures* and *didactic strategies*. Educational configurations have been developed in the context of education for sustainable development, we find it fruitful to use in other contexts, such as HE, as it is teaching not the subject itself that is focused.

The concept *attributes of knowledge* concern teachers' perceptions of knowledge and of truth. Different attributes of knowledge depend on how the knowledge has been developed, and can be categorized as follows: *Universal*, *plural*, *engaged* or *contextualized*. *Universal* knowledge is when the teacher chooses to highlight that there is a universal truth. In this perspective the teacher argues that science provides a model of how the world really works. *Plural* knowledge is when several paradigms can exist simultaneously within a scientific field; new theories do not automatically negate prior theories. In this perspective science is understood to produce models that attempt to explain what is real without merging with them. Simonneaux and Simonneaux (2012) argue that the economic sciences are an example of this category of knowledge, as they include co-existing paradigms, such as theories about the market and the rationality of the actor. *Engaged* knowledge is about integrating controversies and different actors participating in the scientific debate. It includes uncertainties and possible risks and changes in the world, for example issues regarding climate change. Knowledge is not questioned only in terms of its validity but also in terms of the consequences, what it affects or could affect. Finally, *contextualized* knowledge focus on the contexts in which scientific knowledge is produced, where different values are contextualized in specific situations. This means integrating local knowledge and interdisciplinary practices. It can be referred to as "field science" and is not concerned with proof in a specific quantified manner since the truth in this perspective depends on the context (Simonneaux & Simonneaux, 2012, p. 79).

*Epistemological postures* are the different functions teachers assign to science. These depend on the aims teachers attribute to science, and can be categorized as *scientist*, *utilitarianism*, *scepticism* or *relativism* postures. In the *scientist* posture science is considered important to progress, and the teacher has confidence in science delivered by an authority. In school the teacher is an authority teaching students in the disciplinary content. In the *utilitarianism* posture, knowledge gets its meaning through the real-life actions it helps to produce, and the value lies in the power to act like an expert who makes correct and rational decisions. In school, where this knowledge is communicated, students should be given advice and help with decision-making. The *scepticism* posture refers to uncertainty and scepticism about contradictory research results. The scientific questions are not just a matter of research; they are concerns that are taken up in a variety of arenas, such as in public debate. Educational aims within this perspective include the intention to promote responsibility by developing students' critical thinking skills. In the *relativism* posture science is not presented as a superior form of knowledge, as no single scientific method can be totally distinguished from beliefs or myths. From this, it follows that no knowledge is absolute or timeless. Thus, we can never have total knowledge.

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<sup>2</sup> The references regarding HE is based on a literature search with the intention to find relevant literature regarding education of food and health in HE. A digital search was conducted in two selected journals, International Journal of Consumer Studies and International Journal of Home Economics in the past five years. The journals were chosen on the basis that they are well regarded and prominent in their field. We are aware that there are several other journals that may be of interest and therefore a search on the Web of Science and ERIC databases were made. The search words used in the databases were: "food AND health AND ("home economics "OR" home and consumer studies. All titles and abstracts were read through the articles that appeared in the search, to distinguish those who dealt with food and health education in HE.

Finally, *didactic strategies* reflect the educational purposes chosen by the teacher, as well as various educational scenarios and the importance teachers give to the value. The strategy is characterized by a goal and the way to accomplish it. The strategies may be *doctrinal*, *problematizing*, *critical* and *pragmatic*. A *doctrinal* strategy means that the teacher see her/him-self as a “master” delivering the truth, for example, about what to eat or not to eat, and thus leaving almost no opportunity for discussion. Using a *problematizing* strategy means that the teacher focuses on students’ cognitive activity. The teacher arranges situations in a way so that the student can take an active part in reasoning and comparing different alternatives to, for example, issues on what food items to choose, and thus developing a line of rational thinking rather than find the “right” solution. A *critical* strategy means that the focus is on developing a critical stance. The students are taught the ability to argue and reflect on complex issues such as food production and consumption from different perspectives. Finally, a *pragmatic* strategy focuses on practical learning, such as involving students in for example, project-based learning on healthy food. Students explore the topic beyond specific theoretical frameworks and theories; practice, reflection and action are connected so that knowledge is developed in a context (Simonneaux & Simonneaux, 2012).

The theory of educational configurations (Simonneaux & Simonneaux, 2012) is helpful to analyze and discuss HE teachers’ educational choices regarding the knowledge content of food and health. Furthermore, it helps to highlight the view of what is considered the truth, what is considered to be the role of science, and what different educational strategies are considered to be appropriate when teaching about food and health. These perspectives increase our understanding of teachers’ different choices regarding their teaching. Our approach of using a didactic perspective applying the didactical questions how, what and why in combination with the epistemological and didactical aspects within the concept of educational configurations makes it possible to discuss the different constructions of the educational configurations linked to food and health.

## Methodology

Focus group interview was chosen as a method of data collection. One of many benefits of focus groups is that in the discussions participants’ past experiences, attitudes and views enrich the quality of data. Furthermore, this method is suitable for collecting data from several participants at the same time (Patton, 2002).

The focus group interviews were conducted with groups of participants who all teach HE. The participants were recruited through email, and addresses were collected from different HE networks. A total of 203 emails were sent out. 18 emails came back with error messages. Of the remaining 185 emails successfully sent, 49 responded.

The participants were selected based on their geographical closeness because of the practical aspects of organizing focus groups, but they worked in a variety of schools in a range of socio-economic areas. In the end, 27 teachers participated in the study. 26 out of 27 teachers had a formal teacher’s degree in home economics and all of them taught HE in upper secondary school. All participants were women between the ages of 30-64.

The focus group interviews were held at different schools after school hours, except for one interview that was held at a university department. This was done because the place was the most suitable geographical location for the participants. Each focus group lasted 60-80 minutes. The interviews were moderated, audio-recorded and transcribed by the first author. Also present at all of the focus group interviews was an assistant, who observed and took notes to enhance the transcription processes. The focus group interviews were based on a interview guide consisting of three themes: what how and why teaching about food and health, views on the curriculum conditions and prerequisites for teaching. After the focus group sessions the participants filled out a short questionnaire with background information regarding their working conditions, such as how many lessons they teach per week, how many classes they teach, when they got their teacher’s degree etcetera (c.f. Wibeck, 2000).

The small sample can be seen as a limitation, but the analysis in the present study is based on the body of statements, we look for variation within the statements, thus the number of participants is of less importance (Wibeck, 2000).

## Ethical considerations

During the whole research process the ethical rules of the Swedish Research Council (2002) were used. The participants were informed orally and in writing about the project. All of the teachers participated voluntarily. The recorded material is stored on a USB memory stick, kept in a safe place. The transcript and result are anonymous and coded. The focus group participants were not awarded anything for their partaking in the study, because a payment can influence the reliability of the contributors taking part in the study (Patton, 2002).

## Data analysis

Since the aim of the study was to explore teacher's educational choices, in other words their construction of what education about food and health is, we framed the study from a discourse theoretical perspective. Thus, discourses are seen as processes where meaning is created in language. Discourses can be identified in processes where meaning is created, focus group interviews are used as a situation where meaning is constructed and, thus, an interaction where discourses can be identified. Discourse is seen as a fixation of social meaning within a specific domain (Winther-Jørgensen & Phillips, 2002). Discourses are analytical constructs that can be differentiated through an analysis of alternative ways of giving meaning inside a specific domain. This makes visible what is included and what is excluded in the specific topic of interest.

Based on previous work in didactics (Quennerstedt, 2008) we analysed the content using the didactic questions. Three didactic questions are asked to the material, *What, How and Why*: i) *What* are the participants' perceptions of knowledge regarding food and health? ii) *How* do the participants describe their perceptions of appropriate methods when teaching food and health? And, iii) *Why*, refers to, participants' perceptions of the role and importance of the knowledge content and teaching methods: *Why* is this important? *Why* is this a useful way of teaching this content? Through these questions, patterns are identified in order to clarify similarities and differences. From these patterns, we can form four different categories i.e.. discourses. In this perspective a discourse is seen as a construction where priorities and directions for the teaching activity are formulated (Quennerstedt, 2008). In this study priorities and directions for teaching the content concerning food and health. The questions *What? How? And Why?* helps us to see the variations within the total body of statements, thus the discourses are not related to individual teachers. To further analyze the discourses we use the theory of educational configurations, an analysis inspired by Simonneaux and Simonneaux (2012). In doing this we clarify what stance the teacher would make, conscious or unconscious, concerning the attributes of knowledge, epistemological posture, and didactic strategies, if representing one single discourse.

To describe the procedure in more detail, in the first step, the recorded material was played several times, and the focus group interviews were transcribed. In the second step of the analysis the first author of this article read the full set of transcript material twice to become familiar with the data. In the third step the first author coded interesting features of the data, particularly persistent patterns of conversation in relation to the didactic questions *what, how and why*. Then the codes were sorted into categories as potential themes, sorting the themes of food and health-related content. The perceptions and strategies were identified on the basis of how informants described their views of food and health in their daily work (Patton, 2002). In a fourth step, four different categories were created and viewed as different discourses. Each discourse represents different constructions of what is included and viewed as important when teaching food and health.

## Results

The results of the study show that teachers have different views on *what* knowledge of food in relation to health should be included in the content as well as, *why* and *how* this knowledge content should be taught. These diverse constructions can be categorized into four different discourses, each representing different views of what food and health should include. The four different discourses are identified as follows: a) *the medical discourse*, b) *the consumer discourse*, c) *the environment discourse* and d) *the social relations discourse*.

### The medical discourse

The privileged focus in this discourse is to teach the student a bio-medical perspective on health, particularly how they should stay healthy through learning facts about nutrition. In this discourse education about food and health concerns individual needs for energy and nutrition. The body's physical dimensions and specific health effects through nutrition are seen as linked. The concept of food is described in dichotomies of right and wrong, where a certain diet is presented as an efficient way to strengthen the body's performance, and the wrong food is associated with negative consequences. This kind of knowledge, it is argued, can help students become healthy citizens in the future. If they learn the right nutrients in order to eating healthy food and thereby avoiding illness, they will develop healthy lifestyles as adults. The importance of knowledge in nutrition is emphasized by Teacher 25:

I think nutrition is important. Knowing what fat does for the body and what proteins and carbohydrates do for the body. And knowing that you have to have all (the nutrients) in order to feel good. To take away this knowledge, so (students) have it when they are younger and later when they get older (Teacher 25).

Knowledge about nutrition is taught by letting the student follow a recipe of a healthy meal, (selected by the teacher) and by using the appropriate basic methods in cooking. The students are supposed to learn facts, for example, from nutritional guidelines, and their knowledge is tested in written exams.

Health in Grade 8 and for the last few years I went in and took out the food agency's dietary advice for children and made a booklet. We went through this booklet and then we tried it (Teacher 10).

In this discourse, the teacher has an important role in planning, preparing and presenting instructions for the students to follow. The teacher is regarded as the expert, but sometimes also other experts are invited:

We usually invite a dentist and a dental hygienist (to the class) [...] She always comes and meets us during Grade 8 and then we usually watch a movie about smoking and we talk about teeth and physical health. Then we focus on sugar a lot, and then we usually compare what it's like to be smoker and what it's like to be addicted to sugar (Teacher 14).

Avoiding risky foods, such as food high in sugar is, according to this discourse, constituted as a strategy for maintaining health. Furthermore, the teacher shows students examples of how not to live their lives and tells them how they should live and act instead. To invite a dentist seen as authority, can strengthen the connection to science.

Table 1: The medical discourse

Didactical question	Didactical answer
Why?	Become able to eat right and avoid unhealthy foods
What?	Nutrition
How?	Experts convey knowledge as facts

The educational configuration that characterizes the medical discourse includes *universal knowledge* since the teaching takes presents a medical model of food as a universal truth (see Simonneaux & Simonneaux, 2012).

The discourse also includes a view of science as essential to progress, in line with the *scientist posture*. In order to learn about food and health, the student has to learn and memorize important facts about nutrients and its physiological functions.

The educational strategies in this discourse have similarities to the *doctrinal strategy* where the teacher or other experts deliver the truth and where learning scientific facts about nutrition is the way to learn about healthy food and, thus, the way to live a healthy life in the future. This strategy leaves very limited opportunities for discussion about different feasible choices in lifestyle. It opens for an intra-disciplinary discussion in relation to the medical disciplines.

### The consumer discourse

As in the medical discourse, the focus of this discourse is teaching the students how the individual has a responsibility to make reflective health choices. However, the consumer discourse also focuses on planning and purchasing as well as cooking a nutritious meal from healthy ingredients. The students should be able to select, handle and prepare healthy foods, which includes reading tables of contents, comparing products, comparing diverse recipes and weighing different consumption options.

It's important that they know what the nutrients are so they can also interpret the nutritional content of foods so they can read what is actually in there (Teacher 10).

The teacher creates situations where students seek information and reflect on choices in everyday situations involving food, then make the "right" choices during the process from grocery store to table. The teachers demonstrate various techniques and cooking methods for preparing a healthy meal in a correct way.

Desirable actions and habits that the student should learn are increased responsibility in action and the development of individual patterns of rational and calculated behaviors in order to develop critical thinking that influences individual decisions regarding healthy food.

This is knowledge for the students' future in order to help them become independent and healthy consumers who can take care of themselves. For example, Teacher 13 stresses the importance of basic cooking skills and cooking from scratch:

That you prepare a meal from scratch. You know how to do it and don't need to buy half-prepared products. And that you've understood in the back of your head that you...Yes, a little of the basics. What's good for me to put on my plate? Being able to make food and knowing that it's good. Good that I've chosen these particular things (Teacher 13).

Purchased meals and pre-processed foods are described as unhealthy, and students' knowledge of how to make their own food will prevent students from purchasing pre-processed food in the future. The individual has a responsibility to structure his or her intake based on active choices from an array of possibilities offered by the market. Avoiding premade food is considered to be a relevant act. Health is constructed as something the individual has to control, maintain and improve. The discourse is about teaching skills students can use to become a conscious and healthy consumer in the future.

Teacher 1 describes how she sets up an imaginary food store for the students to actively practice conscious choices based on comparisons between groceries:

That you want to give them tools to make good choices for meals and that they do it, hands-on, then they learn the best. The time that the students like best in Home Economics are "Basic Ingredient Investigations". We set up a mini grocery store. Students can plan meals based on the plate model and make them (Teacher 1).

Furthermore, the students are expected to pick out ingredients and make nutritious meals based on a choice from an array of possibilities offered by the market using *Tallriksmodellen*, which is a meal guide marketed by Livsmedelsverket [The National Food Agency], designed to show consumers how to build a nutritious meal on a plate.

The desirable behavioral pattern is described in terms of how the student expects to know and pick the right food items based on nutritional components as well as making the right health-related choices. For example, here Teacher 3 describes an educational situation where the students say they cannot find any vegetables:

And then their whole cart is full of carrots and cabbage and beets and parsnips. What they're often looking for is iceberg lettuce. So you often have to repeat. What does iceberg lettuce have in it, and what do carrots have in them and so on. So that's where they get their knowledge about health, and they're given the opportunity to repeat this and think a bit about which vegetables to choose. This is what we have to choose from now. So what do you choose?(Teacher 3)

Food items are seen as goods that should be examined, compared, and prepared in a correct manner. Preferred food items are the ones that contain the most nutrients. It is not enough to choose any vegetable; the choice should be reflected on and weighed in relation to alternative choices of



nutritional content. For example, lettuce contains a high proportion of water and do not contain as high proportion of nutrients in comparison to cabbage and beetroot.

Table 2: The consumer discourse

Didactical question	Didactical answer
Why?	Become able to make reflective choices when planning and making a meal.
What?	A comparative approach read tables of contents, select and prepare healthy food.
How?	Students investigate, compare, choose and prepare food products

The educational configuration that characterizes the consumer discourse is grounded on *plural* knowledge (see Simonneaux & Simonneaux, 2012). It is not enough to learn nutritional facts from different sources; the student should develop the skills to make reflective choices as well. In this discourse, there is still a correct way to assess foods, and you have to make the “right choice” when evaluating alternative choices. For example, lettuce can be a good choice but not in relation to beetroot, which contains more nutrients.

The *utilitarianism* posture, where knowledge gets its meaning through real-world actions, which helps to produce the truth, can be found in the consumer discourse. The value of knowledge is in the power to act like an expert who has the responsibility to make the correct and rational decisions as potential consumers.

The consumer discourse also includes a *problematizing* strategy, since the teacher emphasizes cognitive activity and arranges situations so the students can take an active part in the activity. This is done by letting students develop lines of reasoning and comparing products as an active part in making choices. In doing this the students have to deal with multiple sources of information presented by, for example, the grocery store, food companies or organizations.

