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Donna

Donna Pendergast, Editor
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The Triple Effect of Nutrition in Abu Dhabi

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Abstract

The primary objective of this study is to assess the prevalence of obesity among children aged between 5 and 18 years living and schooling within Abu Dhabi, and how nutrition level, physical activities, and creating awareness on food education can impact their lives. One thousand students from an international school in Abu Dhabi were selected to participate in the survey. Three different questionnaires, including Body Image Survey, International Physical Activity Questionnaire, and Rate Your Plate, were used to collect data. Cross-tabulated descriptive statistics revealed that out of the students who were found to be obese, 62.8% were Emiratis, which suggests the high degree of obesity prevalence in the United Arab Emirates. By gender, obesity was more prevalent among females than males. In an attempt to provide possible responses to such nutrition-based problems, the study formulated and tested four hypotheses on nutrition, physical activity, and the creation of awareness. Multivariate regression analysis showed that nutrition levels have a significant negative effect on the prevalence of obesity ($p = 0.015$) and cardiovascular diseases ($p = 0.001$). Physical activity had a significant positive effect on the prevalence of obesity ($p = 0.000$), while the creation of awareness also had a significant positive effect on dietary practices (0.025). In conclusion, the study established the need to boost nutrition education both at family and societal levels, encourage students to involve in physical activities, and create awareness on food choices. It is recommended that educational systems should integrate nutrition education and physical activities in the regular curriculum.

KEYWORDS: NUTRITION, OBESITY, PHYSICAL ACTIVITY, FOOD CHOICES, UAE STUDENTS

Introduction

Nutrition remains one of the most fundamental aspects that define a healthy and satisfying life. Good nutrition, which is fundamentally a healthy and balanced diet, immensely impacts not only health but also the quality of life that people have. An increasing number of nutritionist and health advocates continue to emphasise on the need for people to monitor what they eat as a way to nourish their hunger, maintain energy level, and minimise the chances of developing undesired health conditions, maintain a healthy body mass index, and boost the general immune system (Abdulla Saeed, 2017; Al Rufaye, 2019; Otten et al., 2006; World Health Organization, 2019).

According to Thompson and Amoroso (2014), nutrition can be described to be good if it helps the body to get all the vitamins, minerals, and other nutrients that it needs to ensure the best functionality. Nutritionists have consistently emphasised the need to eat plenty of vegetables, fruits, grains, low-fat milk, lean meats, and other foods with low calories for sustainable body nourishment. However, food insecurity, malnutrition, and obesity continue to be significant challenges that thwart the goal of better health and quality living (Loechl et al., 2019).

Background of the Study

Nutrition is the pillar that defines a healthy person, since it supplies the body with the nutrients it needs to remain healthy. However, the burden of malnutrition is high, especially in the United Arab Emirates (UAE) and other developing countries (Loechl et al., 2019; Mabry et al., 2016). Malnutrition emerges from the imbalance between the intake of energy-giving foods and nutrients-based foods.

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Factors, such as rate stunted of growth, obesity, and lifestyle diseases have been widely used to measure malnutrition (Al Rufaye, 2019). A report shows that about 35% of child mortality in the UAE are caused by malnutrition (Simpson, 2012).

Recent research shows that there is a prevalence of stunted growth, obesity, diabetes, hypertension, and cardiovascular diseases within the UAE (Global Nutrition Report, 2020). World Health Organisation (2019) also reported that 40% of women and 25% of men in the Ajman were obese. Another study found that 29% of deaths in Dubai were a result of cardiovascular diseases with high-risk cardio-metabolic diseases, which are partially relatable to nutritional problems (Al-Shamsi et al., 2019).

Research by Al Anouti et al. (2011) shows that there is a general deficiency of vitamin D among young Emirati adults and related the problem to sun deprivation. According to the study, females tend to avoid sun more than males leading to a higher vitamin D deficiency in females than in males. As such, Al Anouti et al. (2011) exhibited the need to increase Emirati youths' exposure to the sun. Attia and Ibrahim (2012) found that the dressing style among women in UAE can significantly explain the inadequacy of vitamin D among them.

A study by Al Junaibi et al. (2013) found that childhood obesity is prevalent across the age spectrum. They found that male sex, older age, higher parental body mass index, and low dietary intake significantly predict childhood obesity. Another study established that poor dietary habits and sedentary lifestyles lead to non-communicable diseases such as diabetes and cardiovascular complications (Musaiger et al., 2011). According to Abdulla (2017), children whose mothers are well educated and are concerned about their dietary practices have better eating behaviour and thus are less exposed to lifestyle diseases such as diabetes type 2. All these data prove that there is a serious nutritional problem in UAE that needs to be addressed as a way to bolster public and individual health as well as the overall quality living.

The prevalence of malnutrition and undernutrition is attributable to numerous factors. The leading cause of poor diet in many developing countries is limited access to food and food insecurity, which drive people to opt for poor and unhealthy foods (Dudley, 2017). Such food options, in most cases, are energy giving and aim at sustaining life rather than promoting proper dietary practices. However, this might not be the case for the UAE. The country currently reported a zero percent poverty rate in Abu Dhabi and Dubai, meaning that almost all people in the regions are living above 73AED per day (The United Arab Emirates, 2020).

