



# Developing a Food and Nutrition Curriculum: An Ethnographic Study of Secondary Education Teachers

Denise Buttigieg Fiteni & Mike Mimirinis

To cite this article: Denise Buttigieg Fiteni & Mike Mimirinis (04 Feb 2025): Developing a Food and Nutrition Curriculum: An Ethnographic Study of Secondary Education Teachers, American Journal of Health Education, DOI: [10.1080/19325037.2025.2457052](https://doi.org/10.1080/19325037.2025.2457052)

To link to this article: <https://doi.org/10.1080/19325037.2025.2457052>



© 2025 The Author(s). Published with license by Taylor & Francis Group, LLC.



Published online: 04 Feb 2025.



Submit your article to this journal [↗](#)



Article views: 2339



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 1 View citing articles [↗](#)

# Developing a Food and Nutrition Curriculum: An Ethnographic Study of Secondary Education Teachers

Denise Buttigieg Fiteni <sup>a</sup> and Mike Mimirinis <sup>b</sup>

<sup>a</sup>University of West London; <sup>b</sup>University of Liverpool

## ABSTRACT

**Background:** High rates of obesity, diabetes, and malnutrition in United Arab Emirates (UAE) adolescents highlight the need for culturally tailored School Food and Nutrition Education (SFNE) programs to improve nutritional knowledge and promote healthy lifestyles.

**Purpose:** This study examined the challenges teachers face when helping students with non-examination assessments, and the systemic and individual factors that affect their preparedness to the Abu Dhabi SFNE curriculum.

**Methods:** An ethnographic study consisted of interviews with and observations of 29 teachers, complemented by document reviews.

**Results:** Limited time, resources, diverse student learning needs, minimal parental involvement, and socioeconomic disparities are among the challenges teachers face in implementing SFNE.

**Discussion:** We propose strategies for curriculum integration, professional development, and resource allocation.

**Translation to Health Education Practice:** Integrating elements of diverse cuisines and dietary practices from various cultures represented in the UAE will enrich the SFNE curriculum to promote cultural awareness among students.

## ARTICLE HISTORY

Received 4 October 2024

Accepted 17 January 2025

## Background

In the United Arab Emirates (UAE), nearly seven out of ten adults (67.9%) are obese or overweight (World Obesity, 2024). Only 34% of adolescents aged 9–13 have healthy eating behaviors, primarily due to poor nutritional knowledge (Al-Yateem & Rossiter, 2017). Across all age groups, females and UAE nationals are more susceptible to obesity than males and foreign residents (Mamdouh et al., 2023). Further evidence shows that there is a significant correlation between obesity and age, sex, nationality, occupation, and hypertension, indicating a high association between sociodemographic and behavioral risk factors and obesity/overweight in the UAE (Mamdouh et al., 2023). Gulf Cooperation Council countries have some of the highest obesity rates in the world, and the UAE is ranked fourth in the region after Kuwait, Saudi Arabia, and Qatar (Aljulifi, 2021). Type 2 diabetes also exhibits similar evidence. While the prevalence of diabetes globally is 9.3%, the prevalence of diabetes mellitus in the UAE is 16.3%, with UAE nationals being more exposed at 25.1% (Jairoun et al., 2024). The high rates of diabetes

also signal poor dietary practices, lack of sufficient physical activity, and obesity, among other issues.

Studies suggest that a culturally specific SFNE intervention could be a long-term way to help adolescents learn about nutrition and improve their dietary habits (Al-Yateem & Rossiter, 2017; Fiteni, 2023; Mamdouh et al., 2023). Environmental factors, physical inactivity and unhealthy diets contribute to nutrition-related health challenges. Adolescents are particularly vulnerable, yet the current curriculum does not adequately equip them with the life skills and knowledge needed to make healthy food choices. Consequently, there is a need to reintroduce a comprehensive SFNE program within secondary schools (the equivalent of US Grades 6 to 12). It is within this context that research in UAE's international secondary schools bears political and practical significance. Global cultures are represented in Abu Dhabi's international secondary schools. Obesity, diabetes, and cardiovascular disease affect how students interact with food and nutrition teachers. Moreover, Islam forms the foundation of UAE culture. National culture governs all learning institutions, including international schools. Understanding how this culture

**CONTACT** Mike Mimirinis  [m.mimirinis@liverpool.ac.uk](mailto:m.mimirinis@liverpool.ac.uk)  University of Liverpool, Liverpool, UK

© 2025 The Author(s). Published with license by Taylor & Francis Group, LLC.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

interacts with foreign school diversity is worth exploring since it is only international schools that teach food preparation and nutrition in Abu Dhabi and the UAE. This study therefore aims to investigate the potential of such a program in Abu Dhabi's public secondary schools with a particular emphasis on the professional development of SFNE teachers.

Earlier research had identified subjects like home economics, family education, food technology, family and consumer science, and SFNE as critical in developing practical life skills and addressing obesity and low food literacy (Lichtenstein, 2010; Rutland & Turner, 2020). These subjects equip individuals with practical knowledge for maintaining healthy lifestyles, sustainable living, and efficient household management (Nickols & Kay, 2015). They foster essential skills such as budgeting, meal planning, and understanding nutritional needs, which are vital for adapting to contemporary challenges like economic instability and health concerns (Pendergast et al., 2012; M. G. Smith et al., 2004). Poor nutrition is still a problem around the world, even with efforts to improve public health (Belarmino et al., 2024; Fiteni, 2021). Individuals from lower socioeconomic backgrounds typically consume fewer nutritious foods, such as fruits and vegetables, and a greater quantity of high-calorie items, in contrast to those from higher socioeconomic backgrounds (Cheon & Hong, 2017; Manyanga et al., 2017).

As a response, many countries have recognized the importance of incorporating SFNE into their education systems. Multiple countries (e.g., Australia, Canada, Czech Republic, Denmark, England, Finland, Germany, India, Indonesia, Ireland, Japan, South Korea, Sweden, US) implemented dedicated food and nutrition curricula in schools to promote lifelong health and well-being coupled with developing practical skills (Ritchie, 2018; K. Smith et al., 2022). For example, in England the SFNE curriculum is subdivided into five major parts, including Cookery and Nutrition, which is compulsory in all maintained (state) schools in the UK for year 7 (US equivalent of Grade 6) till year 9 (Grade 8). Cookery and Nutrition for year 7, 8, and 9 (Grades 6, 7, and 8) covers culinary skills, food safety, heat transfer, food choices, food science, food poisoning, nutrition, food choices, food spillage and contamination, micronutrients, and macronutrients (Matsumoto, 2019). For year 10 (Grade 9) and 11 (Grade 10), the subject of food preparation and nutrition encompasses seven sections: food, nutrition and health, and the science, safety, choice, provenance, and preparation of food (Rector et al., 2021). Year 11 (Grade 10) students also complete their two non-examination assessments in scientific investigation and food preparation for their final assessment.