### The environment discourse

The focus of the environmental discourse is teaching the ability to analyze and discuss what it means to eat sustainably. One of the teachers emphasized that education about food and health is about “Sustainability” (Teacher 2). Food and health education is about teaching the importance of sustainable development, how sustainable food consumption is linked to our health, and how it affects our own and others’ lives as well as the natural environment.

Education about food and health is, in this discourse, about developing the ability to make decisions motivated from an environmental perspective. The student should be able to choose and prepare sustainable meals as a part of a sustainable lifestyles. The student should integrate the environmental perspective by including issues of food production and transportation and how these affect the environment and health in a complex way.

This kind of knowledge is for benefits in both the present and the future and includes not only local but also the global context. Thus, the student learns how to associate food with sustainable development. The teacher creates tasks based on situations or cases with open-ended questions, and the students are expected to work collaboratively when arguing, analyzing, reflecting and providing developed and well-reasoned arguments about the work process and the result of their task.

Teacher 11 discusses the difficulties of choosing fish: they are nutritious but difficult to choose from a sustainability perspective. Her discussion is connected to Eco labeling (Sweden’s environmental symbol), content of pollution and toxins, and environmental pesticides.

It’s just these “simple” things like when we cook fish. What is the environmental aspect of fish? It’s complicated! Do we have eco-labeled salmon from Norway? Then it’s also freshly caught wild fish. But then it’s sent to China for cleaning! But how do we weigh this [choice]? (Teacher 11).

To learn about food and health is to include reflections about the impact of food choices on the entire food chain and its consequences on the global health. In this discourse, there is no simple right answer to the question if fish is good for your health.

We emphasize projects around eating smart, and then they prepare a smart meal that they're supposed to prepare. Then they're supposed to report why they did what they did and when they explain their thoughts, they can think through their thought process carefully. Their thoughts from a health perspective and then it's not just that this is healthy because it's good for the environment or that it's good for the season or that it was locally produced, what are the consequences for society, for Sweden and for the world (Teacher 20).

The teacher works with open-ended questions to challenge students to probe deeper into possible openings. Elaborating on their work process and how environmentally friendly their choices have been are ways to make further connections to explore other possibilities.

Table 3: The environment discourse

Didactical question	Didactical answer
Why?	Become able to see food and health in the context of sustainable development.
What?	Choices and actions in relation to handling, preparing and motivating sustainable healthy meals.
How?	Use of open-ended questions for students to argue, analyze, reflect and provide developed and well-reasoned arguments.

The educational configuration that characterizes the environment discourse is similar to *engaged* knowledge (see Simonneaux & Simonneaux, 2012) since the students have to handle dilemmas and take different perspectives in consideration when making a food choice. When the students are choosing a product, the whole chain, from production to transport to storage to leftovers, are taken into consideration. This includes uncertainties and possible risks for changes in the environment. It also includes the *utilitarianism* posture where knowledge gets its meaning through real-world action. The reality is that food production and consumption affects the environment, and students should have the power to act. The students learn that they can have an impact on our environment through developing knowledge about sustainability and increasing their skills buying and preparing food with as little negative impact as possible.

The environment discourse also includes a *scepticism* posture, since it refers students to uncertainty, skepticism and contradictory research results. Educational intentions are, from this perspective, to promote responsibility by developing critical thinking in relation to potential environmental risks of food consumption.

Furthermore, this discourse includes the *critical* strategy; it focuses on the development of a critical sense and on increasing students' abilities to argue and reflect on complex issues from various views.

### The social relations discourse

The focus in this discourse is teaching the sociocultural dimensions of food and health as well as how to make students aware of the complex interplay of social and cultural aspects. Students gain knowledge for the present and the future. Here, the social dimension of wellbeing is connected to health, and meals are emphasized as occasions where food and social relations can be used to create and improve good health and healthy relationships.

Different examples are highlighted, such as social gatherings at the set table, table manners, social interaction, the importance of togetherness and relaxation. To eat alone is considered undesirable. When talking about food and health, it is the social aspect of the meal that gives food significant value in this discourse. The teacher interacts and demonstrates inspiring napkin folding and offers to turn off the light and light candles. The teacher is also part of the group, interacting and attempting to inspire the students to create a healthy classroom environment. The students are expected to interact and participate to create a positive atmosphere that will add to not only their own wellbeing but also the wellbeing of others. The psychological and social values are prominent, and, thus, the habits, norms and values are expressed and conveyed in relation to food and meals as an expression of culture and social belonging.

Social interrelations are seen as important. Teacher 21 expresses that social processes can include both symbolic social value and time for a calm and mindful atmosphere:

I spend a lot of time on the social environment, that you eat together. That you gain health and feel good in a meal situation. Just that you get peace and quiet and sit down and take your time (Teacher 21).

The individual is placed in a wider social context, as explained by Teacher 23:

[...] that you understand that it's still in a context with food, meals and health and that the individual meals are not as important in themselves, but there is a broader context and the food is part of it (Teacher 23).

Furthermore, to share a meal in a suitable atmosphere is connected to a healthy lifestyle.

Sitting around a table. You have your meal, you eat it, and you talk with your friends. It creates a comfortable atmosphere. There are some things that you may not say because you might hurt someone and yes. How do you interact with each other. There is so much more around the meal than just what is healthy. And even more than just the environment (Teacher 15).

Food is also associated with cultural backgrounds and moral values such as respect as well as love for one's neighbor. Food is connected with sharing everyday life. A shared meal is a social event where thoughts, experiences, and emotions are integrated. Sharing a meal should include friendly conversations and communications important for creating wellbeing.

I want to emphasize the togetherness, that you sit down together and that it's a pleasant time when you eat and it's not just the matter of being full. Because then you could just stand and eat out of the pot. And there are many people who think you can do that, but I want to see another, yes, dimension, I'd say (Teacher 20).

Teacher 20 emphasizes that when eating a meal, you are supposed to sit down at the same table with family, relatives, or friends. Good manners are related to the rules of sharing, offering food to others and behaving in the sociocultural context of eating patterns as social phenomena. A meal is connected to moral virtues, such as generosity, discipline, and respect, as Teacher 7 describes this rhetorical question to a student:

When you shovel in all your food instead of inviting your friend over, how does it affect how you feel inside? It's about that a lot, and maybe not so much about food. It's more around the food and the meal (Teacher 7).

Table 4: The social relations discourse

Didactical question	Didactical answer
Why?	To learn that meals are significant for health and wellbeing
What?	Creation and engagement in meaningful meal situations for social wellbeing
How?	Social gatherings at the table, eat together and create a healthy atmosphere.

The educational configuration that characterizes the social relational discourse is similar to *contextualised* knowledge (see Simonneaux & Simonneaux, 2012). The context is a shared meal, where different social and cultural values and aspects of eating are contextualized in specific situations. This is done by integrating local knowledge that influences the culture in the meal situation. Good manners are related to rules of behavior in the sociocultural context of eating patterns as social phenomena. Eating is a social practice that integrates social relations and cultural eating patterns. For example, a person is supposed to sit down at the same table with family, relatives, or friends when eating.

Furthermore it includes the *relativism* posture since the context is seen as the material and cultural constructions of social phenomena. In this discourse, science is not regarded as a superior form of knowledge. All knowledge and values are bound to a certain perspective, a certain context. Different cultures have different views of how to share a meal, and the social and cultural perspectives stress affiliation and shared belonging. A shared meal provides an expression of group affiliation but also habits and symbolic values within the specific cultural context of a set table.

Finally, this discourse includes a *pragmatic* strategy, where theories, practice, reflection and action are connected in practice to make students aware of the complex interplay of social and cultural aspects of food and health.

## Discussion

Teaching food and health in HE is a complex task. Gisslevik's et al. (2016) study shows that Sweden's current HE syllabus is characterized by a broad perspective on food. The content regarding knowledge of food-related issues in HE has gradually expanded over time to involve a more complex content

(Gisslevik, 2018). According to Benn (2014), food education should include a wide range of food perspectives, not just nutrition in order to take account of the relationship between human beings, food scrapes and everyday life (Benn, 2014). Furthermore, research conducted by Höijer et al (2013), showed that Home Economics teachers' choices were framed by educational visions and cultural values. This insight raises questions regarding teachers' educational choices concerning educational content of food and health.

The present study provides insights into HE teachers' constructions and choices regarding the multidisciplinary content of teaching food and health. Our approach of studying the knowledge content by using the didactic questions in combination with analyzing the epistemological and pedagogical aspects of teaching helped us to see the different constructions of the educational configurations linked to food and health. We identify four discourses: i) the medical discourse, ii) the consumer discourse, iii) the environment discourse and iv) the social relations discourse.

A similar result were found in previous research by Oljans et al. (2017), showing three discourses of food and health within the syllabus of HE over time i) the medical discourse, ii) the consumer discourse and iii) the human ecological discourse (Oljans et al. 2017). However in this present study we can see four discourses instead of three, meaning that the human ecological discourse is split in to two different discourses when teachers talk about their teaching, the environmental discourse and the social dimension discourse. Consequently, an interesting result is that we can empirically see aspects of all of the three discourses from the syllabi, but one discourse stands out, and that is the human-ecological discourse. The human ecological discourse highlights the complexities of food in relation to health and how food affects individuals and various groups in diverse contexts, ranging from the perspective of the environment to the social dimensions of a meal. When the teacher talks about teaching food and health, it is clearly divided into two different discourses, where the environmental aspects differs from the social aspects of health such as wellbeing, that are clearly prominent with in the social dimension discourse. This further indicate that teachers value a social aspect of health more than what have been stated in the syllabuses over time.

However, the four discourses in this present study should not be seen as representing one teacher for one discourse. There are teachers who express a more dominant description within a certain discourse, but there are also descriptions in which more than one discourse is included in a particular teaching situation. Teachers' choices of certain content and certain educational methods create the prerequisite for students' learning in terms of meaning-making. The different discourses focus on different skills. The students should, depending on the discourse, know either fact about nutrition, practical hands on skills, be able to reflect and make motivated choices in relation to the environment and sustainability, or have knowledge of the social dimensions of the food, which includes social and cultural aspects of the meal.

The findings presented in this article show that the teaching content of food and health can potentially lead to different meaning making for students. This is because the teaching content is not obvious, once and for all, as different teachers interpret what the content should include differently. The concept of educational configurations (Simonneaux & Simonneaux, 2012) as an approach used in this article provides insight in the complexities of teaching food and health. We analyzed the complexity of teaching practices of food and health and different views on truth, the role of science and teaching methods. For example the concept *attributes of knowledge* concern teachers' perceptions of knowledge and of truth. In the medical discourse learning facts about nutrients is seen as the right way to keep the body healthy (c.f. Lupton, 1997). This medical healthism involves a specific way of considering the role of food as a health problem that involves an exclusively biomedical perspective on diet and health. Social and cultural issues that affect human health are not included, and the responsibility is placed on the individual (Lupton, 1997, Crawford, 1980). This perspective of health education is criticized when education through the process of open discussions about health issues, including its social and political dimensions are advocated (see Simonovska, 2008, 2013, Torres, 2017).

Within the consumer discourse the nutrition focus is present, but the focus has shifted to the individuals' responsibilities to put their knowledge of nutrition into action and behave like a healthy citizen when shopping, storing and preparing healthy foods. This legitimates the individual's responsibility of maintaining the medical dimension of staying healthy by making healthy and reflective consumer choices. The concept of *epistemological postures* is the different functions teachers assign to science and we can see that nutrition is important. However in the consumer

discourse the student does not just need to know facts about nutrition. The student also needs to make use of these facts in real life and make active choices.

Within the environment discourse the individual's responsibility goes beyond a person's own body. Healthy food is not put in relation to the biomedical perspective of the individual but in relation to others' situations as well. The perspective of what health and healthy food is has shifted to an ecological perspective, but the individual's responsibility of making healthy food choices and living a healthy lifestyle is still present. From this perspective, actions are not only seen as affecting a person's own health but also the health of other living beings and the local and global environment.

For example we can see that *the didactic strategy* in this this discourse reflect the educational purposes chosen by the teacher. The strategy is characterized by the goal to accomplish sustainability regarding food consumption by the use of open-ended questions for students to argue, analyze, reflect and provide developed and well-reasoned arguments. This is done in order to develop students' abilities to handle dilemmas and take different perspectives in consideration when making a food choice.

The *didactic strategy* in the social relational discourse reflects the educational purposes chosen by the teacher regarding the meal as a social and cultural event. The strategy is characterized by the goal to accomplish social gatherings at the table, eat together and create a healthy atmosphere. Theories, practice, reflection and action are connected in practice to make students aware of the complex interplay of social and cultural aspects of food and health. In the social relations discourse meals should be eaten in the context of social interactions. The focus of healthy food is on the complexities of how food affects individuals and various groups in diverse contexts. Food is a tool that improves social relations, which will lead to good health for an individual as well as others in the food situation. In this discourse food strengthens social networks, and time spent socializing benefits wellbeing and improves health.

According to the results different discourses accommodate different views on the students' roll as an active learner (consumer-, environment, social relations discourse) or more passive learner (medical discourse). The teacher role differs as well: In the medical discourse, the teacher is viewed as an expert, and in the consumer and environment discourse as a supervisor. In the social relational discourse the teacher roll is more described as creating social learning situations.

## Conclusion

The aim of this study was to analyze and discuss HE teachers' educational choices regarding the knowledge content food and health. We identified four discourses with different educational configurations. In short, teachers interpret content differently. We emphasize the importance of continuing to theorize about teachers' views of educational content. Teaching HE is expected to develop students' knowledge of food, nutrition and cooking in relation to health and develop students' abilities to make informed choices from an environmental, economic and health perspective (National Agency for Education, 2011). This means handling a multi-dimensional area that goes beyond a bio-medical approach. One challenge in this context is that teachers' preferences of educational configuration affect how they choose to plan and moderate the teaching. We can conclude that a teacher makes choices, and choices are to be seen in relation to alternative choices the teacher could have made. This article does not aim to study if and why teachers do as they do; instead, we show that teachers make different choices regarding educational content and that may have consequences for students' potential learning outcomes in terms of meaning-making. This raises the question of the implications of these findings for teachers and their teaching practices. It is essential for teachers to reflect didactically on how the teaching content of food and health can be constructed in different ways when teaching. Additionally, we stress the importance of discussing teachers' awareness of their own epistemic perspectives when teaching, making their standpoints in their teaching strategies conscious.

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## Relationship between Materialism, Life Values, and Happiness in a U.S. College Sample

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### Abstract

*There is limited research on the inter-relationship of materialism, life values, and happiness. This study examined a US sample of undergraduate students (N = 200; 132 women, 68 men) and how their materialistic values related to important life values and overall happiness. We used standardized measures of materialism and happiness, as well as open-ended questions about what participants valued most in life and what really mattered in their current and future life situation. Results indicated deriving happiness from materialistic values was negatively associated with happiness. Participants who mentioned God/religion as a life value reported lower levels of materialistic happiness compared to those who did not mention this category. Finally, those who mentioned family as a life value reported higher levels of happiness than those who did not. We also found interesting gender and age differences. Implications for future research include a call for cross-cultural study of these questions.*

**KEYWORDS:** MATERIALISM, LIFE VALUES, HAPPINESS

### Introduction

One of the most striking trends over the past 100 years has been the evolution of consumption as a culturally accepted means of seeking success, happiness, and the populist notion of the good life (Burroughs & Rindfleisch, 2002). In the US, the consumerism culture evolved from the needs of the community in the early colonial times shifting to a society today focused on individualism and a concern for the individual (Ger & Belk, 1985). Mason (1981) argued that it has only been within the last few hundred years that an individual's well-being is being affected by discretionary consumption that has become available to the masses.

Research on youth value changes (Easterlin & Crimmins, 1991) indicated that materialism significantly increased among U.S. young people since the early 1970s. Data from the U.S. Department of Education (1988) showed that young people placed more emphasis on earning a lot of money but less emphasis on work. Consistent with these findings, Twenge and Kasser (2013) examined three generations from a survey of 355,000 graduating high school seniors from 1976-2007. Compared to Baby Boomers and youth from the mid-late 1990's, recent respondents were significantly more materialistic. Sixty two percent of students surveyed in 2005-07 agreed that it is important to have a lot of money, while just 48% had the same belief in 1976-78. Materialism peaked in the 1990s with Generation X and has continued to stay high.

Kasser, Ryan, Couchman, and Sheldon (2004) refer to the culture of consumption as a materialistic value orientation where aims, beliefs, goals and behaviors encourage individuals to pursue materialistic values and consumption. They concluded that this orientation is developed through

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experiences that induce feelings of insecurity and from exposure to social models that encourage materialistic values. When this orientation becomes the focal point to a person's system of values, personal well-being declines. This decline in well-being is likely caused by the decrease of important psychological needs. Additionally, their research indicates that this value orientation can damage interpersonal and community relations as well as the ecological health of our planet (Kasser et al., 2004).