Nonetheless, there is high consumption of fatty and sugary foods and snacks in the country, which have considerably increased the risk of cardiovascular diseases, obesity (Ng et al., 2016). According to some reports, there are various bad dietary practices, including consumption of a lot of salt, eating of foods with high-calorie volumes, and little consumption of vegetables and grains are significant issues to reckon in the country (Bardsley, 2019). As such, many people in the area are essentially malnourished, reducing the body's ability to guard itself against diseases. The malnutrition is also directly linked to the expanding rate of obesity, which continues to be a significant threat to the country (Ekelund et al., 2016).

Low consumption of vegetables and fruits, consumption of energy-dense foods, low water intake and high intake of processed drinks and foods are precursors of not only obesity but also low body nutrient levels. Vegetables and fruits have high fibre content, which helps in digestion and absorption of nutrients. Physical inactivity, which is due to low participation in sports, sedentary lifestyle, and disrupted sleep patterns, also leads to nutrition-related disorders and diseases (Brownell & Walsh, 2017; Mabry et al., 2016). Physical activity and an active lifestyle increase the metabolic rate to improve appetite and burn excess body fats.

There has been a continuing argument that some nutritional problems can simply be addressed by creating awareness to ensure that people are well-informed about the potential impacts of their food choices (Gamburzew et al., 2016). In many instances, people make poor decisions about what they choose to eat primarily because they have no idea about the potential health problems that their choices might result in (Otten et al., 2006). The majority at risk are students who end up eating foods with no nutritional value (Thompson & Amoroso, 2014). This translates to stunted growth, obesity, and lifestyle diseases among children and youths. Hajat et al. (2012) noticed that the burden of non-communicable diseases in UAE, which is partially related to poor nutritional practices, is high. They

put emphasis on the need to implement lifestyle changes, develop cardiovascular screening for the whole population, change health policies and empower communities.

Problem Statement

Proper nutrition is an indispensable determinant of a happy, healthy, and satisfying living. With proper dietary practices, attaining desirable body weights, which reduces exposure to heart diseases, poor bone density, diabetes, and some cancers, is attainable. Good nutrition is also linked with the sustainable health of the next generation, improved memory, better sleep, a balanced social life, and a better mood.

However, malnutrition continues to be a significant problem that thwarts the health standards of various global regions, especially the UAE. The impact of poor feeding trends is felt by the individuals, the nation, and the society at large. At the individual level, people are exposed to lifestyle diseases, low body and mind capacities, and reduced socialisation. At the society or national level, the country has to bear a significant burden of paying medical expenses of the students suffering from malnutrition and other diseases resulting from poor feeding (Williams et al., 2015). This study aims at assessing the prevalence of obesity, assess nutrition awareness, physical activity, and sleep patterns among Abu Dhabi children to devise strategies to best address the nutritional problems determined within the targeted population

Objectives and Hypotheses

Objectives of the study

- To assess the prevalence of obesity in children in Abu Dhabi.
- To determine the dietary patterns of children in Abu Dhabi.
- To evaluate the awareness of proper nutrition in children in Abu Dhabi.
- To evaluate the level of physical activity of children in Abu Dhabi.
- To determine the prevalence of cardiovascular diseases and nutrition-related diseases and disorders among children in Abu Dhabi.

The Hypothesis of The Study

The study will adopt the following null hypotheses to guide the results.

- H1: There is no significant relationship between nutrition and the prevalence of obesity among children in Abu Dhabi.
- H2: Physical activity has no significant relationship with the prevalence of obesity among children in Abu Dhabi.
- H3: There is no significant relationship between nutrition and the prevalence of cardiovascular diseases.
- H4: The creation of awareness has no significant effect on the adoption of proper dietary practices among children in Abu Dhabi.

Significance of the Study/ Novelty Statement

There is an increasing prevalence of obesity, cardiovascular diseases, and nutrition-related diseases, which presumably result from physical inactivity, increased intake of fatty foods, urbanization, and high income (Al Rufaye, 2019). The disorders can lead to severe complications and even death. This puts a strain on the government and the society at large. Researching and reflecting on nutrition as a major topic would provide an opportunity to address some of the imminent health and social concerns that continue to thwart numerous lives, especially in Abu Dhabi. Most of the existing studies which have explored a related area have been focusing on the nation at large or the Emirate region in general. This is the first study to narrow down its scope specifically to children in Abu Dhabi, which creates the opportunity to gain a deeper understanding of the population.

Literature Review

Nutrition is a significant topic that underscores a healthy living and proactive life. Understanding the dynamics and developing a holistic view of food and the patterns in which people consume them is, therefore, an indispensable responsibility in fostering healthy families, communities, societies, and future generations. Through access to necessary nutrients, the body can manufacture chemicals that bolster its protection against diseases and foster growth and development.