Countries in the Middle East also embraced SFNE programs as part of their educational provision (e.g., Egypt, Lebanon, Iran, Pakistan, Palestine, Saudi Arabia, Turkey) (Mohsen et al., 2022). It is in the same spirit that the UAE envisioned a new generation of schools to be equipped with home economics labs where students practically learn food and nutrition, art and design, and clothing and textiles, among other hands-on skills. For public schools that teach food science and nutrition, the Emirates Schools Establishment, which began operating in 2021, is in charge of providing the necessary teaching materials, while the Ministry of Education has the responsibility of developing the syllabus. The prevalence of obesity, diabetes, and cardiovascular diseases among adolescents in the UAE highlights the urgent need for comprehensive SFNE in public secondary schools.

Empirical studies support the effectiveness of SFNE in improving students' dietary knowledge, attitudes, and behaviors. A quasi-experimental study by Prelip et al. (2012) involving six schools from the Los Angeles Unified School District and another quantitative study by Tamiru et al. (2016) involving 1,000 adolescents aged 10–19 found that standardized nutrition curriculum, teacher training, and parent nutrition education led to positive changes in students' attitudes toward the consumption of fruits and vegetables. Others highlighted that sustainable food choices, balanced diets, and physical activity are linked to healthier lifestyles compared to those characterized by fatty, salty, and sugary foods (Garcia et al., 2017; Muzaffar et al., 2018).

Notwithstanding the benefits of SFNE, challenges remain. In countries that recently offered SFNE programs, these have often failed to deliver the expected skill-based education due to outdated curricula or a lack of practical assignments. For example, despite healthy food initiatives, Indian adolescents continue to eat poorly (Rathi et al., 2017). While the value of SFNE education in contemporary society is widely recognized, there is often limited provision of materials, professional guidelines, and support from schools (Antwi et al., 2020; Baker et al., 2020; Doustmohammadian et al., 2020; Kyere et al., 2020; Rector et al., 2021). Inadequate professional development and ineffective communication with parents are significant barriers that constrain the growth of SFNE curricula (Metos et al., 2018).

McKenzie (2007) proposes using classroom discussions, worksheets, keeping food records or shopping exercises to support students. Likewise, technologies such as the Internet, Artificial Intelligence, and the Internet of Things also provide a chance for interactive learning experiences. Continuous professional development and integration of technology in the classroom are

essential in addressing the lack of cultural capital that impacts students' nutrition (Tallon et al., 2019).

## Purpose

The questions surrounding SFNE content and pedagogy differ from culture to culture. Food represents a society's material culture and contributes to both the infrastructure and the superstructure of the social system (Da Silva et al., 2015). The culture and history of food, as well as its significance in shaping people's social and cultural identity, can be preserved by educating students about food as well as nutrition and health (Monterrosa et al., 2020). Therefore, the current research is designed to assist in the development of SFNE in the UAE as a sustainable approach toward reducing the prevalence of chronic nutrition-based illnesses like obesity and diabetes. The research aims to provide valuable insights for Certified Health Education Specialists (CHES) by identifying the challenges teachers face in implementing SFNE curriculum in Abu Dhabi and the UAE at large. By understanding these challenges and what affects teachers' preparedness, CHES professionals can create targeted interventions, training programs, and resources that make it easier for teachers to teach nutrition in a way that improves students' health.

There has been a significant transformation of the UAE's education sector over the past few decades with an emphasis on innovation, technology integration, STEM education, and preparing students for the knowledge economy (Al Dulaimi et al., 2022; Matsumoto, 2019). The current curriculum and pedagogy in the UAE aim to promote the integration of academic knowledge with practical skills, creativity, critical thinking, and ethical values (Chowdhary, 2023). The UAE presently intends to implement an SFNE program in its core curriculum for Grade 9 to Grade 12. GCSE Food Preparation and Nutrition is a subject being taught in international secondary schools in Abu Dhabi and contributes to the attainment of the General Certificate of Secondary Education (GCSE). Moreover, non-examination assessments, as used in this study, refer to project-based coursework that accounts for a student's final grade and entails coursework and practical science endorsements. The practical test consists of two parts: the first part is a scientific investigation, and the second part is meal planning, in which students are graded on their practical food science knowledge and culinary abilities. The examination boards assess against a list of scientific investigations and meal planning themes that they believe need high, medium, or low levels of competence.

British schools in Abu Dhabi follow the British curriculum. Cooking and learning about food have been a compulsory part of the curriculum for Grade 1 to Grade 5 since the introduction of the National curriculum in 1988 in the UK and for Grade 6 to Grade 8 since 2016. Currently, schools offer it as an optional subject from Grade 9 to Grade 10, which contributes toward a GCSE. SFNE offers opportunities to help children and communities improve their food habits and perspectives over the long term, start and implement external change in food systems, and disseminate information about food and nutrition to others. Despite the growing interest in SFNE, it continues to receive limited funding. Capacity building is also sparse throughout the educational system. Within this context, this study aimed at addressing two critical aspects of curriculum implementation: the practical challenges teachers encounter in facilitating non-examination assessments and the broader systemic and individual factors that influence their readiness to support the SFNE curriculum. Two research questions were posed:

- What challenges do teachers face in supporting students during their non-examination assessments?
- What factors affect teachers' preparedness to support SFNE curriculum program development?

Understanding these issues is key to designing a curriculum that is both effective and sustainable, ensuring that teachers are equipped to deliver high-quality SFNE education that promotes student health and well-being.

## Methods

The ethnographic approach adopted for this study focuses on providing a detailed, holistic description of the behavior of a given group within their natural cultural context (Jones & Smith, 2017). Ethnography is a descriptive, analytical study of the culture, values, and practices of one or more groups through considerable engagement in the field (Denscombe, 2014). Data are typically collected through observations and interviews, which are then used to draw conclusions about how societies and individuals function. Ethnography casts a cultural lens on people's lives within their natural, real-life environments to develop an explanation or a theory around behavior and culture (Jerolmack & Khan, 2018). This study aims to obtain an emic perspective of how the dominating culture characterizes the teaching of SFNE in Abu Dhabi secondary international schools. There are a total of 369 schools in Abu Dhabi,

of which 285 are state schools and 84 are private schools. Charter schools are government schools that in recent years have been managed by international school leadership with an expectation to bring about change in how they operate and perform. Twenty-two international schools offer the British curriculum, while there are 19 schools that offer the American curriculum. The study sought to recruit secondary international school-teachers of SFNE-related subjects in Abu Dhabi. These included the GCSE Food Preparation and Nutrition (based on the British Curriculum), the iGCSE Food and Nutrition (an international equivalent of the GCSE), or the International Baccalaureate (IB) diploma in Food Science and Technology. Purposive sampling was used to recruit the respective participants, as the study focuses on a subset of teachers who fit a particular profile (Stamatopoulos, 2022). Twenty-six participants identified as female, and 3 as male, while 23 worked full-time and 6 part-time. Most of the participants gained a bachelor's degree, with or without additional teacher training, and their range of work experience ranged from under 5 to over 25 years of teaching.