### **Materialism and Life Values**

Various reviewers (e.g., Belk, 1985; Csikszentmihalyi & Halton, 2002; Sirgy, 1998) have proposed that consumer behavior occurs from a desire to have possessions as objects symbolizing self-worth and identity. Materialism is widely viewed as an important life value (Kasser & Ryan, 1993; Richins & Dawson, 1992). According to Kasser (2016), two sets of factors lead people to have materialistic values. First, people are more materialistic when they are exposed to messages from their parents and friends, society, or the media suggesting that such pursuits are important. Second, people are more materialistic when they feel insecure or threatened, whether because of rejection, economic fears, or thoughts of their own death.

Although an individual's relationship to material possessions contributes to self-identity, intrinsic needs, and personal goals (Ahuvia & Wong, 1995; Belk, 1988), increased levels of material possessions do not lead to increased happiness (VanBoven, 2005) but rather create a lifestyle with long-term negative consequences for both society and the individual (Richins & Dawson, 1992). In the mid-1980s and early 1990s (Belk, 1985; Kasser & Ryan 1993; Richins & Dawson, 1992), empirical evidence began to accumulate showing that the more that people prioritized values and goals for money and possessions, relative to other aims in life, the lower they scored on outcomes such as life satisfaction, happiness, vitality, and self-actualization, and the higher they scored on outcomes such as depression. Belk (1985) also found that a materialistic life outlook undermines deep spirituality and satisfying relationships.

In summary, although research on materialism has been popular for several decades, researchers have more recently begun to focus specifically the different ways that happiness might be related to materialistic values. In the next section, we describe this new cycle of research.

### **Materialism and Happiness**

Research has shown that the pursuit of happiness has been the focal point for decades in psychology, especially after World War II with the prevalence of additional mental health disorders worldwide. Doctors treating those patients at that time realized that relieving suffering, is not the same as flourishing. People wanted to thrive, not just survive. Beginning in 1998, the president of The American Psychological Association, Martin Seligman, founded a new field titled Positive Psychology. The framework for this field focused on the factors that enabled individuals and individuals to flourish. The PERMA theory (2018) emphasized five key elements that add happiness and meaning to life. These elements include (1) the benefits of positive emotions of all types, (2) engagement with what we are doing and our surroundings, (3) positive relationships of all kinds at all levels of life, (4) cultivation of a purpose or a meaning to each day, and (5) the development of personal and professional goals to strive towards throughout life. According to this theory, we need all of these elements and, the more we have of each, the happier we are presumed to be. The fewer we have, the less satisfied we are, and if we are missing any element completely, then we will most likely be unhappy.

Positive psychology interventions have been increasing in popularity as individuals become interested not only in alleviating negative affect, but also in increasing life satisfaction and well-being. Much of the intervention research utilizes populations from wealthy nations where materialism continues to increase in normativity (Kasser, 2004). However, these interventions tend to overlook materialism and its connection to life satisfaction. As more research focuses in this new field of positive psychology, researchers can become better equipped to help people shift focus from what they do not have, to valuing and appreciating what they do have.

Institutions can also use the PERMA model to develop programs that help people discover and use new cognitive and emotional tools. For example, police departments are implementing officers' wellness and resiliency trainings to improve well-being and provide skills for enhancing healthy

relationships and improved decision-making (Arevalo, 2020). Other research conducted on nearly 21,000 military veterans (Reinberg, 2019), found those with a positive outlook before they were sent abroad reported fewer bouts with pain after deployment, including new back pain, joint pain and frequent headaches. This result suggests that optimism can be an effective tool in helping to cope with chronic pain. In summary, research based on the PERMA model supports that argument that one's mental attitude can affect one's physical health.

Research examining happiness (e.g., Carter & Gilovich, 2010) indicates that individuals who are less materialistic are happier, in most cases because of the way they spend their discretionary income. Numerous studies have concluded that people who place a relatively high priority on materialistic values/goals consume more products and incur more debt, have lower-quality interpersonal relationships, act in more ecologically destructive ways, have adverse work and educational motivation, and report lower personal and physical well-being (Kasser, 2016).

There are gaps in the research literature on materialism, values, and happiness. Our study examines the relationship of what people indicate as their life values and what really matters to their levels of materialism and general happiness. We first expected to find a negative correlation between materialism and happiness scores. We also predicted that individuals who report valuing material goods or their acquisition would report higher levels of materialism and lower levels of happiness than those who do not list material goods as a life value. Alternatively, we expected that people who identify God or religion as one of the things they value most in life will report lower levels of materialism and higher levels of happiness compared to those who do not identify God or religion as a life value. We made a similar prediction for those participants who indicate family and friends as important life values compared to those who do not. With respect to what participants report really matters to them, we expected patterns similar to the life values predictions. Finally, we explored additional values that emerged out of the participants' responses as they related to materialism and happiness.

## Method

**Participants.** Participants were 200 college students (132 women, 68 men) from a large, public comprehensive university located in the southeast US. Students were enrolled in General Psychology who completed the survey for course credit. Students were primarily freshmen and sophomores, with an average age of 20.16 years ( $SD = 3.54$ , range: 18-39). The majority of respondents described themselves as either employed part-time ( $n = 99$ , 49%) or unemployed ( $n = 85$ , 42%), with 88% of participants reporting an average monthly income of less than 1500 USD.

**Measures.** Participants completed measures of materialism and subjective happiness. The short form of the Material Values Scale (MVS; Richins, 2004) consists of 15 items pertaining to materialism subscales of success (e.g., "I like to own things that impress people"), centrality (e.g., "buying things gives me a lot of pleasure") and happiness (e.g., "I'd be happier if I could afford to buy more things"). As such, this measure assumes that materialism reflects a very specific set of life values that are clearly related to a consumption and consumeristic orientation. The MVS has been used by many researchers who are interested in studying individual differences in perceptions of and beliefs about materialism. People with high "success" scores view material goods as means for determining and establishing their personal achievements and social status. High scores on "centrality" indicate the extent to which people view material possessions are crucial to their overall life and sense of self. High "happiness" scores denote the extent to which a person's happiness is tied to and dependent upon material goods and their acquisition. Respondents rated the items using a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*), with higher scores denoting greater materialistic values. Richins (2004) and Lipocvan, Prizmić-Larsen, and Brkljačić (2015) provide evidence supporting the reliability and validity of the MVS. In the current study, internal consistency values were in acceptable range for the total score ( $r = .81$ ) and the success ( $r = .66$ ), centrality ( $r = .62$ ), and happiness subscales ( $r = .72$ ).

The Subjective Happiness Scale (SHS, Lyubomirsky & Lepper, 1999) is a brief (4-item) measure of global happiness. Respondents rate the items (e.g., "In general, I consider myself...") using 7-point scales (1 = *not a very happy person*, 7 = *a very happy person*). Total scores reflect the average of the four items, with a possible range of 1-7 and higher scores indicating greater happiness. The SHS is a popular and well-validated measure of happiness used in many cultures (e.g., O'Connor, Crawford, & Holder, 2015; Spagnoli, Caetano, & Silva, 2012). Researchers have used the SHS as a way to gather

brief assessments of how happy people are overall and in comparison with their peers. With the present sample, internal consistency was acceptable ( $\alpha = .78$ ).

Participants also completed two open-ended questions, by describing “the three things you value the most in life” and “what it is that really matters to you in your current life situation and in the future.” We included these open-ended questions to provide additional data to help us examine the relationship between happiness and materialism. Demographic items included gender, age, highest level of education completed, current job or employment status, country of birth and residence, and approximate monthly income.

**Procedure.** Participants completed the survey in small groups of 5-10. We described the project as a study of feelings and attitudes towards possessions as well as the important things in people’s lives. After reading the informed consent form, they completed the demographic items, MVS, open-ended questions, and SHS. The survey took between 10-15 minutes to complete for most respondents. We received approval for conducting the project through our university’s Institutional Review Board.

We developed a content coding scheme for the open-ended (“value most” and “really matters”) questions. Two of the authors reviewed all responses for each question and generated categories. This content review generated six categories including: *God/religion* (e.g., God, religion, faith, church, spirituality, missionary), *family* (e.g., family, wife, children, parents, spouse), *material goods* (e.g., specific material goods, money, job, income, employment), *friends* (e.g., friends, boyfriend, girlfriend, fiancé, friendship, people that support me, sisterhood, people around me, relationships), *health* (e.g., physical health, mental health, mind-body, peace of mind, laughter, happiness, enjoying life, empathy, being positive, general life success), and *education* (e.g., education, degree, studying, academics, grades, classes, school, learning, knowledge, intelligence).

Following the identification of the content categories, the two authors worked together to determine whether each category was (1) or was not (0) present for all participants’ responses to “value most” and “really matters” questions. After this coding was completed, we recruited two research assistants and trained them to independently code all responses. To guide their coding, we provided research assistants with several descriptors that we identified as “indicators” of the main category. Comparing the three sets of coded data revealed acceptable inter-rater reliability estimates, with intraclass correlations ranging from .81-.97 for the “value most” categories and from .91-.98 for the “really matters” categories. We therefore used the coded data from the two authors for the open-ended questions. Three participants did not answer the “value most” question and five participants skipped the “really matters” question. Therefore, we based the reported results with these data using  $n = 197$  and  $195$  respectively.

## Results

### Descriptive Statistics

Table 1 presents the percentages of participants who mentioned each of the six life values categories in their responses to the “value most” and “really matters” questions. As the table shows, for the “value most” question, family and friends were more frequently mentioned, with education being least frequently mentioned. For the “really matters” question, family and education were more frequently mentioned, with God/religion being least frequently mentioned. To further explore these differences, we conducted Chi-square analyses on the yes/no frequencies comparing the “value most” and “really matters” questions. These analyses showed that participants more frequently listed God/religion, family, and friends as things they value most than as things that really matter. Alternatively, participants mentioned education as something that really matters more often than something that they value most in life.

Table 1. Percentages of Responses that Mention Life Value Categories for the “Value Most” and “Really Matters” Questions

Life Value Category	Value Most	Really Matters	$X^2$	$p$
God/religion	23%	7%	22.15	0.004
Family	81%	37%	10.99	0.001
Material Goods	17%	19%	0.13	0.718
Friends	51%	15%	7.38	0.007
Health	28%	22%	3.14	0.076
Education	16%	35%	10.49	0.001

Note. For Value Most item,  $n = 198$ ; for Really Matters item,  $n = 196$ .

### Test of Hypotheses

We first examined the relationship between total and subscale materialism scores and general happiness scores. As expected, there was a negative relationship between overall materialism and happiness, although this relationship was very small and not statistically significant,  $r(198) = -.03$ ,  $p = .64$ . Among the MVS subscales, those who reported deriving more of their happiness from materialistic values (i.e., materialism-happiness subscale) reported significantly lower happiness scores,  $r(198) = -.21$ ,  $p = .003$ . Thus, we found partial support for this prediction.

We tested the remaining predictions by comparing those who did and did not list specific life values and things that matter most to them. We present the materialism and happiness results in Tables 2 and 3 respectively. As Table 2 shows, participants did not differ significantly on their overall materialism scores regardless of whether or not they mentioned specific value categories. However, when examining the MVS subscales, we found that those who mentioned God/religion ( $M = 12.87$ ,  $SD = 3.26$ ) as something that they value most reported lower levels of materialistic happiness compared to those who did not mention this category ( $M = 14.26$ ,  $SD = 3.63$ ),  $t(195) = 2.33$ ,  $p = .021$ . Thus, there was partial support for the God/religion and materialism hypothesis.

Table 2. Comparisons of Those who Did and Did Not Mention Specific “Value Most” and “Really Matters” categories: Overall Materialism Scores

Life Value Category	Value Most		Really Matters	
	Yes	No	Yes	No
	$M (SD)$	$M (SD)$	$M (SD)$	$M (SD)$
God/religion	49.59 (7.11)	50.82 (7.29)	48.62 (7.42)	50.66 (7.20)
Family	50.34 (7.11)	51.32 (7.60)	49.87 (7.70)	50.87 (6.95)
Material Goods	50.79 (8.49)	50.48 (7.00)	49.98 (7.11)	50.78 (7.27)
Friends	50.04 (7.39)	51.04 (7.09)	50.62 (7.28)	50.51 (7.22)
Health	50.42 (6.39)	50.55 (7.46)	50.95 (7.70)	50.41 (7.09)
Education	50.81 (7.21)	50.48 (7.28)	51.53 (6.74)	49.89 (7.39)

Note. For Value Most item,  $n = 197$ ; for Really Matters item,  $n = 195$ .

Table 3 shows that, for happiness, there was one significant difference between those who did and did not mention family as something they most value in life. Those mentioning family reported significantly higher levels of subjective happiness than those who did not mention family. This finding was also consistent with our expectations. For the friends category, happiness scores were actually opposite of what we expected, with those mentioning friends as something that they “value most” and “really matters” reporting somewhat lower (but not significantly different) happiness scores.

Table 3. Comparisons of Those who Did and Did Not Mention Specific “Value Most” and “Really Matters” categories: Overall Happiness Scores

Life Value Category	Value Most		Really Matters	
	Yes	No	Yes	No
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
God/religion	5.38 (1.01)	5.20 (1.07)	5.65 (0.97)	5.20 (1.06)
Family	5.34 (1.01)	4.82 (1.17) **	5.30 (1.04)	5.19 (1.07)
Material Goods	5.20 (0.94)	5.25 (1.08)	5.27 (0.97)	5.22 (1.10)
Friends	5.17 (1.07)	5.31 (1.05)	5.16 (1.19)	5.25 (1.03)
Health	5.32 (0.99)	5.22 (1.08)	5.25 (0.98)	5.23 (1.08)
Education	5.02 (1.18)	5.28 (1.03)	5.22 (1.21)	5.25 (0.97)

Note. For Value Most item,  $n = 197$ ; for Really Matters item,  $n = 195$ . \*\*  $p < .01$ .

In additional analyses, we examined whether female and male students differed on the major measures and whether age was related to those measures. On the measures of materialism and subjective happiness, there was one significant gender difference. Men reported higher scores on the success subscale of materialism ( $M = 13.49$ ,  $SD = 3.23$ ), than women ( $12.34$ ,  $SD = 3.00$ ),  $t(198) = 2.49$ ,  $p = .014$ . This indicated that men reported measuring their success more strongly by material possessions than did women. For the “value most” and “really matters” data, there was one significant gender difference. A greater proportion of women listed education as something that they value most (21%) than the proportion of men who did (4%),  $\chi^2(1) = 9.58$ ,  $p = .002$ . Age was significantly and negatively correlated with two MVS subscales, success ( $r(196) = -.14$ ,  $p = .04$ ) and centrality ( $r(196) = -.21$ ,  $p = .004$ ). In other words, younger students reported materialism being more closely tied to their success and centrality than did older students.

## Discussion

In the current study, we examined the relationship between life values, materialism, and general happiness among US college students. Research shows that happiness and materialism are negatively related (e.g., Carter & Gilovich, 2010). Our findings revealed a similar relationship between these two variables. Findings from the two open-ended value/importance questions revealed that participants more frequently valued God, religion, family, and friends as things that really matter. Further, among the things people valued the most, those who mentioned God and religion reported lower levels of materialistic happiness and those who mentioned family reported higher levels of happiness compared to those who did not mention these categories. Additional findings revealed differences between men and women related to materialistic values as well as younger students associating materialism with success more so than older students.

The findings pertaining to religion suggest a possible buffering effect on the negative happiness and materialism relationship (Rakrachakarn, Moschis, Ong, & Shannon, 2015). In particular, those who report God/religion as something they most value appear to derive less of their happiness from materialistic activities. Research using a South Korean sample (Lee & Kawachi, 2019) shows that those who prioritize religion report higher levels of happiness than those who do not. There is also evidence from Indonesia that religiosity is associated with stronger ethical beliefs and lower levels of Machiavellianism (e.g., Arli, Tkaczynski, & Anandya, 2019), which could be related to lower materialistic values.

It is also possible that these results reflect the specific region of the US from which the current sample was drawn. The southern US is known as the “Bible Belt” and as more strongly religious than other parts of the country (e.g., Park, Peterson, & Seligman, 2006). Southern US states also report lower levels of overall happiness compared to other US regions (McCann, 2018). Conducting similar research in other regions of the US would be informative and interesting in order to assess the robustness of our results.