Nutrients are chemicals derived from the foods that people eat. Once the food is metabolised, the nutrients are absorbed by the body to carry various functions. Proper nutrition leads to good health, normal development, and high quality of life (Brownell & Walsh, 2017). On the contrary, poor nutrition is associated with malnutrition, undernutrition, and overnutrition, which causes stunted growth, chronic diseases, cardiovascular diseases and other nutrition-related disorders (Ng et al., 2011, p. 7). Research shows that low fruit and vegetable intake causes high risks of cancer, while a low intake of dietary fibre causes weight gain (Thompson & Amoroso, 2014). In this section, the focus is on theories and empirical studies that form the basis of this research.

Theoretical Review

This study is grounded on two theories, including the family systems theory and the agency-structure sociological theory. Developed by Dr Murray Bowen, the family system theory posits that it is difficult to understand individuals in isolation (Russell, 2019). According to the theory, human behaviours can exhibit much complexity when assessed in isolation compared to when assessed through families as the smallest social fabrics. Since a family system is highly interdependent, and individuals greatly interconnect with each other, none of the individuals can efficiently be understood in isolation (Russell, 2019). Every family has specific rules, norms, and practices that cause the members of the family to think, develop emotions, behave in some predictable way, and maintain the same behavioural patterns that are consistent with the system.

The familial cohesion emphasised by the family system theory suggests that an individual's demand for food, food choices, dietary changes, and approaches to other aspects of nutrition can never be understood at an individual level (Cole et al., 2000). Thus, to understand nutrition among children in Abu Dhabi, developing an approach that would aim at assessing the holistic family system would be necessary. The family systems can be understood from the five key concepts, including emotional triangles, differentiating of self, family protection process, as well as emotional cut-off and multigenerational transmission process (Russell, 2019).

The differentiation of self, which is one of the key concepts, refers to the sense of identity and ability to function independently. Students are dependent and are emotionally bound to the family and society in which they live and interact physically and emotionally. These, in reaction, affect the person's quality of life. Children's lives depend on their parents. Their parents affect their health outcomes by the way they transfer their emotions to the children (Sheikh-Ismail et al., 2009, p. 33). In agreement with the theory, Thompson and Amoroso (2014) reported that children consume that which is provided by their parents, which means that the life of the children is significantly correlated with that of the parents. The interaction between parents also affects their children (Dudley, 2017).

Sharara et al. (2018) argue that if parents seek out each other and discuss their children's health outcomes, they are less likely to suffer from nutrition-related diseases. The parent can prevent the triple effect (malnutrition, undernutrition, overnutrition) by discussing among themselves and other society members how to prevent their children and grandchildren from eating too much fat, sugar, and calorie dense food, and provide adequate nutritionally balanced food promptly. The children should not consume too little calories, be subjected to insufficient nutrients, or consume too much to make them obese. The extent to which such projections are possible can only be understood by examining families and their structures.

The second theory considered for this study is the agency-structure sociological theory. According to the theory, human behaviours and actions are greatly controlled by an interaction of various social standards and values, power, and meaning (Loyal, 2012). The nexus among the different facets of society creates a structure that compels individuals to behave and act in a manner consistent with the structure. Generally, various structures within the society influence individual behaviours, including socioeconomic stratification, institutions and social networks, and the community or

professional standards (Loyal, 2012). Anthony Giddens, who is one of the initial proponents of the theory, mentioned that maintenance and adaptation of structures are achievable through agencies (Loyal, 2012). Individuals who are perceived as agents are expected to behave and act in a manner that is consistent with the structure. Thus, any social problem or issue can be understood by examining the competing views between structures and agents both at macro and micro perspectives.

Therefore, the agency-structure theory suggests that questioning students and their families to understand the triple effect among children in Abu Dhabi might be abstract, thereby failing to give the wider perspective of the issue as per the social structure. It calls for the need to examine the structure at each of the three mentioned levels in order to uncover the holistic issues that are related to nutrition. Thus, sticking to the familial structure theory to develop the study framework might be a potential limitation that might inhibit the holistic view of the problem.

Empirical Review

Nutrition Awareness and Intervention

Numerous researchers have examined the creation of nutritional awareness and intervention as a strategy to combat the triple effect of nutrition. Alkerwi et al. (2015) carried out a study to examine the link between nutritional awareness and quality. After collecting data from 1,351 participants aged between 18 and 69, they calculated scores on energy density, recommended compliance, and dietary diversity (Alkerwi et al., 2015). From the results, it was evident that people who attribute high importance on their food choices and gaining the related knowledge are less likely to focus their diet on foods with high energy density and more likely to diversify their diets and adopt adequate dietary recommendations. Therefore, they concluded that creating nutritional awareness can significantly and directly improve diet quality (Alkerwi et al., 2015). From the conclusion, it is evident that creating awareness is a palpable proposition that can significantly assist people in adopting healthy nutritional practices.