According to the Department of Education and Knowledge (n.d.), only 44 schools in Abu Dhabi offer the British curriculum, which includes food preparation and nutrition. Therefore, the study could only include 44 teachers who teach the subject. The 29 recruited teachers were deemed a good sample to generate in-depth insights on the study's objectives (Braun & Clarke, 2019; Squire et al., 2024). As part of the ethnographic design, the first author conducted the interviews after receiving doctoral-level training and supervision by the second author. The trustworthiness of the study was enhanced by the fact that she was external to the schools where recruitment took place, yet familiar with the subject matter of the interviews. Following an ethics approval and local authorizations, she also conducted the observations and reviewed the documents used by the teachers. The interviews involved 29 teachers and lasted 30–50 minutes. The interviews were held in a natural environment within their respective school to enhance the feeling of easiness during the interview process. The interview schedule is appended.

The same 29 teachers also participated in the lesson observations, which lasted 40–55 minutes each. Passive observation allowed to shadow the teachers' everyday life within the school while conducting SFNE lessons, especially during the non-examination assessments implementation. The observations centered on three pedagogical aspects: the content of what was being taught, the way in which teaching was done, and the approaches to interact with the students. The first author liaised with the teachers and departmental

administrations to access documents such as timetable schedules, syllabi, schemes of work, and lesson plans from all 29 teachers.

Analysis of interview data began by coding to identify primary themes and creating nodes to represent those themes. Coding was done in different phases, beginning with open coding, where segments of texts without preconceived contexts were coded for the initial impressions and to engender the emergence of new codes and themes. Selective coding was then done to refine the analysis, leading to a list of final themes. This was followed by memoing and creating code books to produce data interpretations. Observational data were primarily recorded through field notes. Once recorded, the data were analyzed inductively by coding the observational notes followed by thematic analysis (Braun & Clarke, 2006).

## Results

The first section of the results presents the teachers' accounts, distilled into themes. This section is divided into themes pertinent to the first research question – challenges of conducting non-examination assessments (A1-A5) – and the second research question – addressing teaching preparedness for SFNE (B1-B5).

### Interviews

This section presents the five main themes (A1-A5) that teachers encounter when teaching SFNE, particularly during non-examination assessments.

#### *A1 time allocation to lessons and assessments*

Most teachers (18 out of the 29) reported that time allocated to SFNE lessons and non-examination assessments, was limited. Participants identified short lessons as a major challenge affecting their ability to deliver on non-examination assessment. Time limitations adversely affected their ability to deliver practical lessons. Teacher 8 (T8) painted a clear picture of this.

One of the challenges I have been facing as a teacher is the limited time allocated for food and nutrition education. There are some practical sessions that I always have to hurry through to fit within the allocated time of 40 minutes for each lesson. There is a need for increasing time allocation for food and nutrition classes. (T8)

#### *A2 limited access to resources*

Fifteen of the participants identified limited access to resources as one of the challenging aspects of their practice as SFNE teachers, especially with respect to non-examination assessments. Specific examples of

resources that appeared prominently in teachers' accounts were culinary laboratories, kitchen facilities, tools and equipment, space, technological integration, and food ingredients.

Resources and materials such as books, teaching materials, and well-equipped culinary laboratories also limit the successful teaching of the subject. Addressing some of these issues can be difficult at the teacher level. Managing the available time and resources effectively has helped me cover most topics, though not all. (T7)

One of the participants called for technological integration, specifically Information Communication Technologies (ICT).

The resources of time and space are limited. Having sufficient ICT resources for the students to complete their first and second non-examination assessment write-ups and space could save time and money for the practical activities. (T10)

### ***A3 students' diverse learning needs***

Students' diverse learning needs emerged as an important theme in their desire to support students during non-examination assessments. The teachers are coming to terms with the fact that classes are becoming culturally diverse but are unable to effectively address the uniqueness of the situation.

A challenge I have encountered in teaching food and nutrition is the diverse dietary restrictions of most students. Students come from different cultural backgrounds with different dietary choices. A problem might arise when conducting a cooking practical with food that is considered unethical by some students' cultures. That becomes a challenge for a teacher to find accommodation for such a problem. (T21)

Students' varying levels of knowledge surfaced as a major source of concern. Classes, particularly ones that are culturally diverse, usually consist of students who learn at various paces or students who have learning difficulties. The teachers stated that developing and implementing lessons that consider the interests of all students in the classroom remained challenging.

### ***A4 cultural norms and morals***

Cultural norms and morals in SFNE classes challenged the teachers' ability to support students during non-examination assessments. Strict cultural food preferences appeared as a distinct element, eliminating certain meals and food items from any culinary experimentation in the UAE. At times, teachers have little knowledge of the cultural food preferences and end up in divergence from cultural expectations.

Over the years, I have developed the necessary experience to cater to the needs of my students, but when I came to the UAE, I realized that certain topics had to be adjusted, as we cannot mention pork, bacon, poppy seeds, gelatine if not plant-based, or alcohol of any sort in recipes. Therefore, I found it hard as no one told me, and I had to find out when I received a complaint from a parent. I felt very embarrassed, but now I know. On the other hand, I also had to change the recipes that I used to cater to such changes. (T28)

Another cultural factor raised was the prevalent nanny culture. Many children grow under the care of nannies and are rarely engaged in home-based activities such as food preparation.

### ***A5 students' socioeconomic challenges***

Teachers highlighted students' socioeconomic backgrounds as one of the leading challenges they faced. T27 opined that due to culture and socioeconomic backgrounds, students attend classes with already-formed perspectives on food choices, meal planning, and eating patterns.

Students come to class with already-shaped perspectives on food choices, meal planning, and eating patterns. Yet the syllabus identifies only a few universalized foods and culinary concepts, especially since its focus is on mainly British cuisine. This makes it difficult to align teaching contents with the varying cultures, especially since the British food preparation and nutrition books incorporate culturally sensitive data prohibited in the UAE. At the same time, students might be less receptive to new ideas.