Happiness scores were associated with mentioning family as something that is highly important or valued. This finding is consistent with other research showing that family support is an important

predictor of happiness (North, Holahan, Moos, & Cronkite, 2008). Further research should examine more thoroughly how valuing family is related to happiness and how that relationship might relate to development of materialistic values.

The gender differences in materialism showed that men relied more on material possessions for their success than did women. Related research (Segal & Podoshen, 2013) has found that men score higher than women on materialism and conspicuous consumption measures, whereas women score higher on measures of impulse buying. Other research suggests that women report more emotional and relationship-oriented reasons for their possessions, whereas men prefer more functional and instrumental reasons (Dittmar, 1989). Possible explanations for these differences include impression management (O’Cass, 2001), as well as theories related to evolutionary psychology and socio-cultural factors (Meyers-Levy & Loken, 2015).

The age difference result showed that younger students reported higher materialistic success and centrality scores than older students. There is some indication that materialism increases from childhood to adolescence (Chaplin & John, 2007) and that materialism tends to decrease from early to later adulthood (Yeshi & Tee, 2018). The fact that older students reported materialism being less closely tied to their success and centrality than did younger students suggests that there may be a tempering in adulthood of the materialism that is characteristics of adolescents (e.g., Twenge & Kasser, 2013). Although our sample was primarily young adult, the relationship we found is consistent with previous results. Future research should examine more closely changing patterns of materialism across adulthood.

The observed differences between what participants reported valuing the most and what they thought really matters are worth considering in more detail. In particular, participants indicated highly valuing friends and family, but rating those dimensions much less often when listing the things that really matter in life. On the other hand, education arose as a frequent mention of what really matters in life, whereas that domain was infrequently mentioned as being highly valued by our sample. The fact that we found differences across the two open-ended questions suggests that participants were using different criteria in answering those questions. Further exploration of those possible criteria might be a worthwhile goal as well.

### **Limitations and Further Research Directions**

We collected general, cross-situational data about materialism, happiness, and the things that really matter and are valued most by people. Because we took a general approach, we were unable to examine the ways that specific events and outcomes might relate to people’s happiness and materialistic values. It would be interesting to explore more directly how individual positive or negative experiences (e.g., getting a desired job, being disowned by one’s parents) alter people’s general materialism and happiness self-assessments.

Our use of the Subjective Happiness Scale limited our conceptualization of happiness. There are other happiness measures that operationalize it as a multidimensional construct (e.g., Kashdan, 2004). Using one of these measures would permit a more nuanced view of the ways that materialism and happiness relate to each other and how different facets of happiness might relate to what people most value and view as really mattering in their lives.

In a study examining materialism, well-being, and personality, Górnik Durose (2019) found that materialistic well-being is affected by personality-driven needs and goals. More specifically, materialism serves the function of elevating difficulties due to personality traits such as neuroticism and narcissism. Assuming that materialism is a value influencing the way people behave and make decisions (Richins 2004; Richins & Dawson 1992), research should consider examining other conceptualizations and mechanisms influencing materialism, well-being, and happiness including personality traits, mental health, and religiosity. In addition, methodological approaches and conceptualization of mediating factors such as conflicts between values, social relationships, and perceptions of material goals and needs should be considered (Górnik Durose, 2019).

The United States is considered a highly individualistic and materialistic culture which scores lower than many other industrialized countries on happiness and well-being. However, limited studies exist examining the relationship between materialism, happiness and life values. Stillerman (2015) developed a comprehensive global framework contrasting views about the United States and Europe

and non-European societies and exploring cross-national and cross-regional differences on how consumption is experienced. There is a need for cross-cultural research to understand the relationship among these variables based on samples from different geographic locations (e.g., Kaur & Anand, 2018). While research based on equitable and sustainable well-being and happiness concepts has been ongoing in Bhutan, results illustrate that happiness and economic growth are by no means synonymous and that, once the essentials of life have been secured, further fulfillment comes from indulging not the material but the immaterial pleasures of life. Thus, friends, family, health, and a sense of positive purpose become central to satisfying living. In conjunction with the United Nations outline of a *New Development Paradigm*, a framework was developed to inform policies in Bhutan and other global societies. This report further declared that Gross National Happiness is more important than Gross National Product (Center for Bhutan Studies and GNH, 2017).

### Implications

As we have noted, the findings from this study reveal the need to support further research that examines the relationship between life values, materialism, and happiness. In addition, there is a need to further the understanding of the influence of cultural values on the perception of happiness across demographic sectors of societies. Suggested applications of these results include the development of programs of study in economics, financial planning, and life skills incorporating the relationship of social and personal values to purchases and material possessions. Understanding how members of society experience and perceive happiness can lead to new social policies. For instance, policymakers might consider ways to help citizens to adopt personal practices that support relational experiences unrelated to materialism and that add value to society.

In conclusion, we have shown that there are interesting relationships between materialism, happiness, and life values. The current results offer several avenues for future research and applications with these variables. We are especially interested in expanding this research cross-culturally, given the likelihood that all three factors are affected by historical, economic, and cultural influences. Data are currently being analyzed from Malaysia, India, South Korea, Nigeria, Austria, and Pakistan. These countries differ in their economic levels, approaches to materialism, and scores on global indicators of well-being. Our plan is to contextualize our research questions using adult participants from these locations. Within the next few years, we intend to publish the findings using these international samples.

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# Resistance and Resilience: An Afrocentric Collection of 3D Printed Jewelry, and Digitally Printed Head Wraps

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## Abstract

*This design process resulted in a capsule collection of Afrocentric 3D printed jewelry and digitally printed textiles used for headwraps. Historical and cultural inquiry as well as personal reflection on Black identity and self-acceptance provided design inspiration. This work was part of a master's thesis completed by an African American female student, and explored the use of three-dimensional printing, a disruptive form of production within the fashion industry, along with digital textile printing. Additionally, this design process demonstrates an exploration and expression of minority identity using more sustainable additive manufacturing processes. This study facilitated advanced skill development related to emergent technology, and allowed for personal exploration of Black identity, history and culture.*

**KEYWORDS:** 3D MODELING & PRINTING, DIGITAL TEXTILE PRINTING, AFRO-CENTRIC DESIGN, BLACK IDENTITY, SUSTAINABILITY

## Introduction

Ancestral knowledge for African Americans was disrupted by the massive Atlantic slave trade. As a result, many have longed to understand their ancestry and place in society as African Americans, asking questions such as “Who am I?” and “Where do I come from?” This design process and outcomes explore and respond to these ideas and experiences related to African American history and identity.

Specifically, the purpose of this research is to explore and interpret past forms of Afrocentric dress and concepts related to personal identity and acceptance, and to respond creatively through the use of a technologically based, sustainable design process using 3D printing (3DP) and digital textile printing (DTP). A conceptual framework for design process was utilized to guide this work. LaBat and Sokolowski (1999) surveyed and analyzed the design process across a variety of disciplines including architecture, engineering and others and summarized that a variety of design processes basically fit into what they define as a three-stage process: problem definition and research, creative exploration, and implementation. Each step of this three-stage design process allows for further exploration to include refinement of the problem, prototype testing and building, as well as further analysis and refinement of final outcomes. As such, our process is here presented using the LaBat and Sokolowski three stage design model. This study was completed in partial fulfillment of a Master of Science in Apparel Product Development and Merchandising Technology. A goal of the work was to further develop a professional portfolio to demonstrate proficiency in apparel design and product development. Subsequently, the first author is currently employed as a member of a product development team for a leading American retailer.

## Problem Definition and Research

A general review of sources related to the cultural identity of Africans and African Americans within both historical and contemporary contexts, along with a consideration of the existing body of work related to apparel design and cultural identity, provided inspiration for this applied design process.

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We by no means imply a full consideration of African and/or African American dress and identity as that would be impossible and beyond the scope of this design process. Our general examination of cultural and historical context was a result of personal interest and was used as a means of self-reflection and design inspiration. The design problem (or challenge) was to develop a micro collection of jewelry and textiles which attempt to respond to the “cultural translation that Africans had to undergo in the Americas, a transformation of their identities from those based on ethnicity or the specifics of their African origins, to race or a sense of blackness that was both imposed upon and taken on by Africans in America” (Miller, 2010, p. 88).

Fashion and cultural studies are both interdisciplinary fields; analyzing them adequately requires multiple perspectives. Kaiser (2012) proposed that fashion and culture are “interrelated and remarkably similar,” identifying fashion as a “custom for a time and culture as a ‘custom over time’” (p. 12). To comprehend culture and the methods used to express identity, one must incorporate various disciplines in the humanities, including art, history, sociology, anthropology, and design (Kaiser, 2012). Sources related to sociology and the Black experience, dress and identity, fashion studies, historical studies of African civilizations, politics, and sumptuary laws informed this design process.

Dress and adornment in Africa are a vast topic; a comprehensive study of the subject would include countless ethnic groups, cultures, and styles. As such, the designers focused on historical accounts of African or African American women who overcame difficult circumstances and showed perseverance and resolve, coupled with self-reflection. This research focused on three concepts: female warriors of the Dahomey kingdom (present-day Benin/Togo/Nigeria), the Tignon law (c. 1786) of colonial Louisiana under Spanish rule, and finally the “inward ‘twoness’ or double consciousness experienced by African-Americans due to racialized oppression and [devaluation] in a white-dominated society” (Pittman, 2016, para.1).

### **Dahomey Enslaved Female Soldiers**

During the eighteenth and nineteenth centuries, many African women were captured for conscription into an all-female regiment of the Dahomey (approximately present-day Benin) kingdom army. Fathers in the kingdom were also ordered to “appear at court once every three years with all of their daughters aged from as young as nine to fifteen or even older” (Edgerton, 2000, p. 21). Many were forced to renounce all ties to their family and past and had to take a blood oath of loyalty to protect the king and a vow of chastity to be broken only if the king desired sexual relations. Assimilation into the army was welcomed by some, but other women who desired marriage and children are said to have fled or, in an act of desperation, taken their own lives (Edgerton, 2000).

These captive women were taught to fight, growing and learning to be swift and strong. Their main “purpose in life was to make war” and to protect their king and kingdom at all costs (Alpern, 1998, p. 10). The power they wielded in the kingdom and their ferocious reputation in some ways challenged patriarchal norms. They had the right to inherit property and, in some respects, were considered to be superior to men, while paradoxically remaining enslaved (Edgerton, 2000). These female soldiers developed a distinct identity in part through differentiated dress and the use of uniforms. In many neighboring nations, armies were only assembled when needed, and soldiers did not always strive to look identical. However, the Dahomey kingdom used battle uniforms comprising tunics with shorts or skirts in colors such as, blue, brown, rust, and grey, as shown in Figure 1 (Alpern, 1998).

In contrast, ceremonial dress included “knee-length or ankle-length pagnes [wrapper]”; head caps in bright colors such as red, crimson, green, and light blue; and multicolored garments made of silks, velvets, chintzes, and cotton (Alpern, 1998, p. 56). Officers of the army were said to have worn tunics with gold embroidery, their garments made in violet, pinks, greens, and whites (Alpern, 1998). The warrior women were elaborately decorated, wearing an array of charms including necklaces of “imported glass beads or indigenous beads or coral; armlet[s] of silver, brass or iron; [and] bracelets of silver, copper, iron or tin” (Alpern, 1998, p. 58). The dichotomy—the sartorial image of power contrasting with the reality of enslavement—created a unique situation for these women.



Figure 1. (l to r). Dahomey Soldiers, top row, depicted in Battle uniforms, (left) “Two Amazon officers with long muskets and horns of mark on their heads” (A. Bouet, “Le royaume du Dahomey,” *L’Illustration*, no.492, July 31, 1852, p. 72.). (Right) Illustration from 1851, known as first serious attempt to depict a woman soldier of Dahomey. (F.E. Forbes, *Dahomey and the Dahomans*, 2 vols. (London, 1851), vol. I, opp. p. 23.) Bottom row, (left) musicians with a gourd rattle, a drum, and a (vague) trumpet in the background. (A. Bouet, “Le royaume du Dahomey,” *L’Illustration*, no. 492, July 31, 1852, p. 72.). (Right) “Dahomean at the Zoological Gardens of the bois de Boulogne”, 1891 (Collection Musee de L’Homme, Paris).

### Tignon Law of 1786

Class systems and ways to differentiate between classes have been enforced throughout history. Some sumptuary laws were established when the societal caste system had come to a point where the wealth “no longer [resided solely] in the hands of the nobility” (Hurlock, 1965, p. 297). Sumptuary laws in the Americas were developed by the “ruling class . . . to prohibit imitation [or interpretation] of the appearances they wanted to maintain for themselves . . . in order to preserve the existing class structure” (Kaiser, 2012, p. 107). Ratified in 1786 in Louisiana, the Tignon law “forbade: females of color . . . to wear plumes or jewelry”; this law specifically required “their hair bound in a kerchief” (Bradley, 1995, p. 449). “Tignon is a New Orleans word for head-wrap, a variation of the French word, chignon,” which “means a smooth knot or twist or arrangement of hair that is worn at the nape of the neck” (Bradley, 1995, p. 459). Women of color were not allowed to display their natural hair in public, “in order to appear more acceptable by [European] standards” while upholding racially based societal hierarchies. (Ellis-Hervey, Doss, Davis, Nicks, & Araiza, 2016, p. 871). Johnson and Bankhead (2014) asserted hair in all cultures is a status symbol that can indicate religion, social rank, marital status, and age. Ellis-Hervey et. al (2016) contend that in Africa certain hairstyles indicated one’s place in society and “in an effort to repress the beauty of Black hair [the Tignon law was

enacted] and European features were established as the accepted standard of beauty” (p. 871). Many women of color affected by the Tignon law resisted the oppressive narrative and converted it “into an anti-style by flaunting the head-wrap” (Bradley, 1995, p. 453). For some women, the head wrap “acquired significance as a form of self and communal identity and as a badge of resistance against the servitude imposed by whites” (Bradley, 1995, p. 458). The ban on “Black extravagance” indicated how appearance and clothing designated status, demarcating differences between “slave and master, whiteness and blackness, masculinity and femininity, Africanness or Americanness” (Miller, 2010, p. 92). Style then “becomes a form of resistance as well as expression” (Kaiser, 1998, p. 570-571).

The wearing of a head wrap is not “specific to any one cultural group”; both men and women of various cultures have done this for many generations (Bradley, 1995, p. 446). With origins in sub-Saharan Africa, head wraps were worn by both sexes long before the Atlantic slave trade. Historically, the symbol of the head wrap has been a cultural identifier across a variety of terrains. However, the way in which the head wrap is tied onto the head is culturally specific (Bradley, 1995). The difference between how European or White American women wear, fold, or tie a head wrap and how women of African ancestry do so denote a difference in culture and style. According to Bradley (1995), a woman of European ancestry will fold the fabric in a triangular shape and cover “her hair by tying the fabric under her chin; or, less often, by tying it at the nape of the neck” (p. 446). In contrast, a woman of African descent ties the fabric in a way that leaves the face open, allowing the head wrap to visually enhance her facial features to create intriguing and unique shapes with the fabric; “a woman of African ancestry folds the fabric into a rectilinear shape,” allowing for the ends to be folded or tucked at the crown of her head (Bradley, 1995, p. 446).

### **Double Consciousness and Identity**

This design process also examined the improvisation slaves used to maintain their sense of identity, “carefully selecting elements of various cultures both African and European . . . [borrowing] what was of interest from external society and [improving] upon previously existing commonalities of African cultures” (Miller, 2010, p. 88). This exploration of the push-pull of ancestral versus imposed identity was explored via the theory of double consciousness, which is the experience of knowing two worlds at once. This “consciousness” is a result of the dispersion of Africans from their homelands, which affected their culture (Bazylinski, 2013). According to Du Bois (1903), the theory of double consciousness can lead “to a painful self-consciousness, an almost morbid sense of personality and a moral hesitancy which is fatal to self-confidence” (p. 202). He further asserted that double consciousness is the sensation “of always looking at one’s self through the eyes of others,” being able to see yourself only “through the revelation of the other world” (Du Bois, 1903, p. 3).

Many African American women feel a persistent pressure to present themselves in a way that puts everyone at ease. Harris-Perry (2011) explained some of the stereotypes that affect Black women in America such as the lascivious Jezebel, the contented self-effacing Mammy, and the overbearing, aggressive Sapphire, perhaps the most prevalent being the “angry Black woman,” who is “shrill, loud, argumentative, irrationally angry and verbally abusive” (p. 87). These stereotypes precede African American women’s true selves, consciously or unconsciously influencing the way society views them (Fry, 2012). Many African American women consciously ensure their actions are not misconstrued as violent, loud, or threatening. According to Jones and Gooden, Black women adapt to others’ expectations continuously adjusting their tone, outward expressions and overall manner (Jones & Shorter-Gooden, 2004).