In essence, people must be aware of food categories in the market and understand how they might impact their health or holistic life before making an informed purchase. Gamburzew et al. (2016) found that a marketing intervention aimed at making less expensive foods with good nutritional value more visible and attractive in the market can significantly improve individual's food purchasing behaviours, especially among people with deprived income. The researchers had initially created a marketing intervention of the inexpensive food products and assessed customer awareness about them. From the study, creating a market awareness can significantly improve food choices at affordable costs.

Making appropriate food and dietary choices are essentially significant in ensuring healthy and sustainable growth of young children, Black et al., (2015) examined how integration of proper nutrition impact child development interventions. After examining cases of children aged between zero and five years, they found that children who have adequate nutrition and are well nurtured have the greatest opportunity to develop long-life sustainable health and have the best chances to thrive in their learning efforts. They further found that sustainable adult health is deeply rooted in the diets during early childhood, right from conception to age five. Consistent with this finding, Barker et al. (2018) held that parents' nutritional status before conception significantly reflects on the growth, development, and health of their young ones. Therefore, developing interventions that would improve parents, especially women's nutrition, before and after conception and lactation, is critical in exacerbating sustainable health in future generations.

Determinants of Healthy Eating

The factors that influence what people, especially students, buy and eat are complex psychosocial issues that are relative to time, place, and the individual. Pescud et al. (2018) developed a framework for healthy and equitable eating in which they argued that various factors influence what people eat and how food is distributed across various social sects. They found that policies and psychosocial factors such as housing, employment, transport, education, environmental systems, as well as urban planning, are significant determinants of eating patterns. From their finding, it can be argued that people who have safe and comfortable houses, are protected from conditions that might jeopardise their food access and consumption, are well educated, have a reasonable income, and live in places

which emphasise availability and accessibility of healthy food options generally have healthy eating habits.

Arcila-Agudelo et al. (2019) also examined the determinants of healthy eating patterns among children and adolescents in the City of Mataro, Spain. After carrying out a cross-sectional study encompassing 1177 participants aged between 6 and 18 years who live in the targeted area, the researchers found that factors such as mothers' educational level, regular physical activity, and children's level of education positively influenced healthy eating patterns. Interestingly, they also found that children whose parents have higher disposable incomes are more likely to adopt unhealthy eating practices. This seems to be practical mostly among rich Emiratis who spend much time at work leaving their children with maids who know less about healthy diets and pays little attention on what children eat (Arcila-Agudelo et al., 2019). As a consequence, children grow with little knowledge about their food choices as well as their general environment. As a response to this income-related problem, it can be projected that awareness creation can be an effective mediating factor critical in ensuring that wealthy families use their resources to opt for healthier food options.

In addition, the iniquities that exist in healthy eating practices need to be addressed. Friel et al. (2017) developed a framework of the key determinants of healthy eating equities or iniquities. According to them, the core mechanisms of healthy eating depends on accessibility, availability, acceptability, and affordability of healthy foods. Ensuring healthy eating patterns demands that all these four mechanisms are grouped and improved in tandem with each other for better nutritional outcomes.

Instead of attributing healthy eating determinants to a purely external factor, Chansukree and Rungjindarat (2016) contended that various intrinsic factors drive eating patterns. They found that factors such as intentions, self-efficacy, perceived benefits, and outcome expectations significantly influence food choices. Dudley (2017), also argued that individual tastes and preferences are innate. Taste and choice can be learned or unlearned. People tend to like food depending on a pleasant feeling and satiety. Students tend to quickly learn to like foods with high levels of fats and sugar, foods offered as rewards, and foods added with salt (Chansukree & Rungjindarat, 2016). Practical experiences also have a great impact on what students eat. The fact that there are no culinary classes in UAE public schools means that students are unable to learn how to prepare meals, which can potentially lead to unhealthy practices.

Prevalence of Obesity

Obesity is a medical condition that results from excess body fat. Medics suggest that person might be considered obese if the body mass index is 30 or more (Williams et al., 2015). Obesity and overweight stem from the consumption of excess calories, sedentary lifestyle, lack of enough sleep, and endocrine disruptors, among other factors. According to Williams et al. (2015), obesity increases the risk of cardiovascular diseases, type 2 diabetes, obstructive sleep apnoea, osteoarthritis and depression. It can be prevented by eating controlled portions of a balanced meal, which may contain vegetables, fibre, and low fatty foods. Physical activity increases energy expenditure; therefore, it helps manage body weight (Ekelund et al., 2016). Medications can also be administered, but they work best if they are combined with other factors like proper diet and exercise. Surgery is the last resort where stomach volume is decreased to reduce the number of nutrients absorbed in the body. Obesity remains a major problem in UAE across demographics.

A study that was carried out by Garemo et al. (2018) on preschool eating habits of children in Abu Dhabi and how it related to their weight established that the prevalence of malnutrition, wasting, and overweight was higher among Emirati children when compared to non-Emiratis. According to the study, malnutrition and overnutrition are significant problems among Emirati children and is highly linked to lifestyle rather than genetics. A preceding study had also found that dietary and activity habits are poor among Emirati adolescents compared to non-Emiratis living in the country (Haroun et al., 2017). A related study by Al-Yateem and Rossiter (2017) that studies adolescents in Sharjah aged between 9 and 13 years found that only a third of the population has healthy eating behaviour. This suggests that the remaining population are more exposed to unhealthy eating behaviours hence exhibited higher chances of being obese. As a response to these findings, there is a need to create and amplify policies that aim at improving child health interventions and enhancing awareness on nutritional choices.