These insights underscore the importance of considering socioeconomic factors when teaching food and nutrition education. Students' varying access to resources and preconceived notions about food can significantly impact their learning experience.

In terms of the second research question – the factors affecting teachers' preparedness to support the SFNE curriculum – the analysis produced the following most prominent themes (B1-B5).

### ***B1 curriculum development***

Cultural integration was an important curriculum development theme, evident in the accounts of 10 interviewees. The teachers who raised this issue complained that they struggled with addressing students' diverse learning needs because the curriculum is based on universalized foods, ingredients, and nutrition concepts despite the culturally diverse classrooms. Most of them recommended that, to enhance teachers' preparedness, there is a need to ensure that the curriculum recognizes and integrates dishes, ingredients, and nutrition concepts from various cultures.

The curriculum for food preparation and nutrition could benefit from upgrades in incorporating more diverse and culturally applicable recipes, extra handouts on sensible work, recipes translated into Arabic for UAE students, and extra sustainability and environmental focus in meal alternatives and practices. (T19)

The call for cultural integration, interdisciplinary approaches, and increased practical activities underscores the need for a dynamic and inclusive curriculum that reflects the diverse needs and backgrounds of students.

### **B2 relevance of teachers' academic achievements**

Twenty participants suggested that their academic training and achievements affected their ability to realize the desired outcomes within their classrooms. Those with bachelor's degrees in programs related to SFNE were more likely to mention that they felt equipped to teach their classes.

I have a bachelor's degree in food nutrition and dietetics . . . Well, professionally, I feel adequately equipped. I think my university training was diverse enough to equip me with viable knowledge of how to handle students. (T11)

Participants with higher academic qualifications reported feeling more prepared to deliver SFNE content effectively, emphasizing the importance of specialized and advanced training in supporting students' achievement.

### **B3 access to resources**

Access to resources surfaced as the third most significant factor shaping teachers' preparedness to support the SFNE curriculum development program. Nineteen of the participants indicated that their ability to demonstrate a high level of confidence in what they teach is defined by access to resources. The teachers felt more prepared to deliver when they could access up-to-date textbooks, lab facilities, ingredients, interactive technologies, and sufficient scheduled time for food and nutrition lessons and experiments. T17 provided a list of these resources that teachers needed to ascertain their preparedness.

My school provides teachers with up-to-date textbooks, lab facilities, and access to online resources that support teaching, but I notice that I also have to adapt them to the students' cultural needs. . . Having well-equipped laboratories, food rooms, as well as time for students to complete practical tasks, is critical; it matters a lot. Access to updated textbooks, multimedia resources, and online databases with reputable nutrition information is essential. Adequate kitchen facilities, equipped with modern appliances and tools, would enhance practical learning experiences.

The respondent's perspectives highlight that resource allocation would make food and nutrition education more engaging and effective for students.

### **B4 teachers' professional development**

Sixteen teachers expressed that their preparedness to teach is dependent on the availability of professional development opportunities, with some indicating that commitment to development is essential for students' learning outcomes. Teachers appear to pursue professional development in multiple ways: workshops, reading widely to keep abreast of contemporary food and nutrition trends, and networking. T18 indicated that commitment to their growth is an unwavering part of ensuring that students receive a "high-quality" education.

I've also taken professional development courses in curriculum design and innovative teaching methods to enhance my skills in effective lesson delivery . . . The evolving landscape of nutrition as a science requires me—the teacher—to continuously update my knowledge to provide accurate and relevant information to students . . . I'd like to emphasize the importance of professional development for teachers in UAE. Staying updated with the latest advancements in nutrition science and teaching methodologies allows teachers to provide high-quality education to students. (T18)

### **B5 students' self-beliefs on capabilities to execute instructions**

Fifteen teachers identified students' self-beliefs in their capabilities to execute instructions as a key factor affecting their preparedness to support SFNE curriculum development. They felt more prepared to teach when students were self-motivated to learn, had positive attitudes toward what they were learning, and responded well to teaching strategies.

I think the level of self-belief among my students is always a good motivating factor towards undertaking such kind of assessment. When my students believe that they are capable of executing the instructions obtained from class, I support them so as to ascertain how well the lesson has benefited them. (T5)

The quote underscores the importance of self-belief in students' learning processes and their ability to follow through with instructions. Teachers feel more effective when their students demonstrate a positive response to the instructional strategies employed. They perceived this dynamic as enhancing the teaching experience and contributing to the success of the SFNE curriculum.

### **Observations**

Three pedagogical aspects were observed and recorded during the teachers' observations: the content of what was being taught, the way in which teaching was done, and the approaches that the teachers were using to socialize with students during

non-examination assessments. The teachers primarily depended on the curricular content to transmit knowledge to students. References to students' experiences and contexts were limited. Visual aids in the classrooms were observed in the form of infographics that simplify complex information, creative presentations that ensure students are engaged throughout the lessons, quick diagrams and illustrations on whiteboards, and colorful posters and charts to display key concepts or important lesson-related information. Occasionally, teachers shared lesson content through interactive whiteboards, simulations, and videos. Some other instructional methods deployed include interactive discussions, demonstrations, and hands-on activities. It was also evident that most teachers observed in SFNE practical labs struggled with effectively completing lessons, mainly due to time constraints.

Teachers blended group work, open communication, and individual attention to connect with students. Group work was typical in SFNE practical labs but atypical in classrooms. It formed part of over 70% of SFNE practical lab observations and approximately 10% of classroom observations. In several instances, teachers permitted students to actively organize themselves into groups. Less often, teachers deliberately selected students to create groupings, matching students by their strengths and weaknesses. This was a deliberate approach to mix abilities, diversity, and social capabilities. Open communication occurred in all observations, although more so in some classrooms. In two cases, open communication was only seen a few minutes before the end of lessons. This was perceived as a situation where time constraints were pressing, leading to a hurried summary at the conclusion. Fifteen of the teachers recognized the challenge of offering individual attention to students' queries and concerns.

In addition to the interviews and the observations, the thematic review of documents revealed the following topics: curriculum integration, time allocation, teacher professional development, and cultural relevance. These topics were compared and contrasted with the themes emerging from the interviews and the session observations.

## Discussion

Against the backdrop of evolving societal norms, cultural traditions, and educational landscapes, the study sought to address two key research questions. Firstly, explore the obstacles teachers face in guiding students during their non-examination assessments. Secondly,

identify the factors that impact teachers' readiness to contribute effectively to the development of the SFNE curriculum in Abu Dhabi secondary schools.