Considering these varied historical concepts and reflection on personal identity, this creative design process attempts to identify and share the beauty and significance, even if in a small way, of African American history and culture with others. It is also our hope to demonstrate, through the design process and completed products, that there is no need to consciously alter one’s identity to become acceptable in a world dominated by those who consider you the other.

### **Previous Seminal Design Work**

Historical and cultural studies of design and product development have often explored the practice of semiology in clothing (Dudek & Sparks, 2015). Clothing is a powerful way to symbolically express one’s values and cultural connections (Perez, 2016). Within the field of clothing and textiles many academics have in recent years also incorporated the use of additive manufacturing technology such as 3DP into their design processes, generating more sustainable and highly innovative work. Additive

manufacturing such as 3DP vs. traditional subtractive processes adds only the material required to form an object versus cutting the object away from an existing material mass (Vanderploeg, Lee, & Mamp, 2016). While DTP wouldn't specifically be classified as an additive process, it does allow the designer to customize and print only that material which is essential to complete the project at hand. This study is preceded and informed by several studies that used clothing and technology as a catalyst to expand cultural appreciation and understanding through visual expression (Perez, 2016).

Dudek and Sparks (2015) explored a combination of cultures through design in their study, which *combined* "diverse cultural approaches to design" to demonstrate how "varying cultural traditions can be brought together" (p. 1). The garment-fused CAD created African batik prints with European crochet techniques. The examination of African textiles combined with techniques and technology provided the field with an artifact that explored the "capacity of textiles to inspire" across cultural boundaries (Dudek & Sparks, 2015, pp. 1-2).

Mamp and An (2016) also examined the combination of two distinct cultures, using words rather than singular design techniques. Their study explored the use of language as critical "to the formation of distinct cultures" (Mamp & An, 2016, p. 1). Inspired by the Yiddish poem "Zun O Zun" by Bessie Hirschfield Pomerantz, the colleagues examined "the exchange and preservation of language as an outward symbol of real and internalized ideals of cultural identity" (Mamp & An, 2016, p. 2). The result was a digitally printed textile that incorporated words and phrases from the poem in both Yiddish and Korean. The final garment silhouette was derived from a traditional Korean costume known as the hanbok. The dress was adorned with a pendant "created with the use of Rhinoceros 3D modeling software and printed on a MakerBot Fifth Generation 3D Printer" (Mamp & An, 2016, p. 3). This collaboration celebrated cultural diversity through a technologically aided design process (Mamp & An, 2016).

Ellington's work (2016) focused on the interpretation of African history and culture into design. Her research specifically uncovered the value "and methodologies of using fables in fashion artwork" (Ellington, 2016, p. 1). Her purpose was to communicate African fables "without words, only texture, pattern, and silhouette" (Ellington, 2016, p. 1). The project comprised four garments, each one retelling an African fable. The fables were all informed by historical research on various African cultures, including the San people of Botswana, Namibia, Angola, Zambia, Zimbabwe, and South Africa; the Basotho tribe of north Sotho, South Africa; the Dogon tribe; and the Ghanaian tribe (Ellington, 2015).

Designer Stella Jean (2012) used similar principles of culture and identity for her clothing line. Jean refers to herself as a storyteller. Similar to Ellington's approach regarding African fables, Jean's first collection aimed to tell a story about her "multicultural reality and the two most important aspects of [her] personality, the European and the Creole" ("In Conversation," 2012, para. 5). She further explained that "fashion gave me a space where both cultures could exist" (quoted in Macalister-Smith, 2012, para. 5). Her work features wax fabrics and stripes. The wax fabric, a "symbol of East Africa ... [originating] in Asia and then developed in Europe before arriving in Africa" represents her mother's Haitian heritage (Macalister-Smith 2012, para. 6). Striped blouses symbolize her father's European ancestry. The designer created a distinct aesthetic that incorporated her Haitian and Italian roots through the implementation of bold and striking prints juxtaposed with modern silhouettes. Thus, the examination and intermixing of cultural references is also relevant to the non-academic designer interested in the development of mass manufactured product.

Clothing has been and continues to be a tool used by people to present their cultural identity. Whether in business or academia, design and dress are used to convey messages of cultural background, values, and influences. This project is a continuation of these studies, using historical and cultural inquiry and a technologically aided design process to understand and communicate concepts of culture and identity through dress.

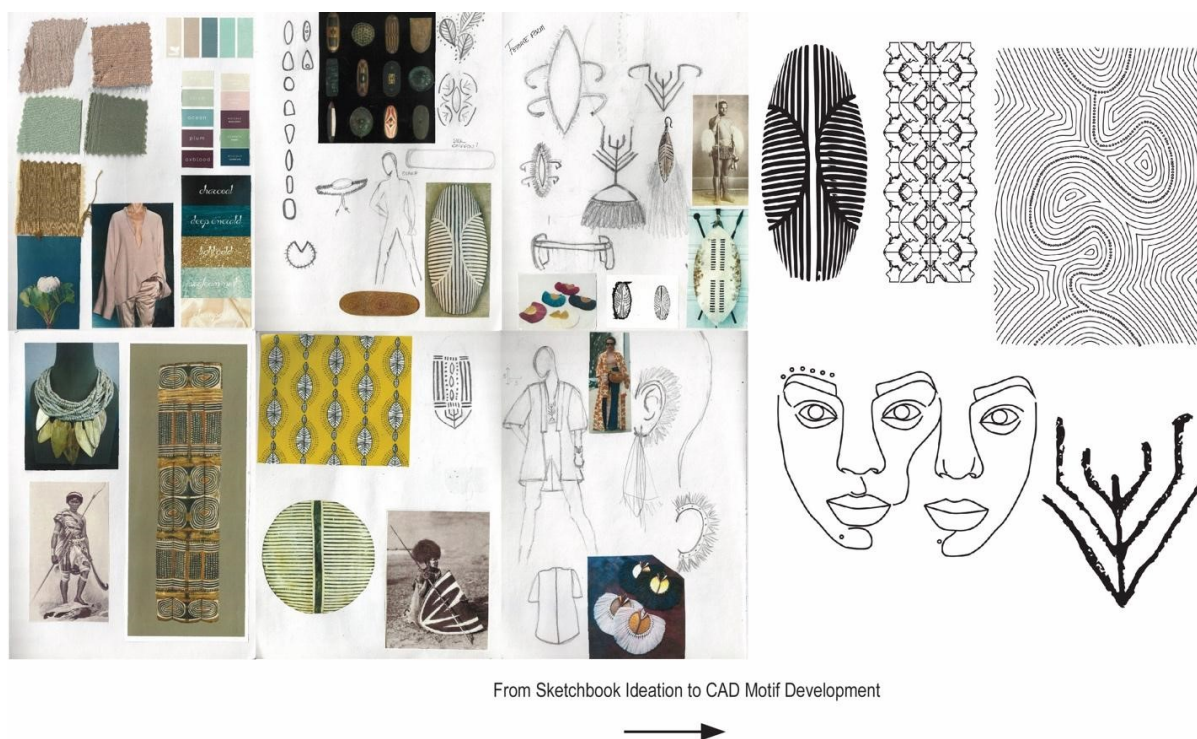
## Creative Exploration

Following the problem definition and research stage of our process, what quickly emerged was the potential for the creation of head wraps and unique three-dimensionally (3D) modeled and printed jewelry. The designers were inclined to further explore the development of 3D printed jewelry as Perry (2017) conducted a study in which participants had a strong interest in wearing and purchasing 3D printed jewelry. In addition, with inexpensive DTP companies, such as Contrado, custom textile



development has become a more efficient process. Contrado offers a wide selection of fabrications made from a range of synthetic and natural fibers which deliver in as little as forty-eight hours (Contrado, n.d.). Contrado will run short orders of less than three yards and offers discounts to both students and academics. The fabric arrives steamed and with the paper back removed. DTP involves the use of fabric on rolls that has been bonded to paper. After steaming to set the dye the paper has to be laboriously peeled off by hand. Contrado completes this process as a part of their service and it is a significant time savings.

The Dahomey warrior women embodied strength and protection; the women of Louisiana were defiant and self-empowering; and the double consciousness theory served as an opportunity for personal reflection. From these distinct yet interrelated concepts, numerous ideas were documented in a design journal. A shield motif symbolizing protection became a focal point incorporated into 3D modeled jewelry. Another motif was derived from a tobacco leaf, a crop commonly grown in Louisiana. Its creation involved the manipulation of a plant image via Adobe Illustrator into a somewhat abstracted geometric form. The tobacco motif was used as a print on garments and on one of the digitally printed headwraps. Two 3D modeled pieces of jewelry and textiles contain linear elements of a fingerprint, a powerful symbol of personal identity, along with an outline of one designer's face, which was traced via Adobe Illustrator (see Figure 2).



**Figure 2.** Design journal ideation (left) with sketches, fabric swatches, color schemes, and inspiration imagery from which motifs (right) developed in CAD established a visual vocabulary for this design process.

Silhouettes for items such as earrings and pendants were designed to imitate the drape of fabric, symbolizing the fluidity of fabric used for head wraps. Jewelry was developed with vulnerable places on the body in mind, such as the ears, wrist, and neck. As initial ideas developed, the two-dimensional jewelry sketches took 3D form via the use of Rhinoceros 3D modeling software. As also noted by Parsons (2015) the design process ultimately became a loop of new ideas, prototype development and adjustments. 3DP and DTP technology allowed for a rapid refinement process with tangible results in a short amount of time. Prototypes were then reviewed by the designers and adjusted to improve function and aesthetic merit.

The jewelry was modeled in Rhinoceros 3D modeling software, which features a parametric design tool valuable for designers who are not skilled in code development (Vanderploeg, Lee, & Mamp, 2016). The software allows for the creation of fully editable 3D models, which can also be developed from 2D shapes and lines. This 3D-modeling process included countless edits, and the software aided



in correction with manipulation commands and structure stability tests to ensure the integrity of the model before printing.

After translating of sketches into 3D models, we saved the items in 3D model (.3DM) format, which includes the surface and curve information of the object. The files were then exported to a stereolithography (.STL) file, which converts the object into a triangulated mesh in preparation for printing. The file is then converted into 2D cross-section slices that “are offset from each other in the z-direction by a distance equal to that of the thickness of each layer deposited by the machine” (Teitelbaum, 2009, p. 10). Each layer is then printed or placed one on top of the other in an additive manufacturing process.

A total of 47 3DP jewelry prototypes were printed and evaluated as a part of our design process (see Figure 3).



**Figure 3.** The application of 3DP to this design process allowed for rapid prototyping/evaluation/and refinement in a circular loop. Pictured here are various prototypes at multiple stages of development in materials including PLA, plastic, and steel.

Early prototypes were printed on MakerBot desktop 3D printers. These prints were accomplished with fused deposition modeling (FDM), an extrusion technique that deposits plastic onto a build platform layer by layer. FDM is ideal for prototyping because it is affordable and fast (Vanderploeg et al., 2016). Polylactic acid (PLA) filament, a sustainable source biodegradable polymer, was used as the medium for these prints. PLA is great for rapid production and refining the design. However, disadvantages of the method include “visible seam lines between layers” (Vanderploeg et al., 2016 p. 174). Our design process was supplemented by the on-site availability of thirty FDM printers and a digital textile printer in the Fashion Merchandising & Design program at our university. After multiple iterations and evaluation of the models printed via FDM, it became evident the designs were too delicate to achieve successful prints via PLA. Five models were then sent to Shapeways for printing. Shapeways brings together a “community of makers, designers, and entrepreneurs using digital manufacturing (3D printing)” (Shapeways, 2017). To print with Shapeways, an electronic file is uploaded via the website and then a material is selected from options including strong and flexible plastic, metallic plastic, frosted detail plastic, acrylic plastic, stainless steel, various precious metals, sandstone, wax, porcelain, aluminum, high-definition acrylate, polylactic acid, and nylon.

Strong and flexible plastic was chosen and printed via another 3D modeling process known as selective laser sintering (SLS). SLS is a 3DP process that bonds powder particles with heat, creating a flexible and structurally sound model (Vanderploeg et al., 2016). After the SLS 3D models were completed by Shapeways, each was assessed for design and function related to fit and thickness. Three additional models were designed, and two prototypes of each were printed via on-site FDM for swift evaluation. In total, final jewelry pieces included three necklaces/pendants, three bracelets, and two pairs of earrings. Final 3D model files were submitted to Shapeways to be printed in gold/bronze steel on binder jetting machines. The binder jet method uses glue “to bond successive layers of powder material together,” creating the 3D product one layer at a time until the piece is completed (Vanderploeg et al., 2016, p. 175). FDM’s onsite printing provided a cost-effective method. Shapeways’ variety of printing materials and methods cost approximately \$800 USD (with student discount) for durable and long-lasting prototypes.

To facilitate the development of textiles for use as headwraps, colors and possible designs were developed digitally in Adobe Illustrator and arranged in 10 x 10 inch squares and test-printed on cotton sateen, organza, and Indian dupioni using a university owned on-site digital textile printer. Once steamed, the silk and cotton fabrics showed noticeable color variation. The cotton fabric also bled heavily after washing. A sample head wrap was then printed via Contrado to compare color clarity and fastness. This sample was printed in Paris chiffon at 17 x 70 inches. Contrado steams and washes all fabric printed prior to shipping. This saves a considerable amount of time, and the cost of printing was comparable to or less than printing on-site using our program’s machine. Upon evaluation, color clarity and fastness of the Contrado textile proved superior to previous samples; however, the resulting head wrap was too small to cover the entire head, and the fabrication was too soft to tie into knots. After adjustments to size and fabrication, five head wraps were printed at 20 x 70 inches in heavier fabrications, including jersey stretch cotton, cotton satin, pima lawn 100% cotton, and organic cotton poplin for variation (see Figure 4). Each head wrap cost approximately \$50 USD for fully finished pieces, variations in price based on fabric content. The designers specifically chose natural more sustainable fabrications for the development of these headwraps.



Figure 4. Final head-wraps printed via Contrado ([www.contrado.com](http://www.contrado.com)). Fabrications from top to bottom included: organic cotton poplin, cotton satin, pima lawn cotton, and jersey stretch cotton. Note use of motifs previously explained in figure 3.

## Implementation

The final head wraps and 3D models were received from Contrado and Shapeways, and a styling/fit session took place with models. Upon reflection, while the design process included the measurement of wrist circumference for the bracelets, the bridge of the hand measurement was not adequately considered. For further production of these jewelry pieces, we would determine average measurements from a wider selection of models to develop some standard size choices or create custom pieces that better account for width at the fullest part of the hand. Custom design could also be aided by the use of a body scan as base geometry for accurate fit (Mamp & Quinney, 2017). Precious metals such as gold or silver are recommended for future production due to weight and overall quality. Select jewelry pieces were embellished by hand with feathers and beads (see Figure 5).



Figure 5. The integration of traditional methods of embellishment such as beading and feather work with 3D printed final prototypes.

For these jewelry pieces, the designers also wanted to showcase how 3DP elements could be integrated with traditional techniques of embellishment. Techniques such as beading, coiling, and feather work have been historically associated with traditional African craft and dress and have been used by designers in many different disciplines to communicate or respond to cultural investigation or influence (Mamp, 1998). The head wraps and jewelry were styled and photographed alone and on four models (see Figure 6).

The models were selected to showcase the beauty that women of color possess. There is significance in people of color seeing someone like themselves on a platform normally dominated by western standards of beauty.





Figure 6. Final digitally printed head wraps and jewelry pieces styled on Resistant & Resilient African American women.

## Conclusions and Recommendations

The purpose of this project was to reflect personally and explore and gain inspiration from African/African American dress and identity from a cultural/historical perspective, ultimately responding with a creative design process using 3DP and DTP. The adornment of the body, including clothing and body modifications, have deep cultural meaning (Sanders, 2011). Our research continues the exploration of how dress, culture, and history can inform and enlighten our understanding and creation of clothing for contemporary society.

Additionally, the use of rapid prototyping in this design research and the consideration of emergent technology will provide future scholars with a potential framework for application. The implementation of 3DP, and DTP can enhance design process efficiency and overall quality but may also encourage entrepreneurial growth and innovation in the fashion industry. The LaBat and Sokolowski three stage design model (although close to twenty years old) stood the test of time and proved to be a valuable framework which easily allowed for the incorporation of newer/emergent twenty first century technology.