Another study by Razzak et al. (2017) that examined the extent to which obesity is prevalent among Emiratis showed that obesity is prevalent in UAE at a rate of 16-28.4%, and that adult females were more likely to be obese compared to their male counterparts (Razzak et al., 2017). They recognised that obesity generates a significant burden to society in terms of healthcare costs and reduced productivity.

The link between poor nutrition and dietary practices and obesity cannot be disassociated. There is a need to establish strong interventional approaches that focus on boosting healthy dietary practices as a way of reducing obesity cases and related impacts. The literature review analysed has cast much light on nutritional practices and patterns, how they affect various social constructs, and how well the related issues and concerns can be understood. However, none of the sources analysed have exclusively delved into malnutrition, undernutrition, and overnutrition among school-going children in UAE with specific reference to Abu Dhabi. The subsequent sections are efforts to address this gap.

Methodology

Research Design

A quasi-experimental research design was selected in performing the study that would provide responses to the outlined hypotheses. The main reason that underlies the selection of the design is the fact that it is interested in establishing causal-effect relationships among variables (Williams et al., 2015). Consistent with the goal of a quasi-experiment, establishing causal relationships between various independent variables, including nutrition and physical activities and dependent variables, including healthy eating, the prevalence of obesity, nutritional awareness and intervention, and cardiovascular diseases. The experimenter did not manipulate the independent variables and measured their effects on the dependent variable. Also, pre-existing groups were randomly selected for this study instead of creating new groups. For the case of this study, a group was a school with students playing the role of the group members to be studied.

Participants

Generally, the study collected data from 1000 participants aged between 5 years and 18 years. To be selected for the survey, the prospective participant had to be a student aged above 5 years but less than 19 years, schooling in an institution within Abu Dhabi, and can willingly and rationally take part in the survey. Any potential respondent who did not meet any of the above criteria was disqualified. The participants were selected randomly from an international school in Abu Dhabi.

Data Collection

The retrospective data collection approach was selected to examine the participant's nutrition and activity levels and how likely they relate with various outcomes, including healthy eating, obesity, nutrition awareness, and lifestyle diseases due to poor diet. Three different questionnaires were distributed to each of the selected participants. The first questionnaire was the Body Image Survey that is used to assess how the participants perceived their body image and efforts they adopt to attain the perceived or desired body image. The questionnaire was extracted from research done by the Centre for Disease Control and Prevention and the National Centre for Injury Prevention and Control (Dahlberg et al., 2005). The second survey was the International Physical Activity Questionnaire (IPAQ) used to assess the physical activities that students do routinely. It was first scientifically assessed and published by Booth (2000). The short format version of the IPAQ was adopted for this study. The questionnaire will be useful in collecting data for relating physical activity and dependent variables. The last questionnaire, named Rate Your Plate and has 25 items, was used to assess what people eat and the rate at which they eat. Created by Gans et al. (2000), the questionnaire was critical in relating nutrition, both at individual and family levels, and the dependent variables. Direct data on nationality, gender, date of birth, height, weight, BMI and BMI centile, BMI were all taken by a qualified nurse.

Research Procedure

The data collection process began by briefing the participants of the goal of the research, why their involvement is critical to the achievement of the goals of the research, and the efforts that are in place to foster privacy and confidentiality of personal information. They were then supplied with a

consent form, which, upon signing, confirmed that the participants were willing to consciously and truthfully take part in the survey. All the participants signed the consent form. The three questionnaires were then distributed to each of the participants at their respective schools. It took between 30 and 45 minutes for each participant to complete filling the surveys. The qualified nurse played a critical role in assessing participants and their BMI levels. Upon collection, the data from the survey were summarised into excel tables and converted into .sav files for SPSS analysis. Using questionnaires that are scientifically devised and approved and ensuring the consent of participants provided sufficient validity and reliability of the study.

Data Analysis

The data summaries were imported into the Statistical Package for the Social Sciences version 26 (SPSS v26) for descriptive and inferential analyses. Measures of central tendency, including mean and standard deviation, were used to describe various participant characteristics, including gender, age, nationality, weight, and weight. Multivariate regression analysis was then undertaken to establish the relationships that might exist between the independent variables and the dependent variables, as stated in the hypotheses at a significance level of 95%. The null hypothesis was only to be rejected if $p > 0.05$.

Results

Descriptive Statistics

This study focused on assessing the prevalence of obesity, assess nutrition awareness, and physical activity among Abu Dhabi children. A total of 1000 students, including 398 females and 602 males recruited from an international school in Abu Dhabi, took part in the survey. Thus, 39.8% of the respondents were females, while the remaining 60.2% were males. All the participants were aged between 5 and 18 years. The main focus of the descriptive statistics was on the weight of the respondents. Analysis of the BMI centile results in Table 1 showed that 512, equivalent to 51.2% of the participants, had a healthy weight.