The emerging obstacles that teachers face in assisting students during their non-examination assessments include limited time allocation, limited access to resources, addressing diverse learning needs, cultural norms and morals, socioeconomic challenges, limited technical support, student engagement, mastery of content, expert collaboration, balancing theoretical knowledge and practical skills, and large class sizes. In their study of developing a contextual nutrition education manual, Kupolati et al. (2018) highlighted that teachers often feel constrained by limited time to address the necessary breadth of content effectively. Even though they thought the manual was a good way to improve their nutrition teaching skills, they also said that the limited time was still a big problem for teachers, especially when it came to balancing the demands of the curriculum with meaningful ways to learn. This constraint leaves teachers grappling with the dilemma of prioritization as they strive to strike a balance between delivering core content and facilitating meaningful learning (Harmer, 2019). Again, from educational materials and laboratory equipment to specialized facilities for culinary demonstrations, the availability of resources plays a pivotal role in enriching students' experiences. Nonetheless, teachers reported that they often find themselves navigating resource constraints, which hinder their ability to conduct practical activities and demonstrations effectively. Moreover, adapting instructional strategies to accommodate diverse learners requires a deep understanding of individual strengths, preferences, and challenges. Teachers must employ a repertoire of teaching techniques, ranging from differentiated instruction to personalized learning approaches, to ensure equitable access to SFNE for all students (Kamphuis et al., 2015).

SFNE offers a wide range of opportunities to help children, and their communities improve their food habits and perspectives over the long term, implement external change in food systems, and spread information about food and nutrition to others. Despite the growing interest in SFNE, it continues to get little funding, and capacity building is sparse throughout the educational system. Capacity building is the process by which individuals, groups, organizations, and societies increase their ability to solve problems, define objectives, understand, and deal with development needs to achieve objectives in a sustainable manner. Capacity development levels include system, organization, workforce and community levels (Monterrosa et al., 2020). SFNE is yet to realize capacity development across

different levels of Abu Dhabi's society. While there are notable improvements in both the workforce and community levels. At the system level, the society is yet to have in place a broader social, cultural, economic, and political "environment" that influences how nutrition capacity develops and has its operational effects, including legal frameworks and supporting policies. At the organizational level, the society is yet to have government service delivery sectors, non-governmental organizations, and educational and training institutions.

The results resonate with studies conducted in other regions that have also reported limited time allocation, resource constraints, diverse student populations, and the need for teacher professional development (Chowdhary, 2023; Koch et al., 2020; Rathi et al., 2017; Rector et al., 2021). These issues are not unique to Abu Dhabi teachers but are prevalent across various educational settings globally. Eifert et al. (2021) explored the responsibilities and competencies of health education specialists and established that their role is multifaceted and spans from program planning and development to health communication, education, and advocacy. Educational background, access to resources, community needs and preferences, and professional development opportunities also influence their work. The emphasis on curriculum integration, hands-on learning experiences, and culturally relevant pedagogy aligns with good practices recommended in the literature (Antwi et al., 2020; Graziose et al., 2017; Murimi et al., 2018; Teo et al., 2019).

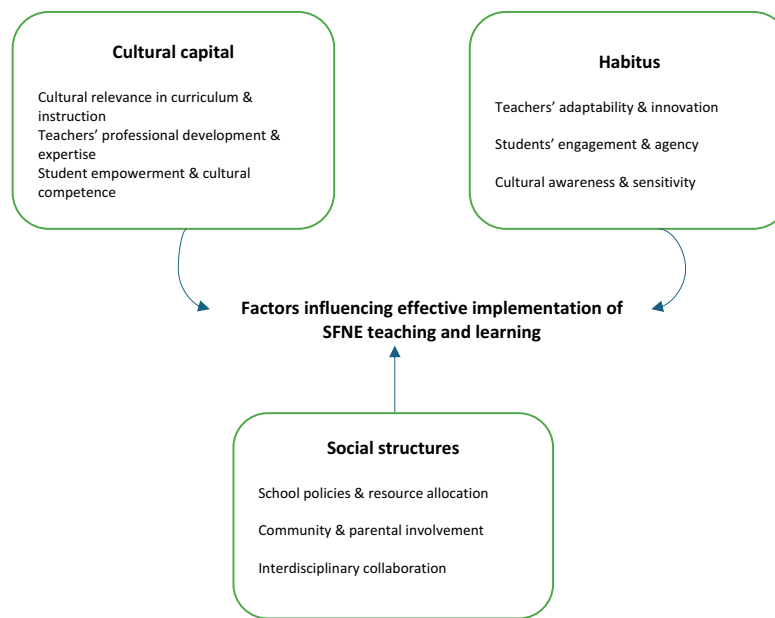
The findings suggest several recommendations for program development in SFNE within Abu Dhabi's secondary schools. Firstly, there is a need to enhance curriculum integration and coherence by aligning SFNE with broader educational objectives. This may involve revising curriculum frameworks, developing interdisciplinary learning units, and incorporating real-world applications of dietary concepts. To achieve this, it is crucial to make SFNE a compulsory subject, thereby ensuring all students receive consistent and comprehensive instruction in this vital area. Secondly, efforts should be made to address resource constraints and enhance access to educational materials, laboratory equipment, and technology infrastructure. The UAE government can invest in SFNE practical labs across both public and charter schools. Additionally, investing in professional development programs can strengthen teachers' pedagogical practices and subject matter expertise, ultimately enhancing the quality of instruction and student learning outcomes. Introducing professional development programs tailored to food science and nutrition can help teachers improve their skills and knowledge. Health Education Specialists and CHES

professionals can leverage these insights to create targeted interventions that address the barriers teachers face, ensuring they are well-prepared to deliver effective nutrition education. This can involve developing teacher training programs that provide both practical and theoretical knowledge in food science and nutrition. Furthermore, the UAE should invest in university courses to train future home economics and food technology teachers specifically for SFNE in UAE schools.

Based on the findings, we propose a conceptual framework (Figure 1), guided by Bourdieu's theory of practice (Bourdieu, 1998). Within the realm of habitus, the framework stresses the pivotal role of teachers in creating a conducive learning environment that fosters student engagement, agency, and cultural awareness. Teachers' adaptability and innovation are crucial factors in overcoming challenges such as resource limitations, allowing them to tailor instructional approaches to meet the diverse needs of students effectively. Furthermore, students' engagement and agency are fostered through the cultivation of a learning environment that encourages active participation and empowers students to make scientific dietary choices during their non-examination assessments.