In the past decade, many college-level fashion programs have focused on acquiring equipment such as digital textile printers and 3D printers. However, for this process, external companies (more specifically related to DTP) provided more reliable service, greater customization options, and better-quality results at a comparable or lower price. The process is also more streamlined since companies such as Contrado, for example, steam, wash, and finish raw edges of textiles, while Shapeways enacts quality control and also cleans 3D models. We recommend further exploration of services offered via outside companies such as these as more cost-effective options for educational fashion design programs as well as for entrepreneurs as a means to develop and execute small order manufacturing. In addition, further design research could investigate the development of jewelry using body scans as base geometry to establish size ranges or for customization opportunities.

This work fulfilled partial requirements for the completion of a Master of Science in Apparel Product Development and Merchandising Technology. In addition to this publication select pieces of work were exhibited at the International Textile and Apparel Association annual meeting in Las Vegas, Nevada in November of 2019. The first author has since pursued a professional career in product development and continues to creatively explore jewelry making as a means of self-expression related to her identity as an African American woman. This creative practice allows for continued expression and exploration of racial identity as she attempts to navigate her personal and professional life in turbulent times. This documented process may prove useful to others interested in pursuing custom or entrepreneurial jewelry and/or textile design as costs associated to prototype printing are relatively nominal.

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*Michael Mamp, PhD is a professor in the Fashion Merchandising & Design program at Central Michigan University (CMU). His research focuses on the history of dress, and the integration of technology into the design process. At CMU he teaches courses such as: History of Western Dress, Queer Fashion, and 3D Printing & Fashion.*

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## Providing Students a Voice in Online Pedagogy

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### Abstract

*Globally, the rise in higher education online courses and fully online undergraduate and graduate programs is challenging instructors to find innovative, engaging, and thought-provoking course content and activities. Instructors, in all areas of study and locations, are being challenged to develop courses that incorporate students' voices along with the use of critical thinking. Generating a platform that is designed to allow diverse viewpoints, regardless of the discipline, has the potential to enhance inherently impactful learning. A recently developed Nutrition and Obesity course uses a learner-centered methodology that encouraged robust and active discussions and provided students with an ability to demonstrate deeper understanding. This course allowed student involvement through creating "thought questions" that were utilized as a starting prompt for weekly discussion boards. Posts included evidence-based and referenced justification to positions or statements made. Realistic scenarios that allowed application of knowledge were also assigned for each weekly module. The methodology involved in course development and responses of students enrolled in the course are examined in detail.*

**KEYWORDS:** ONLINE EDUCATION, DISCUSSION POSTS, THOUGHT QUESTIONS, STUDENT VOICES, ENGAGEMENT AND INTERACTION.

### Providing Students a Voice in Online Pedagogy

Growth of online higher education is occurring at a fast pace. The Education Department's National Center for Education Statistics (Lederman, 2018) indicates that despite a decrease in postsecondary enrollment, students enrolling in at least one online class increased by 5.7% from 2016 to 2017. Thirty three percent of students enrolled in at least one online class and 15.4% (one in six) of students, in 2017, were enrolled in an online program exclusively. This is up from 14.7% the previous year according to the Education Department's National Center for Education Stats (Lederman, 2018).

Due to the flexibility of online classes, the number of students enrolling in these types of classes versus traditional in person classes will continue to rise, with more than 6.3 million students currently enrolling online (Darby, 2020). Despite the increase in higher education's online offerings, many educators continue to prefer the face-to-face platform to the totally online format. An Educause survey performed in 2017 reported nine percent of those surveyed reporting online preference (Darby, 2020). The ECAR-Educause Center for Analysis and Research collects data from faculty and students on a variety of online and technology topics from over 150 institutions in 10 countries (Brooks et al., 2017). Blended environments, which are a combination of online and traditional face to face learning, were stated as the most popular learning platform. Blended learning has been described as versatile, practical, ease of use, and student centered, with a variety of learning techniques, such as station rotations, lab rotations, project-based, and flipped classrooms, that allow all to flourish (Brooks et al., 2017). Ways to offer more effective online classes have been documented in the literature, however these tips may not lead to improved satisfaction of the instructor or student. One suggestion to improve teacher and student likeability of courses included being present or building student relationships. When faculty are consistently present with regular, thoughtful, daily presence, students tend to feel cared about, with a realization that their questions and concerns are of importance to the instructor (Boettcher & Conrad, 2010). Mentoring, guiding, and challenging of

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content are rated more effective when presence is practiced (Boettcher & Conrad, 2010). However, the authors did warn about the danger of too much presence which has the potential to stunt discussions and could delay learner self-direction.

Some scholars have found that distance or online education may contribute to a stronger workforce (Laraia et al., 2008). Students enrolled in this type of learning may be more self-directed, intrinsically motivated, and organized. They must keep up with assignments and material without the face to face nudging and guidance of instructors.

Cohen et al. (2011) mention several ideas to improve learner satisfaction in online courses. These include prompt exchange of course assignments and materials between instructors and learners and between learner and learner, easy access to campus-based resources and technology support, clear assignment and evaluative tools, and challenging, active, and varying activities and assignments. Likewise, it is important to evaluate the pedagogical and technological expertise of both students and instructor to achieve successful course design and implementation (Kebritchi et al., 2017).

Im and Martin (2015) highlight three sets of dialogues that are instrumental to building an online learning community. They include faculty-to-learner (F-L), learner-to-learner (L-L), and learner-to-resource (L-R). Of importance are the various strategies that can be used to strengthen the learner-to-learner dialogue. These strategies include personal introductory posts, an open forum for students to post and request help, smaller study groups, problem-solving forums or discussion boards, and student teams. These strategies align with Vygotsky's theory and the importance of social context for impactful learning (Picciano, 2017). High impact or impactful learning refer to a meaningful educational experience that require participation and student action, which can contribute to life-long student learning (Kuh, 2008). Vygotsky's principle incorporates the concept of moving students forward through their learning experiences and activities. Such activities include creating, talking, writing, explaining, analyzing, judging, reporting, and inquiring to stimulate a students' growth (Picciano, 2017). This growth can then transition from concept awareness to knowledge acquisition.

Most adult learning for the college and university student is grounded in the work of Knowles (1989). These students have unique motivation and self-concept needs that differ from youth learners. Andragogy, the term popularized by Knowles, is a learner-centered approach. This approach is characterized by an active-learning, student-centered approach as opposed to instructor dependency and draws from constructivism principles. Life experiences, which are very important in learning and should be valued throughout the course, are useful in helping these adult learners solve problems and apply knowledge gained (Knowles, 1998).

The aims of this brief include: an exploration of the techniques and methods used in the development of an online student lead experience and the examination of student's perceptions to this engaging online course.

## Design

Online pedagogy is being used to implement the graduate program at our institution. One of the first courses created for the program was a Nutrition and Obesity course. While controversy abounds in regard to the correct theoretical underpinning of online education, the use of constructivism in this course development aligned with the desired student outcomes (Picciano, 2017). Grounded in a philosophy of learning where individual knowledge is gleaned from environmental interaction, including one's peers, constructivism is considered socially constructed. The main role of the instructor in this type of learning is that of a facilitator while the learner is an active processor and creator of their own level of understanding and comprehension (Picciano, 2017). According to Cohen et al. (2011) students report that learning occurs when they interact with their fellow students.

The first task completed involved determining objectives and specific topics or modules to be covered in the course (Kazaks & Stern, 2013). This particular course was initially developed for summer delivery during a five-week semester, although content was planned so that it could easily be modified and offered over a full fifteen-week semester. According to Harwood et al. (2018) the shorter online courses, such as this five-week timeframe, can be equally as satisfying to students as a full semester online course. The topics chosen for each module, or week, were distinct, logical, and sequential nutrition topics in which current and relevant research and peer reviewed literature is widely available and accessible.



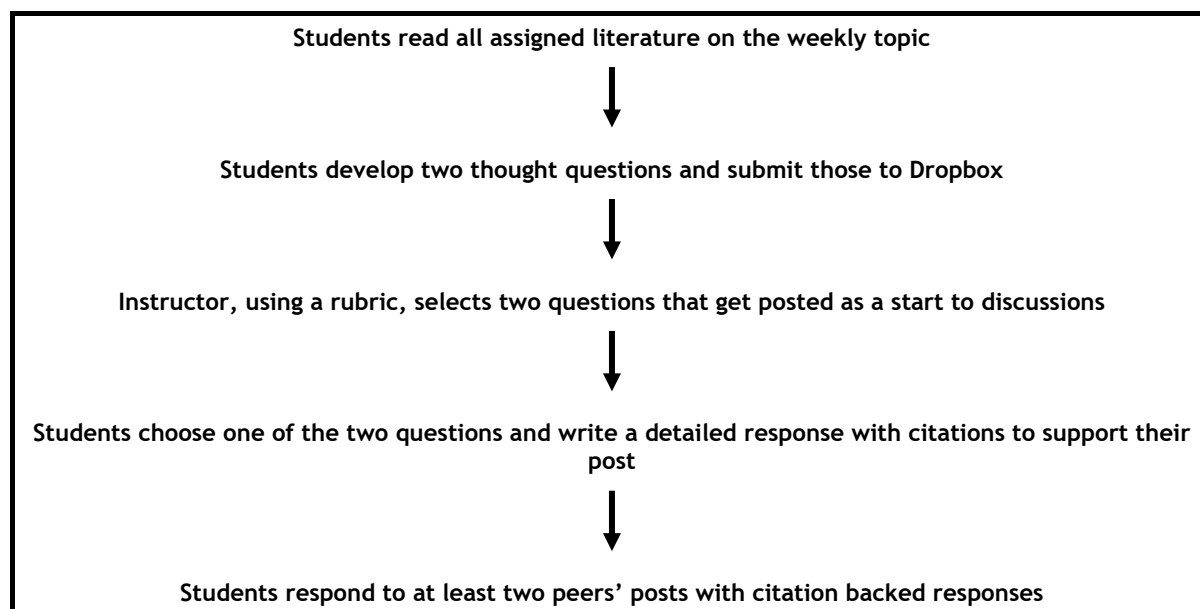
Each module, or weekly section, was consistently designed to improve student understanding and usability, thus making the model one that could easily be transferable to other courses. In this Nutrition and Obesity course, the five areas explored include 1) context of the obesity problem, trends, and statistics, 2) determinants of obesity and etiology, 3) consequences of obesity and weight bias, 4) treatment of obesity, and 5) prevention of the obesity problems. The modules consisted of one or more PowerPoint presentations that summarizes the topic along with a reading list consisting of a minimum of ten peer reviewed articles. Most articles were original research, although systematic reviews, and position papers were included in the reading list as well.

The course was developed to allow the students an ability to apply the knowledge gained from their weekly readings while having autonomy and choice in their learning. After completion of the module readings, each student submitted two “thought questions” to the online drop box. “Thought questions” are questions that each individual student creates to garner more information or opinions about a topic. The students may have a predetermined opinion on the topic and want to understand other’s viewpoints or the students may want to gain a greater understanding of the topic through their question. After the question submission deadline, all questions were reviewed by the instructor using an assessment rubric. Included in the rubric are selection criteria, including the need for open-ended questions, as well as the incorporation of the question’s ability to have divergent or opposing opinions about the topic in question. Rubrics for the evaluation of all assignments were included on the course home page. Detailed expectations for the students’ work were included in the rubric.

Two questions are selected from the entire group’s submissions. This assignment and selection process enabled the instructor to maintain presence with the students and help them to feel more engaged and supported and that their questions and concerns were important to the instructor as suggested by Boettcher & Conrad (2010).

Each week, the two selected questions were shared on the online learning platform with the class. These two questions then became the start of the discussion forum for the week. Each student was instructed to choose one of the two questions which interested them. The weekly discussion forum, centering around the chosen question, was to be thoroughly answered with citations used to backup and justify all responses. Additionally, each student was to respond to at least two other student’s posts, again using evidence and citations to reinforce their reply post.

Figure 1. Thought question diagram



The goal of the discussion postings was to provide a venue for students’ voices to be expressed, allowing for intellectual stimulation and rich discussions with the potential for divergent opinions, optimizing student learning in the learner-to-learner realm (Im & Martin, 2015). Controversy abounds about the impact, satisfaction, and usability of discussion boards. Lieberman (2019) explored

discussion forums through a qualitative faculty interview approach. One innovative evaluative method shared in his work is 3CQ which stands for compliment, comment, connection, and open-ended questions (Lieberman, 2019). Each student is graded on their inclusion of these four components. The thought question approach used in this course included these components in the discussion evaluation with the connection and open-ended questions being especially important factors in this course.

Interaction and participation of every student was accomplished through this asynchronous assignment, likely improving quality and quantity of discussions (Fredericksen, 2015). An advantage of these online discussions is that a longer period of time, usually one to two weeks, are allotted for responses. This expanded time allows for more time to consider classmates views and the time to construct one's own contribution, which has the potential for higher quality responses. In the face-to-face classroom, it is not uncommon for students to not respond or engage in active discussion. It is also common in the traditional classroom that discussions be dominated by a small number of students, whereas in the online response, every student's voice is heard. It is also rare that students in the face-to-face environment support their response with evidence-based literature (Fredericksen, 2015).

An abbreviated snippet from one student's post, reprinted with permission, is an example of how life experiences of older students can impact the "thought question" peer posting assignment in this course offering. This topic generated much discussion about a controversial area of obesity treatment, bariatric surgery. While some students initially disregarded this treatment prior to reading this student's real-world experience, they left with a different perspective and potentially a change in their opinion.

## My Bariatric Journey

Until all pre-surgery requirements are met, no surgery date is given. For some, it may be six months, 12 months, 18 months or longer to get to that point. In my case, it was 18 months because of changing surgeons and programs after the first year of participation.

Doing your own research is crucial. There are several procedures available, each with its unique outcomes, cures, and rates of loss. For someone with no reflux (or GERD), the gastric sleeve is an option. Patients with no co-morbidities may like the idea of the lap band. A patient with reflux is better served with the gastric bypass (also called Roux-en-Y). There are other methods surgeons perform, such as a duodenal switch or inserting a temporary balloon into the stomach to restrict intake.

My surgery, the gastric bypass, was scheduled for Monday, July 17, 2017. I would start the liver shrink diet two weeks before surgery that was required by my surgeon. This is one of the variants of the many surgical plans. Some patients of my surgeon follow the diet one week before, others, like me, two weeks. My weight was around 136 kgs. at the time I scheduled the surgery (sometime in May 2017).

Long-term and lifetime requirements and ramifications:

Weight loss surgery is a tool. It is not a guarantee. That is the number one motto for patients no matter which surgery is chosen. Weight loss surgery is a tool!

Once solid food was introduced in Week 7, life became more normal, the "new normal" for a bariatric patient. Foods had to be introduced slowly. The rule was 85 grams of lean protein first, veggies second, and carbs last, if one still feels like they need more to feel "full." Let me tell you, getting those 85 grams of lean protein down first was hard enough, and for the first few months, few veggies made it into my mouth. Carbs were omitted for the time being. For the first 6 months, solid food intake is limited to 118 ml., or the size of the palm of your hand (if the food is solid like chicken). Sometimes soups or green salads may be more than 118 ml. in quantity. After 12 months, intake may increase to 237 ml.

Lean protein means grilled, boiled, broiled, or baked. Chicken, pork, seafood are the recommended selections. Shrimp, crab legs, and lobster are my main stays. Steak should wait 6 months or more before attempting, and then should be filet mignon at that.

Veggies and fruits may be cooked, steamed, roasted, or raw. Some veggies, like broccoli and cabbage, may cause gas. I can tell you that is true—raw broccoli is digestible now, but cooked broccoli can still be tricky sometimes.

Carbohydrates should be potatoes, peas, beans, etc. Corn and breads can be hard to digest. Breads, pastas, and rice can swell in the pouch and cause extreme discomfort. Believe it. It can be painful, and the need to throw up enough to make one try bulimic tactics.

Bariatric vitamins supplements are for life. They make up for the micronutrients that are not absorbed during digestion. The gastric bypass is a malabsorptive procedure. Why is it malabsorptive? The original stomach has the top section of the stomach made into a pouch that is the size of walnut or small egg (depending on the surgeon's preference and style). That new pouch is then attached to the upper portion of the small intestine where digestion will now take place. The remainder of the original stomach stays because the digestive juices

will continue to empty into the small intestine as before. There is no sensation of physical hunger after the bypass. Any feelings of hunger are usually what is referred to as “head hunger” which is a nice way of saying “habit.” Also, the vitamins may help with hair loss which has been a frequent patient complaint.

Alcohol, sodas, soft drinks, caffeine, sweet and fatty foods should be considered off limits for life. Let me repeat—off limits for life! Why? Alcohol addiction transfer for obese persons is a real threat to health as well as sobriety. Soft drinks can expand the pouch, leave the patient feeling full, and cause a reduction in proper nutrition consumption. Caffeine is not necessary to life but if one must, make it up in more water. Sweet and fatty foods after bypass surgery can lead to dumping syndrome. What is dumping syndrome? It is vomiting and diarrhea that seems endless, may lead to dehydration, makes you wish you could die, can require hospital intervention with IV fluids—you get the picture.