Table 1: Classifying Participants by Weight

BMI CENTILE	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	66	6.6	6.6	6.6
Healthy Weight	512	51.2	51.2	57.8
Obesity	149	14.9	14.9	72.7
Overweight	232	23.2	23.2	95.8
Severe Thinness	3	0.3	0.3	96.2
Thinness	28	2.8	2.8	99.0
Very Thinness	10	1.0	1.0	100.0
Total	1000	100.0	100.0	

23.2% of the respondents were overweight, while 14.9% were obese. 6.6% of the participants did not provide any data that could help in calculating BMI, while the remaining 4.1% were thin, very thin, or severely thin. Thinness point to a possibility of undernutrition while overweight and obesity might be related to overnutrition. Both of the cases might suggest malnutrition.

Characterising weight by gender generated some fuzzy results. Generally, more male participants were obese (18.4%) compared to female (9.5%). Interestingly, the number of females that exhibited overweight (27.8%) was more than the comparative males (20.1%). 56.5% of female participants had healthy weight while the rate was 47.7% for males. The percentages were calculated by dividing the respective weight counts by gender-based totals, as presented in Table 2. The data suggest that the triple effect of nutrition was likely more impactful on the female than male participants.

Table 2: Weight by Gender

BMICENTILE * GENDER Crosstabulation	Female	Male	Total
	21	45	66
Healthy Weight	225	287	512
Obesity	38	111	149
Overweight	111	121	232
Severe Thinness	0	3	3
Thinness	3	28	28
Very Thinness	0	10	10
Total	398	602	1000

The participants were of different nationalities. Out of the 1000 participants, 426 were Emiratis. Participants whose origins were UK, USA, Canada, India, and Egypt were 149, 80, 38, 35, and 31, respectively. Thus, Emiratis presented 42.6% of the total participants. Out of the participants who were obese, 62.8% were Emiratis. Thus, the triple effect of nutrition is more impactful among Emiratis than all other nationalities combined. Generally, the greatest percentage of the participants were either the healthy weight, obese, or overweight. Cases of thinness were trivial across nationalities.

Table 3: Weight by Nationality

BMICENTILE BY NATIONALITY	Healthy Weight	Obesity	Over-weight	Severe Thinness	Thinness	Very Thinness	(blank)	Grand Total
Algeria	10	0	0	0	0	0	0	10
Australia	3	0	7	0	0	0	7	17
Bangladesh	0	7	0	0	0	0	0	7
Canada	28	0	10	0	0	0	0	38
Comoros	3	0	3	0	0	0	0	7
Egypt	21	3	7	0	0	0	0	31
France	3	0	0	0	0	0	0	3
Germany	0	0	3	0	0	0	0	3
Greece	3	0	10	0	0	0	0	14
India	28	3	3	0	0	0	0	35
Iran	0	3	3	0	0	0	0	7
Iraq	0	3	0	0	0	0	0	3
Ireland	3	0	0	0	0	0	3	7
Jordan	21	0	3	0	0	0	0	24
Malawi	0	0	3	0	0	0	0	3
Netherlands	3	0	0	0	4	0	0	7
New Zealand	3	0	3	0	0	0	0	7
Oman	7	0	14	0	0	0	0	21
Pakistan	10	3	0	0	0	0	0	14
Philippines	3	0	0	0	0	0	0	3
Russia	3	0	0	0	0	0	3	7
Saudi Arabia	0	3	10	0	0	0	3	17
South Africa	3	3	7	0	0	0	3	17
Sri Lanka	3	0	0	0	0	0	0	3

BMICENTILE BY NATIONALITY	Healthy Weight	Obesity	Over-weight	Severe Thinness	Thinness	Very Thinness	(blank)	Grand Total
Sudan	7	0	10	0	0	0	0	17
Thailand	3	0	3	0	0	0	0	7
Tunisia	3	0	0	0	0	0	0	3
Turkey	3	0	0	0	0	0	0	3
UAE	170	94	97	3	24	10	28	426
UK	97	21	21	0	0	0	10	149
USA	59	3	10	0	0	0	7	80
Venezuela	3	0	0	0	0	0	0	3
Zimbabwe	3	0	0	0	0	0	0	3
Grand Total	512	149	232	3	28	10	66	1000

Inferential Statistics

Multivariate regression analysis generated various results from the collected data.

Table 4: The Summary of the Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.750 ^a	.563	.554	5.62074

a. Predictors: (Constant), nutrition, physical activity, awareness creation

The multiple correlation coefficient ($R = 0.563$) in Table 4 shows that there is a good level of prediction between the dependent variables and the independent variables. The R square ($R^2 = 0.563$) shows that the independent variables can explain 56.3% of the variabilities within this study dependent variables.