The social structures component of the framework highlights the broader institutional context within which SFNE operates, consisting of school policies, resource allocation, and community involvement. School policies and resource allocation play a significant role in shaping the availability of instructional materials, professional development opportunities for teachers, and support systems for implementing SFNE effectively. Community and parental involvement contribute to a broader social context that values nutrition education, reinforcing healthy behaviors learned in school and fostering collaborative partnerships between schools and the community. Interdisciplinary collaboration further enhances the integration of SFNE across various subject areas and co-curricular activities, promoting interdisciplinary connections and reinforcing learning outcomes.

Within the framework, cultural relevance in curriculum and instruction is paramount, as it ensures that educational content resonates with students' cultural backgrounds and identities, promoting a sense of belonging in the learning process. Teachers' professional development and expertise are critical for enhancing teachers' capacity to navigate cultural sensitivities effectively and integrate culturally relevant pedagogical practices into their teaching. Additionally, student empowerment and cultural competence are fostered through SFNE, enabling students to develop critical thinking skills, cultural awareness, and the ability to



**Figure 1.** Conceptual framework.

navigate diverse cultural contexts and dietary practices effectively. At the same time, the influence of social structures, such as institutional policies and resource distribution, further molds teachers' practices and SFNE implementation. Bourdieu (1998) contends that social structures impose constraints and afford opportunities that shape individuals' actions within a given field. Institutional policies on curriculum development and resource allocation significantly impact teachers' capacity to deliver comprehensive SFNE programs.

### Translation to Health Education Practice

To solve the health problems caused by food, curriculum development emerged as a critical factor, with teachers emphasizing the importance of aligning SFNE curricula with national educational standards and incorporating relevant, culturally sensitive content. Theory-based, behavior-focused, and interdisciplinary approaches, along with the seamless integration of innovative methods, should guide curriculum development. Rutland and Turner (2020) argue that the SFNE curriculum needs to be developed and implemented with the help of many partners, including curriculum developers, teachers, family members, food professionals, dietitians, and the media. These partners can have an impact on the curriculum and should work together to achieve further enhancements.

This study was primarily concerned with how to best implement the SFNE curriculum in the UAE. It informs other Health educators on how to design and

implement a similar intervention and corresponds with the National Commission for Health Education Credentialing, Inc. (NCHEC) competencies in *assessing needs and capacity* (competencies 1.3 and 1.4), especially sub-competencies 1.3.2, 1.3.3, 1.4.2, and 1.4.4 relating to determining the knowledge, attitudes, beliefs, skills, and behaviors that impact the health and health literacy of the priority population. According to NCHEC (2024), these (sub-)competences also include figuring out the environmental, cultural, economic, political, and social factors that impact the priority population's health and/or learning, setting priorities for health education and promotion needs, and giving advice based on what they have discovered. For the same reason, the study's results can help health educators who work with schools *plan* health education (competencies 2.1 and 2.3), especially 2.1.2, which has to do with making it easier for priority groups (like high school students and their teachers) to work together with their partners. The contribution of the study with regards to these areas is more prominent when cultural diversity is considered, especially when this is linked with dietary preferences. Lastly, health educators who work with schools can be the ones to put health education research (competencies 3.1, 3.2, and 3.3) into action, especially sub-competency 3.2.1, which is about creating a learning-friendly space. The ethnographic research design that was used and the conceptual framework that was created can help with future health education research in relevant settings and with relevant groups of people.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## ORCID

Denise Buttigieg Fiteni  <http://orcid.org/0000-0001-5052-8477>

Mike Mimirinis  <http://orcid.org/0000-0003-1835-9348>

## References

- Al Dulaimi, A. M., Al Marzooqi, S. M., Lubis, A., Siren, N. B., & Kassim, S. B. (2022). Innovation capabilities and human development competitiveness in education sector: Evidence from UAE. *Frontiers in Psychology, 13*, 933432. <https://doi.org/10.3389/fpsyg.2022.933432>
- Aljulifi, M. Z. (2021). Prevalence and reasons of increased type 2 diabetes in Gulf Cooperation Council Countries. *Saudi Medical Journal, 42*(5), 481–490. <https://doi.org/10.15537/smj.2021.42.5.20200676>
- Al-Yateem, N., & Rossiter, R. (2017). Nutritional knowledge and habits of adolescents aged 9 to 13 years in Sharjah, United Arab Emirates: A cross sectional study. *Eastern Mediterranean Health Journal, 23*(8), 551–558. <https://doi.org/10.26719/2017.23.8.551>
- Antwi, J., Ohemeng, A., Boateng, L., Quaidoo, E., & Bannerman, B. (2020). Primary school-based nutrition education intervention on nutrition knowledge, attitude, and practices among school-age children in Ghana. *Global Health Promotion, 27*(4), 114–122. <https://doi.org/10.1177/1757975920945241>
- Baker, S., Auld, G., Ammerman, A., Lohse, B., Serrano, E., & Wardlaw, M. K. (2020). Identification of a framework for best practices in nutrition education for low-income audiences. *Journal of Nutrition Education and Behaviour, 52*(5), 546–552. <https://doi.org/10.1016/j.jneb.2019.12.007>
- Belarmino, E. H., Malacarne, J., McCarthy, A. C., Bliss, S., Laurent, J., Merrill, S. C., Niles, M. T., Nowak, S., Schattman, R. E., & Yerxa, K. (2024). Suboptimal diets were identified among adults in two rural states during the COVID-19 pandemic. *Journal of Hunger & Environmental Nutrition, 19*(6), 1366–1381. <https://doi.org/10.1080/19320248.2024.2313524>
- Bourdieu, P. (1998). *Practical reason: On the theory of action*. Stanford University Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2019). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise & Health, 13*(2), 201–216. <https://doi.org/10.1080/2159676X.2019.1704846>
- Cheon, B. K., & Hong, Y. Y. (2017). Mere experience of low subjective socioeconomic status stimulates appetite and food intake. *Proceedings of the National Academy of Sciences, 114*(1), 72–77. <https://doi.org/10.1073/pnas.1607330114>
- Chowdhary, C. (2023). *So... what does an outstanding teacher do?: A visible learning evidence based approach*. Routledge.
- Da Silva, A. C. B., da Silva, M. C. C. B., & de Oliveira, V. É. R. (2015). Food and nutrition education, culture and subjectivities: The school contributing to the development of critical and creative people around food culture. *Demetra: Food, Nutrition & Health, 10*(2), 247–258.
- Denscombe, M. (2014). *The good research guide* (4th ed.). Open University Press.
- Department of Education and Knowledge. (n.d.). *Curriculums in Abu Dhabi*. <https://www.adek.gov.ae/en/Education-System/Private-Schools/Curriculum/Curriculums-in-Abu-Dhabi>
- Doustmohammadian, A., Omidvar, N., & Shakibazadeh, E. (2020). School-based interventions for promoting food and nutrition literacy (FNLIT) in elementary school children: A systematic review protocol. *Systematic Reviews, 9*(1), 1–7. <https://doi.org/10.1186/s13643-020-01339-0>
- Eifert, E., Chaney, B., Redican, K., & Eddy, J. (2021). Responsibilities and competencies for health education specialists: Implications for research and practice in the *American Journal of Health Education*. *American Journal of Health Education, 52*(1), 1–7. <https://doi.org/10.1080/19325037.2020.1854134>
- Fiteni, D. B. (2021). Application of hybrid learning interventions in advancing food and nutrition pedagogy in UAE and beyond through culinary science to sustain human health and wellbeing. *International Journal of Home Economics, 14*(1), 16–38.
- Fiteni, D. B. (2023). Guiding the future of food science and safety in UAE through advancing curriculum development: An exploratory study. *International Journal of Home Economics, 16*(1), 4–20.
- Garcia, A. L., Reardon, R., Hammond, E., Parrett, A., & Gebbie-Diben, A. (2017). Evaluation of the “Eat Better Feel Better” cooking programme to tackle barriers to healthy eating. *International Journal of Environmental Research and Public Health, 14*(4), 380. <https://doi.org/10.3390/ijerph14040380>
- Graziose, M. M., Koch, P. A., Wang, Y. C., Lee Gray, H., & Contento, I. R. (2017). Cost-effectiveness of a nutrition education curriculum intervention in elementary schools. *Journal of Nutrition Education and Behaviour, 49*(8), 684–691.e1. <https://doi.org/10.1016/j.jneb.2016.10.006>
- Harmer, J. (2019). *How to teach English*. Pearson/Longman.
- Jairoun, A., Al-Hemyari, S., Shahwan, M., Jairoun, S., Alorfi, N., Zyoud, S., Suliman, A., Shahwan, M., Alnuaimi, G., Shahwan, M., Al-Qirim, T., & El-Dahiyat, F. (2024). Current perspectives, practices, and barriers faced by community pharmacists regarding pharmaceutical care services for diabetes mellitus in the United Arab Emirates. *Journal of Multidisciplinary Healthcare, 17*, 2563–2576. <https://doi.org/10.2147/JMDH.S447450>
- Jerolmack, C., & Khan, S. R. (Eds.). (2018). *Approaches to ethnography: Analysis and representation in participant observation*. Oxford University Press.
- Jones, J., & Smith, J. (2017). Ethnography: Challenges and opportunities. *Evidence Based Nursing, 20*(4), 98–100. <https://doi.org/10.1136/eb-2017-102786>
- Kamphuis, C. B., Jansen, T., Mackenbach, J. P., & Van Lenthe, F. J. (2015). Bourdieu’s cultural capital in relation to food choices: A systematic review of cultural capital indicators and an empirical proof of concept. *PLOS ONE*,