Routine blood work is required every 6 months the first year or two, and then annually thereafter. I prefer to do it every 6 months. At 68, my numbers could get out of balance very quickly, so it is a good way to stay on top of my results.

Failure to drink enough water may lead to dehydration. Eating too much at any given time can stretch the pouch. Eating the wrong foods can lead to weight gain. Just because we eat smaller portions does not mean we should eat more snacks, pizza, or other empty calorie foods. Good nutrition is required. There are risks involved, and I have chosen to do as told to limit or avoid them. With any surgery there is risk of death, injury, bleeding, etc. Being informed is a key element to success.

As predicted by Knowles (1998), outstanding discussions took place as a result of this post, with many student questions, differing or controversial opinions about the need for this procedure, in addition to expressions of appreciation for an honest and transparent explanation of a difficult experience.

**Table 1. Modules and sample thought questions**

Module	Sample Thought Question
Context of the obesity problem trends and stats	Were notable and widespread United States public health programs and initiatives (aimed at lowering rates of obesity) during the examined time frames in recent studies responsible for instances where no significant changes in obesity prevalence was observed; and would these instances speak to the efficacy of national public health programs, or was it just an anomaly that obesity prevalence would appear to halt or level-off during certain times?
Determinants of obesity and etiology	Although technology and scientific knowledge has developed incredibly over the past several decades, so has obesity. We know that with obesity there are also health risks and problems such as type 2 diabetes, hypertension, cardiovascular disease, and even some cancers. Obesity can also drastically decrease an individual's overall quality of life, yet despite knowing all of this the obesity rates are at their highest and still climbing. Why? Do you think that it is closely related to the overall decrease in activity over the past few decades and the increase in desk-sitting, tv watching, or video game playing, or do you think it is more related to the huge availability and inexpensive costs of unhealthy foods in today's world?
Consequences of Obesity	According to Kazaks and Stern, a concern of health insurance companies is whether the investment in obesity treatment and prevention will produce adequate increase in health to decrease healthcare costs. An Annals of Ibadan Postgraduate Medicine article concludes prevention of obesity is thus cost effective and should begin early by encouraging a lifestyle of healthy patterns of exercise and diet. What are the three most important factors insurance companies should consider in order to conclusively invest in obesity prevention?
Treatment of Obesity	Kazak's and Stern discuss many different treatment options for obese adults. In an attempt to lose weight, obese adults can opt for pharmaceutical drugs, surgery, diet interventions and behavior treatment. Yet, to select the pharmaceutical or surgical option, an individual must be 18 years of age. In addition, it may be difficult for someone under 18 years old to seek professional help for behavioral treatment or a diet intervention without parental funding and support. What do you believe is the best treatment choice for obese children? Do you believe they should be allowed to receive pharmaceutical or surgical treatment? Explain your reasoning.
Prevention of the obesity problem	Boyd Swinburn suggests that policies, laws, and regulations might play a role in preventing obesity. Eisenberg et al. make a similar argument that “there is increasing awareness of the role that governments, corporations, and educators can play in preventing and reducing obesity,” initiatives that can complement what has traditionally been considered a physician issue to treat. Drew McCormick posits that “winning the battle of the bulge” will be difficult due to the connection of food and obesity and the emotionally charged nature of weight issues in the US. Given the costs associated with, and the epidemic proportion of US obesity, do you believe that government intervention in conjunction with employers, educational institutions, and other players should mandate changes in food consumption and choice as well as physical activity to reduce and control the rise in obesity, its related diseases, and associated costs? Support your position with evidence -based resources.

In addition to the weekly posting, two to three “real world” scenarios, not related to the thought questions or posts, were assigned by the instructor for each weekly module. Students were to select

the scenario that most aligned with their interest area and were instructed to write a three to four-page explanation of their rationale for their position taken on the said scenario.

Another component of the course was the inclusion of an embedded librarian. This provided students with guidance and resources that the librarian could supply during the duration of the course. For example, if a student was unable to locate a journal article, assistance was provided.

Updated reading lists to include current literature and new research findings were utilized to keep the class interesting and relevant. As students located articles that addressed the weekly topic, the instructor reviewed their literature/articles to see if materials should be added to the weekly reading list. This course will be continually modified and improved pending feedback and input from the students enrolled in the course.

Following the first offering of this course, the instructor was asked by another professor to dual list the course, allowing doctoral students to receive credit for enrolling in the course, since initially the course was listed at the 6000 (Master's) level. The dual listing proposal includes an addition of student assistance in selection of the weekly thought questions. The doctoral students will review the submitted questions and using the assessment rubric decide on which questions should be used as discussion starters along with instructor input. This provides a participatory role for the higher-level students in the design of the learning content. Doctoral students will also be required to complete both discussion questions each week, and will complete one additional scenario during the course, adding to the rigor, breadth and depth of their course content experience.

## Findings

The course was offered for the first time in the summer of 2019. A one-group posttest-only design was used to evaluate satisfaction and student perceived effectiveness of the course. The posttest Likert scale ranged from very satisfied to very dissatisfied. This posttest is collected for each course offered at the university. It is shared digitally and all students are asked to voluntarily participate in the course evaluation.

The first offering of this course had a small enrollment of seven students. Mid-course and post-course evaluation showed 80% of the students indicated they were very satisfied when responding to the question about enjoying the course, with 20% satisfied. The same results were shown for the statement regarding the assignments being worthwhile. At mid-term, 100% of the students reported that they would recommend this class to a friend.

Narrative comments were also collected at mid-term and at the end of the course. The following comments were included in the evaluations:

Overall, I feel that the class has been very informational. I have enjoyed the articles assigned and the information from discussion with other classmates. It has tapped into opening up more critical thinking skills for me that I really value.

The format of this class has been exceptional! I am enjoying the reading, the research articles, and the PowerPoints. I think the class format for the discussion boards, thought question submissions, and scenarios are well thought out and offer the appropriate amount of challenge for students. I think the format allows for class engagement and promotes critical and independent thinking. I would definitely recommend this class to others.

This class is very interesting. The topics flow well and are appropriate. I enjoy reading the discussion posts to see the different perspectives.

I am really enjoying the information in this class thus far. In addition, I think all the assignments involve critical thinking which has helped me a lot as a graduate student. For instance, reading articles and writing papers has helped me develop a lot as a writer, which is very important trait for graduate students. Overall, I think this is a great class!

The online material was presented in a logical manner. All course materials were objective and free of bias. Written group discussions were an excellent way to share ideas and opinions without having conflict.

The Nutrition and Obesity course has been exceptional! The format of the class has kept me engaged and allowed me to learn from others. I particularly enjoyed the course readings and the initial post and peer response activities.

The course required critical thinking and writing skills.

## Limitations

Limitations of this brief include the small sample size of the first offering of this course. With a small sample size, limited data was available for analysis. Additionally, the instructor, despite the use of an assessment rubric, made an individual decision on which thought questions were selected each week. A question that may have allowed for rich discussion may have been left out of the course. The involvement of doctoral students assisting in the selection will provide more input on question selection. The topic of this course content is vast. Narrowing the literature and research for the weekly readings to a manageable amount and the discussion topics to two questions can be challenging and limiting. Faculty often report that online classes require more time than a face to face course (Cohan et al., 2011). This could be a limitation to the delivery of this course. If the number of enrolled students is large, instructor time may be a limiting factor.

## Implications

Given the tremendous growth and current demand in higher education for online learning, discovering more information about effectiveness and satisfaction with this type of course delivery is warranted. Additionally, this can help guide future delivery efforts, regardless of discipline or geographical location, and bolster impactful course content and student experiences.

The format of this newly developed course was well received by students and staff. Expanding this format to other disciplines and course content, followed by evaluation of satisfaction and assessment of knowledge gained is needed research in online education. Generalizability of this format is unknown without further course offerings and data collection. The rich discussion forums allowed for instructor interest and enjoyment. As additional courses are redesigned and developed for the Master of Professional Studies- Leadership in Nutrition program, this format or modifications of the format can be used to provide consistency among classes, increasing students' ease in class navigation. With interesting discussion boards, instructor engagement and satisfaction have the potential to be enhanced. Keeping online courses interesting, engaging, and innovative is a goal of instructors and students. Utilizing the concept of "thought questions" and student voice has been shown to be one effective methodology in the online toolbox.

## Author biography

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## Research to Practice Enhances Ecological Theory and Family Capacity-Building in Home Economics Program Practices

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### Abstract

*Globally Home Economics and Family and Consumer Sciences foundation is the ecological theory that embraces family capacity-building practices. However, research documents that gaps exist between knowledge of these concepts and actual practice with preservice students. Professionals are challenged to incorporate knowledge from position statements, body of knowledge, theory and current literature to promote research to practice. To address these gaps, higher education programs should prepare preservice professionals with active/contextual learning methodologies that incorporate both the International Federation of Home Economics position statement and the Family and Consumer Sciences body of knowledge, in course content. Active/contextual learning strategies with abstracts concepts such as theory may enhance preservice professional's working knowledge and lead to expanding family capacity-building. As an example, a case study is presented applying a thorough understanding of the ecological theory and family capacity-building. With this knowledge home economics professionals gain an understanding the uniqueness of the family, as well as help families' view problems and solutions within the contextual layers of the family's environment.*

**KEYWORDS:** PROGRAM PREPARATION PRACTICES, ECOLOGICAL THEORY, FAMILY CAPACITY-BUILDING, RESEARCH TO PRACTICE, BODY OF KNOWLEDGE

### Professional Organizations

The International Federation of Home Economics mission (2008) encourages resource management for individuals and families to attain optimal sustainable living conditions. Through this organization professional help families achieve empowerment (Hardin, Hall, & Pucciarelli, 2018), by supporting gender equity and education of all individuals within the community, by utilizing an ecological perspective with education and research and emphasizing the global interdependence, families become empowered. See Figure 1 for the IFHE model.

The model depicts how ecological perspective is embraced as home economic professional utilize family-capacity building of respectful reciprocal interactions as families navigate the impact of the global environment on the household's micro and macro environments to achieve quality of life. Through education families are taught to "encourage self-actualization of individuals, and emphasizing the impact of family on social and economic development." (International Federation of Home Economics, 2008).

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Figure 1. International Federation of Home Economics Model (International Federation of Home Economics, n.d.).

The American Association of Family and Consumer Sciences, incorporates the core body of knowledge (BOK) as the framework to use when implementing the mission. See Figure 2 for FCS BOK model. The core concepts include wellness, community vitality, resource management, and family strengths, all essential concepts to our mission (Nickols et al., 2009) and vital to the knowledge base of the profession (Poirier et al., 2017).



Figure 2. FCS Body of Knowledge (Nickols et al., 2009).

The phrase, body of knowledge, is defined as representation of a “complete set of agreed-to concepts, terms, principles and activities that make up a professional domain, as defined and advocated by the relevant professional association” (p. 107). This framework helps family and consumer sciences professionals identify strengths and resources that can be used to address the family’s barriers due to policies and procedures which may limit the family in accessing resources and services. Addressing barriers is vital as these barriers may impede family capacity-building since opportunities for active participation may be affected.

## Purpose

The purpose of this paper is to address the challenge by Nickols et al. (2009) to exam how the Family and Consumer Sciences body of knowledge can be applied to existing literature and theoretical concepts for research and practice; support the position of research to practice within the International Federation of Home Economics position statement (Renwick, 2015); support research by Turkki & Vincent, (2008) to provide opportunities for reflection using the ecological theory

This paper includes an example of how family capacity-building and the ecological theory is applied to a case study in early intervention (a role that can be filled by home economics or FCS professionals) to show the transdisciplinary relationship of our academic helping discipline (McGregor, 2011). The case study is an example of an active/ contextual learning strategy (Bond, 2004) that incorporates research to practice. Active/contextual learning activities provide opportunities for student to become effective thinkers by translating abstract concepts as they work to solve real world problems (Bond, 2004). Incorporating these strategies help prepare preservice students in home economics and family and consumer sciences to use helping practices to improve quality of life for individuals and families. When incorporating theoretical principles and other abstract concepts into higher education course content, home economics and family and consumer sciences professionals may facilitate a conceptual change in preservice students. This occurs when information presented to students builds



upon existing ideas and incorporates new information which produces a new understanding (McDevitt et al., 2010).

## Ecological Theory

The ecological theory is the foundation of both home economic and family and consumer sciences profession (McGregor, 2020 & Renwick, 2015). Families are not to be viewed in isolation. “According to the ecological theory (Bronfenbrenner, 1979), each individual functions in a particular microsystem that is linked by a mesosystem and embedded in the exosystem which is influenced by the macrosystem and chronosystem” (Swafford et al, 2015, p.12). In the ecological theory, these environmental settings are viewed as a series of layers that range from the immediate setting, like home and family, to the more remote setting of culture and time (Bronfenbrenner, 1979). See Figure 3 for Bronfenbrenner’s Ecological Theory Model. The layers build upon one another and are integrated with reciprocal interactions, which means a change or conflict in one layer, will impact others. Furthermore, each layer has a set of norms, rules, and routines that impact the individual and his/her interaction with others (Sontang, 1996).

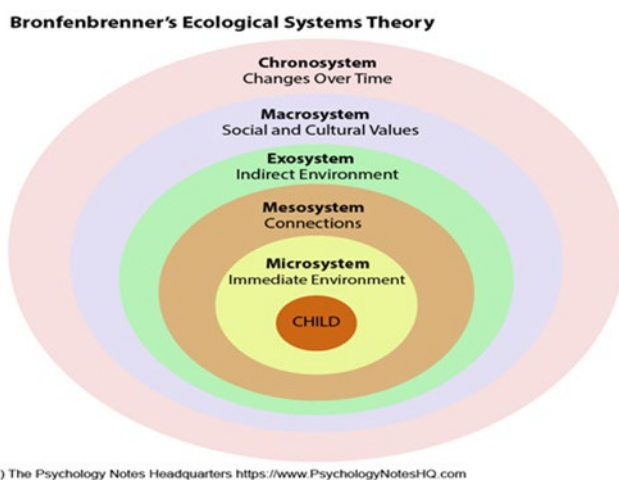


Figure 3. Ecological Theory Model (The Psychological Notes Headquarters).

Knowledge of ecological theory augments the home economics professional’s understanding of the uniqueness of each family, as problems and solutions will be viewed from all contextual layers in the family’s environment. Professionals applying the ecological theory to practice recognize that respectful and reciprocal relationships are vital to a family’s support and self-efficacy.

## Family-Capacity Building

Bruder (2000) wished for professionals to provide “services and supports that are respectful, evidence-based, and appropriate for each family’s unique situation” (p. 112). Therefore, it is imperative for home economics professionals to have an awareness of the entire support system including (resources and strengths) of the family including parents, siblings, grandparents, extended family, service provider policies, requirements, procedures, laws and culture. Home economics professionals’ understanding of the family’s comprehensive support system enhances their probability of forming collaborative partnerships (a helpgiving practice) that include respectful interaction and empathy while fostering participation in decision making, which will lead to improved self-esteem and confidence for families when facing new or challenging situations, therefore impacting family capacity-building in a positive manner.

Variables such as family structure, socioeconomic status, geographic location, race, ethnicity and other cultural components need to be acknowledged in helpgiving practice. These aspects of diversity become crucial points to consider when promoting family capacity-building. Fujiura and Yamaki (2000), Harry, (2008), Parish et al., (2010), and Parish et al., (2008) found that many children with disabilities live in families with low socioeconomic levels, live in single parent families, rely on social programs, and face additional stressors other than disability, such as racial and ethnic barriers. Moreover, Nickols et al., (2009) recognized the diversity of family roles in society. These variables may be in contrast to the life experiences of many home economics professionals serving in helpgiving

capacity who often do not worry day to day for basic needs. With such a contrast, how do home economics professionals relate to and have empathy for the families they serve? How can institutions of higher education ensure that preservice home economics professionals are well prepared?

### **Integrating International Federation of Home Economics Position Statement and Family and Consumer Sciences Body of Knowledge**

According to research by McGregor (2011) “The academic discipline of home economics has created (and continues to create) its own disciplinary knowledge base, to serve both a generalist and a specialist approach”, p. 106. The International Federation of Home Economics position statement for the 21st century incorporates the ecological model as it expands home economics from the home setting to recognize the impact of community, national, and global activities on the family as they strive for improved quality of life ( IFHE position statement, 2008). This statement also applies to family and consumer sciences as it was once called home economic (McGregor, 2020).