Table 5: Nutrition and physical activity vs. Obesity

Model 1	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	87.250	6.127		13.668	0.000
Nutrition	-.169	0.065	0.177	-2.721	0.015
Physical Activity	-.122	0.045	0.259	-3.882	0.000

Dependent Variable: Obesity

From Table 5, nutrition significantly affects the prevalence of obesity ($p < 0.05$). However, the effect is negative ($B = -0.169$). The Beta value means that unit increase in nutritional patterns would reflect into 0.169 units reduction in the prevalence of obesity. On the same note, Physical activity negatively ($B = -0.122$) and significantly affects the prevalence of obesity ($p < 0.05$).

Table 6: Nutrition vs. cardiovascular diseases

Model 1	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	65.971	9.552		17.396	0.000
Nutrition	-.258	0.047	0.264	-5.342	0.001

Dependent Variable: Cardiovascular Diseases

Nutrition and cardiovascular diseases were also related at a significance level of 95%. Results, as indicated in Table 6, show that nutrition levels negatively and significantly affect the prevalence of cardiovascular diseases among children in Abu Dhabi ($p < 0.05$; $B = -0.258$). For every unit of positive adjustment in nutrition and dietary patterns, the prevalence of cardiovascular diseases decreases by 0.258 units.

Table 7: Creation of Awareness vs. Dietary Practices

Model 1	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	59.782	5.285		10.325	0.000
Awareness Creation	.387	0.087	0.502	-2.461	0.025

Dependent Variable: Dietary Practices

The last test was on the effect of creating awareness on dietary choices on dietary practices. The result shows that creating awareness of nutrition and dietary choices positively and significantly affects dietary practices ($p < 0.05$; $B = 0.287$).

Discussion

The study aimed at testing four hypotheses to assess the prevalence of obesity and cardiovascular diseases as well as dietary practices among students in Abu Dhabi and how well nutrition, physical activities, and awareness creation can help to address or improve these conditions. This section discusses how the study's results respond to each hypothesis.

Nutrition and Prevalence of Obesity

The first null hypothesis held that there is no significant relationship between nutrition and the prevalence of obesity among children in Abu Dhabi. From the results, the p-value is 0.015 ($p < 0.05$). As such, the null hypothesis is rejected and the alternative adopted. Nutrition levels significantly affect the prevalence of obesity. This means that adopting approaches that would improve nutritional levels both at family levels and societal levels would significantly reflect the reduced prevalence of obesity among children schooling in institutions within Abu Dhabi.

Physical Activity and Prevalence of Obesity

The second hypothesis was that physical activity has no significant relationship with the prevalence of obesity among children in Abu Dhabi. The results returned a p-value of 0.000 ($p < 0.05$), leading to the rejection of the null hypothesis. Thus, physical activities strongly and significantly influence the prevalence of obesity among children in Abu Dhabi. As such, children should be encouraged to be involved in more physical activities is a significant step in reducing the prevalence of obesity.

Nutrition and Prevalence and Cardiovascular Diseases

The third null hypothesis postulated that there is no significant relationship between nutrition and the prevalence of cardiovascular diseases. The regression for the two variables returned a p-value of 0.001 ($p < 0.05$), showing that the relationship between nutrition levels and prevalence of

cardiovascular diseases is indeed significant; thus, reject the null hypothesis and adopt the alternative. The prevalence of cardiovascular diseases among school children aged 8-20 can significantly be reduced by encouraging good nutrition patterns, both at family and societal level.

Creation of Awareness and Dietary Practices

The last null hypothesis held that creating awareness on nutritional choices and patterns has no significant effect on the adoption of proper dietary practices among children in Abu Dhabi. From the regression analysis, the relationship is significant ($0.025=p<0.05$), as such, reject the null hypothesis. Creating nutritional awareness in schools within Abu Dhabi can significantly dietary practices among the children leading to more healthy and sustainable youths and future adults. The main limitation of the study is that the participants were selected from a single institution. With this, it is difficult to analyse the impact of different environments on the students' nutritional standards.

Conclusion

The study has assessed the prevalence of obesity and cardiovascular diseases as well as dietary practices among students in Abu Dhabi, and how well nutrition, physical activities, and awareness creation can help to address or improve these conditions. The study shows that the triple effect of nutrition, including malnutrition, undernutrition, and overnutrition, exceedingly affects Emirati children, especially females, as compared to all students from other nationalities combined. Students preferred sodas, fast foods, and high sugary foods that have a negative impact on their health.

The result implies that there is a need to intensify efforts both at family and society levels to implement strategies that would bolster the health and holistic lives of the children. The study has shown that improving nutrition levels, encouraging the students to involve in more physical activities, and creating awareness, especially on food choices, can significantly reduce the prevalence of obesity and cardiovascular diseases and improve dietary practices. This can best be achieved by introducing nutrition education in schools.

As part of this study, it is recommended that schools take the leading role in integrating practical culinary classes and activities founded on scientific nutrition and physical education in their curriculum, and the education systems should establish ways to support and reinforce the educational programs. Agencies and organisations with interest in nutrition, diet, and healthy living should take an active role in creating awareness of food choices and assist families in accessing proper and affordable diets. Future research should delve into frameworks through which the recommendations can be attained.