- 10(8), e0130695. <https://doi.org/10.1371/journal.pone.0130695>
- Koch, P., McCarthy, J., Raffel, C., Gray, H. L., & Guerra, L. A. (2020). Expanding and enhancing food and nutrition education in New York City public schools: An examination of program characteristics and distribution. *Nutrients*, 12(8), 2423. <https://doi.org/10.3390/nu12082423>
- Kupolati, M. D., MacIntyre, U. E., & Gericke, G. J. (2018). A theory-based contextual nutrition education manual enhanced nutrition teaching skill. *Frontiers in Public Health*, 6(157), 1–8. <https://doi.org/10.3389/fpubh.2018.00157>
- Kyere, P., Veerman, J. L., Lee, P., & Stewart, D. E. (2020). Effectiveness of school-based nutrition interventions in sub-Saharan Africa: A systematic review. *Public Health Nutrition*, 23(14), 2626–2636. <https://doi.org/10.1017/S1368980020000506>
- Lichtenstein, A. H. (2010). Bring back home economics education. *JAMA*, 303(18), 1857–1858. <https://doi.org/10.1001/jama.2010.592>
- Mamdouh, H., Hussain, H. Y., Ibrahim, G. M., Alawadi, F., Hassanein, M., Zarooni, A. A., Suwaidi, H. A., Hassan, A., Alsheikh-Ali, A., & Alnakhi, W. K. (2023). Prevalence and associated risk factors of overweight and obesity among adult population in Dubai: A population-based cross-sectional survey in Dubai, the United Arab Emirates. *BMJ Open*, 13(1), e062053. <https://doi.org/10.1136/bmjopen-2022-062053>
- Manyanga, T., Tremblay, M. S., Chaput, J. P., Katzmarzyk, P. T., Fogelholm, M., Hu, G., Kuriyan, R., Kurpad, A., Lambert, E. V., Maher, C., Maia, J., Matsudo, V., Olds, T., Onywera, V., Sarmiento, O. L., Standage, M., Tudor-Locke, C., Zhao, P., Mikkila, V., & Broyles, S. T. (2017). Socioeconomic status and dietary patterns in children from around the world: Different associations by levels of country human development? *BMC Public Health*, 17(1), 1–11. <https://doi.org/10.1186/s12889-017-4383-8>
- Matsumoto, A. (2019). Literature review on education reform in the UAE. *International Journal of Educational Reform*, 28(1), 4–23. <https://doi.org/10.1177/1056787918824188>
- McKenzie, T. L. (2007). The preparation of physical educators: A public health perspective. *Quest*, 59(4), 345–357. <https://doi.org/10.1080/00336297.2007.10483557>
- Metos, J. M., Sarnoff, K., & Jordan, K. C. (2018). Teachers perceived and desired roles in nutrition education. *The Journal of School Health*, 89(1), 68–76. <https://doi.org/10.1111/josh.12712>
- Mohsen, H., Sacre, Y., Hanna-Wakim, L., & Hoteit, M. (2022). Nutrition and food literacy in the MENA region: A review to inform nutrition research and policy makers. *International Journal of Environmental Research and Public Health*, 19(16), 10190. <https://doi.org/10.3390/ijerph191610190>
- Monterrosa, E. C., Frongillo, E. A., Drewnowski, A., de Pee, S., & Vandevijvere, S. (2020). Sociocultural influences on food choices and implications for sustainable healthy diets. *Food and Nutrition Bulletin*, 41(2\_suppl), 59S–73S. <https://doi.org/10.1177/0379572120975874>
- Murimi, M. W., Moyeda-Carabaza, A. F., Nguyen, B., Saha, S., Amin, R., & Njike, V. (2018). Factors that contribute to effective nutrition education interventions in children: A systematic review. *Nutrition Reviews*, 76(8), 553–580. <https://doi.org/10.1093/nutrit/nuy020>
- Muzaffar, H., Metcalfe, J. J., & Fiese, B. (2018). Narrative review of culinary interventions with children in schools to promote healthy eating: Directions for future research and practice. *Current Developments in Nutrition*, 2(6), nzy016. <https://doi.org/10.1093/cdn/nzy016>
- National Commission for Health Education Credentialing, Inc. (2024). *Understanding the eight areas of responsibility for health education specialists in the US: A comprehensive overview*. Health Education Specialist Certification - CHES®, MCHES® | NCHEC. Retrieved December 5, 2024, from <https://www.nchec.org/news/posts/understanding-the-eight-areas-of-responsibility>
- Nickols, S. Y., & Kay, G. (Eds.). (2015). *Remaking home economics: Resourcefulness and innovation in changing times*. University of Georgia Press.
- Pendergast, D., McGregor, S. L., & Turkki, K. (2012). *Creating home economics futures: The next 100 years*. Australian Academic Press.
- Prelip, M., Kinsler, J., Thai, C. L., Erasquin, J. T., & Slusser, W. (2012). Evaluation of a school-based multicomponent nutrition education program to improve young children's fruit and vegetable consumption. *Journal of Nutrition Education and Behaviour*, 44(4), 310–318. <https://doi.org/10.1016/j.jneb.2011.10.005>
- Rathi, N., Riddell, L., & Worsley, A. (2017). Food and nutrition education in private Indian secondary schools. *Health Education*, 117(2), 193–206. <https://doi.org/10.1108/HE-04-2016-0017>
- Rector, C., Afifa, N. N., Gupta, V., Ismail, A., Mosha, D., Katalambula, L. K., Vuai, S., Young, T., Hemler, E. C., Wang, D., & Fawzi, W. W. (2021). School-based nutrition programs for adolescents in Dodoma, Tanzania: A situation analysis. *Food and Nutrition Bulletin*, 42(3), 378–388. <https://doi.org/10.1177/03795721211020715>
- Ritchie, H. (2018). *Global food systems: Addressing malnutrition through sustainable system pathways* [Doctoral Thesis]. The University of Edinburgh.
- Rutland, M., & Turner, A. (Eds.). (2020). *Food education and food technology in school curricula: International perspectives*. Springer Nature.
- Smith, K., Wells, R., & Hawkes, C. (2022). How primary school curriculums in 11 countries around the world deliver food education and address food literacy: A policy analysis. *International Journal of Environmental Research and Public Health*, 19(4), 1–32. <https://doi.org/10.3390/ijerph19042019>
- Smith, M. G., Peterat, L., & de Zwart, M. (2004). *Home economics Now: Transformative practice, ecology and everyday life*. Pacific Educational Press.
- Squire, C. M., Giombi, K. C., Rupert, D. J., Amoozegar, J., & Williams, P. (2024). Determining an appropriate sample size for qualitative interviews to achieve true and near code saturation: Secondary analysis of data. *Journal of Medical Internet Research*, 26, e52998. <https://doi.org/10.2196/52998>
- Stamatopoulos, C. (2022). A holistic view of finite populations for determining an appropriate sample size. *International Journal of Marine Science and Environment*, 6(1), 36–54.
- Tallon, J. M., Saavedra Dias, R., Costa, A. M., Leitão, J. C., Barros, A., Rodrigues, V., Monteiro, M. J., Almeida, A., Narciso, J., & Silva, A. J. (2019). Impact of technology and