When professionals integrate the family and consumer sciences body of knowledge and the IFHE position statement, they incorporate personal qualities of respect and cooperation, as families are treated with dignity and sensitivity to the diversity of family structure and family functioning while a variety of coping styles are recognized. In many professions, including home economics, these supportive actions have a far-reaching impact on the quality of life for families and are considered integral best practices when collaborating with families (Dunst et al., 2002; Channon et al., 2016; Dunst, 2014; Dunst et al., 2014; Friedman et al., 2015; Henderson et al., 2016; Mathiesen et al., 2012; McCabe, 2008; McWilliam, 2010; & Shilling et al., 2013; Zivani et al., 2011). Furthermore, forming a collaborative partnership with the family provides opportunities for home economics professionals to strengthen the family’s existing abilities (strengths) and empower family decision making, a helpgiving practice, which may enhance the family’s development of new skills (Dunst & Trivette, 1996; IFHE, 2008; & Nickols et al., 2009). Research documents the above stated actions as relational and participatory skills (Dunst & Trivette, 1996). Professionals must utilize both relational and participatory skills for services to be considered family capacity-building practices (Corr et al., 2016; Dunst et al., 2007; Dunst & Trivette, 2009). Yet, research has shown that many service providers are better at relational skills than participatory skills (Corr et al., 2016; Dunst & Trivette, 1996). Furthermore, since many professionals feel responsible for the well-being of the child and family they serve (Corr et.al., 2016), does this impact the family’s ability to fully participate?

### **Gap in Research to Practice**

Research by Corr et al. (2016) indicated that reviews of accreditation in early childhood and early intervention programs in a school setting focus on child outcomes which included lesson plans, instructional strategies, and classroom management strategies, and often lack focus on family goals and needs which results in lack of application of the ecological theory and family capacity-building. Furthermore, research documents that family diversity content is covered mostly by assigned readings and lecture (Corr et al., 2016), which can result in the inability of professionals to relate research to practice (Bruder, 2000; Corr et al., 2016). Similarly, Sewell (2012) researched undergraduate programs to determine how family involvement/helpgiving practices was included in the course work. Eighty-one percent of those surveyed stated that only one class was offered in family studies. Results of the study indicated that one course in family studies was not sufficient to adequately prepare professionals to work reciprocally with families. Infusing family-capacity building throughout course work and in practical experience in the program of study was best. Furthermore, Renwick (2015) and Turkki and Vincent (2008) state the importance of reflection on our past as well as research to practice in the field of home economics as a demonstration of knowledge.

Similarly, students in higher education often perceive theories and conceptual frameworks as difficult abstract concepts to learn (Bond, 2004). However, research by Swafford et al. (2015) suggest that preparation programs: (a) incorporate case studies or vignettes in cooperative learning activities to identify how the environmental constructs impact family functioning; (b) place students in the home setting so they can grasp the importance of informal supports on the family and the importance of intervention in the natural environment; (c) use case studies or vignettes to compare and contrast family strengths and use those strengths to incorporate family capacity-building practices; (d) invite families to participate in a panel or interviews to share acceptable and helpful practices.

These suggestions provide opportunities for preservice or practicing home economics professionals to apply research to practice. Research by Renwick, (2015); Turkki & Vincent, (2008) support opportunities to reflect and apply research to practice is indicative of content understanding which demonstrates professional growth. According to Dunst, (2014) professionals create family capacity-building when providing opportunities and practices for families to develop new skills while enhancing existing skills, strengths, and self-efficacy. This can be applied to preservice home economics students as home economics academics engage them in contextual active learning strategies using the ecological theory to help individuals solve complex problems.

In the United States, some early childhood education and early intervention are components of Family and Consumer Sciences programs of study. However, if courses from the home economics profession are not included in the program of study (globally and in the United States), early childhood education or early intervention programs should collaborate with the academic discipline of home economics or family and consumer sciences to infuse content of the ecological model, family capacity building practices, as well as the International Federation of Home Economics position statement, and the Family and Consumer Sciences body of knowledge throughout the course work.

### Application and Training Example

The following case study illustrates how the ecological theory, International Federation of Home Economics position statement, and Family and Consumer Sciences body of knowledge, and support of family capacity-building through early childhood early intervention services. This vignette is an example of one activity that can be used as a research to practice contextual active learning case study for use as an individual application learning activity or in a collaborative team simulation with each group sharing reflections. In many countries' and universities, early childhood education and early intervention are components of Home Economics and Family and Consumer Sciences programs of study. Due to the wide range of discipline that is part of Home Economic and Family and Consumer Sciences (Hardin, et al., 2018; McGregor, 2011. McGregor, 2008) other case study topics such as facing social injustice from racial or gender discrimination, improving nutrition, addressing food insecurity, consumer economics, interpersonal violence, etc. could be used to demonstrate research to practice. The following is an example of one of many topics that are appropriate for an active learning activity.

#### Box 1 Learning activity

**Directions:** Having a child with a disability impacts and is affected by ecological contextual influences of the family. Identify how the components of the ecological theory are presented in the vignette below. Analyze and describe how the professional incorporates aspects of the International Federation of Home Economics position statement and Family and Consumer Sciences body of knowledge to promote family capacity-building.

Destiny is 15 months old and lives in a rural area with her Mom and Dad in a mobile home on the property of her grandparents. She has an older male sibling and Mom is expecting another baby. Destiny has recently been diagnosed with cerebral palsy by a pediatric neurologist. The annual Individual Family Service Plan (IFSP) is underway and includes a review of evaluations and assessments, reestablishing the family's resources, priorities and concerns. The team assembled in the home includes the Mom, Destiny, the service coordinator (a home economics professional), the early childhood developmental specialist (a home economics graduate) who completed the reassessment and updated her skill levels and recent evaluations by a pediatric physical therapist and a pediatric occupational therapist.

The recommendations of the developmental specialist are to continue home visitation from an early childhood developmental teacher once a week to address development in each area of delay. The recommendation of the physical therapist and the occupational therapist is individual therapy one time per week. The service coordinator is eager to offer home based physical therapy (PT) and occupational therapy (OT) to Mom so she doesn't have to drive 20 minutes to town for these services at the therapy center. Homebased services constitute the natural environment for Destiny and the team has dedicated considerable effort to ensure that Destiny's IFSP reflects this important emphasis as outlined in the Individual with Disabilities law governing early childhood early intervention services.

The service coordinator is surprised when Mom says that she likes getting out of the house to take Destiny to therapy. She has been getting feeding therapy for about 6 months at the therapy center. Mom said that at the therapy center she is around other moms who have babies with "problems" and that makes her feel better and less like Destiny is the only one. Mom says that when professionals come to her house she feels like she has to clean up the house and get dressed up herself.

For a moment the service coordinator is tempted to discuss the benefits of home-based services in the natural environment in an attempt to convince Mom this is the best service delivery model for Destiny. Services in the natural environment promote activities and learning based on the family's actual resources available in the home and are more likely to include siblings and grandparents. Instead the seasoned service

coordinator says "I can understand that." She notes that Mom said she goes to the grocery store, drug store, etc. while she is in town, so she gets a lot done when she takes Destiny to therapy. She also notes that Mom feels like she has a support group at the therapy center.

The IFSP goals include PT one time a week and OT one time a week at the therapy center in town. Mom will be reimbursed for mileage. An action step is written for the developmental teacher to meet Mom and Destiny once a month at the therapy center instead of home to make sure that everyday activities at home enhance Destiny's development and are consistent with therapy goals, including the need for home equipment or practical modifications. Also, Mom is encouraged to have grandparents attend a therapy session if possible.

The meeting continues with a focus on the family as more goals and action steps are written. As the meeting concludes, mom shares that she may want to change to a homebased PT and OT therapy program when she has the new baby, as getting out will be more difficult due to the new baby and the weather. She is assured the IFSP can be modified as needed to meet both the needs of Destiny and the family.

The role of service coordinator as depicted in this vignette is quite complex. It reflects the necessity for that role to be an interwoven mix of many disciplines of study, including but not restricted to early childhood development, early childhood special education, social work, nursing, human ecology and home economics. As depicted in the vignette, the role of the service coordinator supports the IFHE position statement that Home Economics content is comprised of many disciplines (IFHE, 2008; McGregor, 2011). This professional (from home economics or family and consumer sciences) demonstrates the ability to competently reflect on the ecological theory and apply these practices to an everyday situation faced by family. Furthermore, this vignette demonstrates a strong foundation throughout a program of study that include both the understanding of theory and concepts behind family capacity building but also the provision of experiences in recognizing how it is applied in various roles. The unique needs of the child and family are determined and met through collaboration and the development of partnerships in which the family's concerns are heard by home economics professionals who offer opportunities for families to gain new capabilities or skills. These experiences can be provided by direct hands on practicum as well as the study of vignettes and anecdotes throughout the course content provided by practicing home economics professionals in the field.

### Application of Research to Practice

Referring to the vignette, we see the service coordinator, a home economics professional, respected Destiny's mom's request to have therapy at the therapy center. Mom initiated the discussion and shared her preferences, which organically resulted in her active involvement in the decision-making process. Furthermore, as Destiny's mom shared in the vignette, family to family support is important to her. The ability to share her lived experience provided her comfort when sharing her challenges with others who have faced similar situations. The respect she received and her ability to have a choice likely enhanced the mother's self-esteem and increased her capacity-building skills when making future decisions for her family. As noted in research, this family to family bond of informal support, may have long term, constant influence whereas professionals may move in and out of the families' lives (Bronfenbrenner, 1979).

#### Microsystem

The first layer, the microsystem, includes the immediate setting of the family. Research indicates that selected demographic variables (components of the microsystem) impact early intervention services, self-efficacy, and family capacity-building (Raspa et al., 2010). As part of the microsystem, family and friends are typically closest physically, emotionally, and socially and usually have the most influential and impactful relationships on the family. This provides an understanding that individuals in the microsystem are likely to carry more influence on the family than home economics professionals operating from the mesosystem. This indicates an emphasis on immediate family support, extended family support, and parent to parent support (informal supports) should be considered.

#### Mesosystem

The mesosystem includes the linkage between the various components of the microsystem. Formal supports are an important ecological mesosystem component influencing families, because home economics professionals offering services are influential in the lives of the children and families they

support. This requires an investment of time to build genuine relationships and trusting partnerships that may improve family self-efficacy. However, overlaps between the contextual settings occur frequently (McWilliams & Scott, 2001). Home economic professionals may be included in the microsystem as well as in the support or linkage of access to services, which is situated in the mesosystem. This depends upon the relationship between the service coordinator and service providers. Research by Lee (2015) identified that service professionals should be cognizant that the “lived voice of the family” be acknowledged and incorporated in service delivery versus focusing on the professional’s voice. (p. 8). Development of self-esteem and family capacity-building is enhanced and optimal with a strong network of supportive links (not controlling) between the microsystem.

### **Exosystem**

The exosystem involves components that do not directly, but rather indirectly, influence the individual. This includes insurance restrictions, policies of social service agencies, school board and/or child care policies. The policies of the service provider’s program are a part of the exosystem. These policies indirectly impact the services received by the child and family. From the vignette we can identify program policies that provide mileage, equipment to use in the home, modifications of the home, options that allow extended family to participate in the therapy, an option of therapy at the center or at home, and the opportunity to change the IFSP after the birth of the mother’s child. Home economics professionals’ knowledge of policies and program requirements is essential in providing unique services for each family. Sharing that knowledge of policies and procedures helps families make informed decisions for accessing needed services.

Challenges to parent satisfaction with early intervention services include therapy frequency, staff-turnover, (components of the exosystem) family structure, severity of child’s disability, and service coordination (components of the microsystem) (Ziviani et al., 2011). These barriers can inhibit family collaboration when parents believe their child is not receiving ideal care from staff they are unfamiliar with while also bearing the burden of care coordination. Service coordinators have little control over staff turnover, family structure or challenges of child’s disability. However, home economics professionals should be aware of the barriers and their context within the ecological environment in order to proactively prevent the negative impact on family-centered collaboration.

### **Macrosystem**

Culture and values are the components of the macrosystem. Culture and values may range from society’s values regarding children with disabilities, or ideologies of socio-economic levels such as individual’s living in poverty and political ideologies, to societal expectations of gender, family roles and expectations. Destiny’s mother’s preference for taking Destiny to intervention services outside of the home reflect her culture of being a stay at home mother and her values of socialization and community involvement. A stay at home mother raising two children may feel isolated being at home full-time, and this isolation may be compounded when service providers come to the house each week. This mother communicated her desire to be mobile and carry out errands that meet the family’s needs before the baby is due. Respecting this mother’s choice to remain engaged with the community likely assisted her in avoiding stress from isolation prior to the baby’s arrival. From an ecological perspective, avoidance of additional stress on the mother minimizes stress the children feel, which further highlights the importance of understanding the ecological theory.

### **Chronosystem**

The last setting is the chronosystem. This includes changes over time such as the growth and development of an individual, historical occurrences and epic events. Many families may consider the birth of a child with a disability a pivotal event, a component of the chronosystem, since this event can forever change family interaction and family functioning. Due to Destiny’s disability, the likelihood of making accommodations and modifications in the home and future educational programs will probably occur, as the family plans educational services for Destiny in least restrictive environments. Due to this probability, it is essential that Destiny’s mom feel confident as she advocates for the needed services of her child and family in order to enhance her self-efficacy and build family capacity skills.

## Conclusion

This article addresses the challenge of Nickols et al. (2009) to examine how the Family and Consumer Sciences body of knowledge can be applied to existing literature and theoretical concepts as well as support research to practice is needed to help preservice professionals (undergraduate students) grasp abstract concepts of theory and the International Federation of Home Economics position statement. Home Economics “consistently strives to help societies develop healthy, productive and responsible citizen” (Harden, et al, 2018, p 18). This statement is illustrated by the case study that is an example of using contextual active engagement in the concepts of the International Federation of Home Economics position statement and the Family and Consumer Sciences body of knowledge, supporting Bond’s work (2004). By providing opportunities to apply research to practice preservice professionals’ knowledge is strengthened as they “engage in practice in ways that acknowledge not only what is done but why and for what purpose” (Renwick, 2015, p 30).

This article supports research by Sewell (2012) that lack of preparation impacts professional’s ability to form partnerships with families, as well as research by Hardin, et al. (2018); Redwick, (2015) and Swafford et al. (2015), that document the rationale for research to practice as well as research by Turkki and Vincent (2008) that supports opportunities to utilize the ecological theory to show professional knowledge and growth.

In the caring hands of home economics professionals, this rationale implemented in practice enhances the families’ ability to activate self-efficacy and family capacity-building skills to face challenges in ways that professional intervention alone may not afford. This development of self-efficacy and family capacity-building skills (part of Family and Consumer Sciences and International Federation of Home Economics) carries over into multiple settings (Sewell, 2012), as families activate self-efficacy and capacity-building skills to face challenges in caring for their children in the future.

Globally home economics professional preparation programs in higher education should use reflection as well as research to practice to synthesize knowledge to enhance the preservice student’s ability to implement relational and participatory skills. In preservice preparation programs research to practice enhances the ability to assess and support how individuals within the family react and interact within their microsystem, the support system that usually remains with the family long term. Furthermore, knowledge of these concepts may produce a conceptual change that will help preservice home economics professionals identify family strengths and develop empathy for the family within their unique situation. Combine this with the home economics understanding of how laws, program policies, societal values, available services, extended family, culture, friends as well as the professional’s helping practices influence the individual’s ability to make decisions that impact quality of life. This synthesis is needed for home economics professionals to support family capacity-building practices that improve quality of life for individuals and families as they seek to solve complex problems.

## Author biographies

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*Filomena Palmer is the retired director of the Upper Cumberland district office of Tennessee’s Early Intervention system. She has a BS in Sociology from University of Tennessee Chattanooga and a MA in special education from Tennessee Technological University. She was a special education teacher in Putnam County Schools and taught adjunct courses in early intervention at Tennessee Technological University. Prior to retirement Filomena was a multi specialty clinic coordinator at Vanderbilt University Hospital who was responsible for the coordinated delivery of tailored medical diagnosis and treatment for children with complex medical needs and their families. She is a life long advocate for people with disabilities and their families. She has a special interest in the birth to three population in rural areas where resources are scarce and challenges great.*

Cara Sisk, Ph.D., CCLS has clinical experience as a Certified Child Life Specialist working with children and families in pediatric healthcare. Her work as a psychosocial practitioner was critical in her professional development and foundational to her academic interests. As the Child Life Program Director at Tennessee Technological University, Cara enjoys her role in higher education preparing future child life specialists. She is dedicated to doing research to positively impact the health care of children. Her dissertation research focused on the healthcare experiences of children with special health care needs and disabilities. This research integrated her interests of children in health care with therapeutic tools she used in her practice as a child life specialist.

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