- school-based nutrition education programs on nutrition knowledge and behavior during adolescence—A systematic review. *Scandinavian Journal of Educational Research*, 65(1), 169–180. <https://doi.org/10.1080/00313831.2019.1659408>
- Tamiru, D., Argaw, A., Gerbaba, M., Nigussie, A., Ayana, G., & Belachew, T. (2016). Improving dietary diversity of school adolescents through school-based nutrition education and home gardening in Jimma Zone: Quasi-experimental design. *Eating Behaviors*, 23, 180–186. <https://doi.org/10.1016/j.eatbeh.2016.10.009>
- Teo, C. H., Chin, Y. S., Lim, P. Y., Masrom, S. A., & Shariff, Z. M. (2019). School-based intervention that integrates nutrition education and supportive healthy school food environment among Malaysian primary school children: A study protocol. *BMC Public Health*, 19(1), 1427. <https://doi.org/10.1186/s12889-019-7708-y>
- World Obesity. (2024). *Prevalence of obesity*. World Obesity Federation. <https://www.worldobesity.org/about/about-obesity/prevalence-of-obesity>

## Appendix

### Interview schedule

#### Questions

- (1) First, tell me about your current job and your academic qualifications
  - *Probe (if no specific answer is given): What do you teach?*
  - *Probe (if no specific answer is given): How long have you taught the subject(s)?*
  - *Probe (if no specific answer is given): What is your teaching degree in?*
  - *Probe (if no specific answer is given): What is your highest academic achievement?*
- (2) Does the subject you teach relate in any way to School-based Food and Nutrition Education? Could you please elaborate on that answer a bit more?
- (3) How many hours per week do you spend teaching the subject?
- (4) Based on your experience as a teacher so far, what key food and nutrition skills make School-based Food and Nutrition Education attempt to develop in learners?
- (5) How well do you feel equipped in terms of knowledge and resources to teach any food and nutrition subject in your current school? Please explain.  
Probe any of the following as appropriate
  - *Have you completed a course that you think contributed towards your professional development? Please explain further.*
  - *How would you characterize the relationship between you, your students, and the content they are supposed to learn?*
- (6) In your perception, what factors affect students' understanding of the key skills and concepts in your subject?
- (7) Are there any factors or situations that you find challenging in teaching the subject/s you teach?  
Probe any of the following as appropriate
  - *Why do you find these factors to be challenging?*
  - *Have you experienced these challenges in your current school?*
  - *How did you go about them?*
- (8) Based on your experiences as a teacher so far, what does non-examinable assessment mean to you?
- (9) In your perspective, which factors affect your abilities as a teacher to undertake non-examinable assessments?
- (10) How do you judge that the subject(s) that you teach has been successful?
- (11) Are there any specific areas of the curriculum/syllabus you feel requires improvement/s to meet the school goals? Could you please elaborate on that answer a bit more?
- (12) From your perspective, which ideas would you recommend helping develop a better syllabus in your school?
- (13) Are there any resources that you feel necessary that secondary schools in the UAE need to support you and your students?

As we conclude, is there anything else that you would like to add to what you have already said?