Author biography

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Food literacy education in Manitoba, Canada and Victoria, Australia: a comparative pilot study

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Abstract

Home Economics Food and Nutrition (HEFN) courses offered through schools have the potential to provide youth with food literacy (knowledge, attitudes and skills) to manage in the contemporary food environment. Little is known, however, about the capacity of current HEFN programs to foster food literacy. While the existence of such courses varies between schools, regions and countries, many students in the province of Manitoba, Canada and the state of Victoria, Australia are enrolled in HEFN programs in grades 7 and 8 (students aged 11-13 years). This study sought to explore the feasibility of HEFN programs to support the development of food literacy competencies in Manitoba and Victoria through curricula document reviews and qualitative interviews with home economics teachers. Curricular mapping compared the Manitoban Specific Learning Outcomes (SLOs) and Victorian Content Description Codes (CDCs) from curricula documents with a framework of food literacy competencies for youth (Slater, Falkenberg, Rutherford, & Colatruglio, 2018). Semi-structured interviews were conducted with eight teachers. Curriculum mapping revealed that not all food literacy competencies were present in curricular documents. The interviews showed that teachers mainly focused on developing functional food literacy competencies, while higher-ordered competencies, such as the relational and systems competencies, were less obvious. The discussion considers four areas in which to improve the development of food literacy competencies: (1) curricular structure and content; (2) teacher pedagogy and training; (3) teacher resources for supporting programming; and (4) time allocated to HEFN programs. Unless students receive HEFN in higher years, their food literacy competencies established in grades 7 and 8 may not be sufficient for healthy living in adulthood.

KEYWORDS: FOOD LITERACY, NUTRITION EDUCATION, CURRICULUM, HOME ECONOMICS, HUMAN ECOLOGY

Introduction

Over one-quarter of Manitoban (Government of Manitoba, 2014) and Victorian (Victoria State Government, 2015) adolescents (aged 11-17 years) are overweight or obese. Adolescents with excess weight tend to become adults with excess weight (Simmonds, Llewellyn, & Woolacott, 2015) and are at greater risk for developing non-communicable diseases like type II diabetes, cardiovascular disease, and some cancers (Reilly & Kelly, 2011). Diets of adolescents in Manitoba and Victoria consist of high proportions of ultra-processed foods (Victoria State Government, 2015; Moubarac, J.-C., Batal, M., Louzada, M. L., Martinez Steele, E., & Monteiro, C. A., 2016), the regular consumption of which has been associated with excess weight gain and obesity (Lobstein et al., 2015; Lobstein, Jackson-Leach, Moodie, Hall, Gortmaker, Swinburn, ... McPherson, 2015; Malik, Popkin, Bray, Despres, Willett, & Hu, 2010; Popkin, Adair, & Ng, 2012; Rao, Vijayapushpam, Subba Rao, Antony, & Sarma, 2007). In addition to high consumption of ultra-processed foods and sugar-sweetened beverages, Manitoban and Victorian adolescents do not meet the recommended servings of fruits and vegetables (Government of Manitoba, 2014; Victoria State Government, 2015).

Paired with poor dietary intake is the observation of a downward trend in adolescent food skills. “Food skills” are a collection of knowledge, information, and skills that involve the purchasing,

Fife, D., Slater, J., Fordyce-Voorham, & Worsley, A. (2020). Food literacy education in Manitoba, Canada and Victoria, Australia: a comparative pilot study. *International Journal of Home Economics*, 13(2), 16-28.

preparing, and cooking of food materials to produce healthy, tasty meals (Fordyce-Voorham, 2009a; Fordyce-Voorham, 2011). Engagement in food-related activity has been associated with improved diet quality (Larson, Perry, Story, & Neumark-Sztainer, 2006). Laska, Larson, Neumark-Sztainer, & Story (2011) revealed that those who have positive food-related experiences in adolescence have improved food skills and confidence in the kitchen in adulthood. However, the contemporary “nutrition transition” (Popkin et al., 2012) has transformed the ways in which family meals are prepared, cooked, and shared (Colatruglio & Slater, 2014). Little time spent on cooking unprocessed or minimally processed food at home (Moubarac et al., 2016) has contributed to loss of individual food knowledge and skill, and transfer of knowledge and skill from caregiver to adolescent (Berge, MacLehose, Loth, Eisenberg, Fulkerson, & Neumark-Sztainer, 2012; Laska et al. (2011); Lu, Huet, & Dube, 2011; Pelletier & Laska, 2012). It is reasonable therefore to suggest that if adolescents are introduced to positive food-related experiences in grades 7 and 8, and build on these experiences through food and nutrition education in higher grades, that these skills are likely to be transferred into adulthood.

Education aims to build human capacity and agency which positions schools as catalysts for food skill development. Classes that teach food skills in Manitoba and Victoria come under a variety of nomenclature, including human ecology, food technologies, or food studies, although for this study “home economics food and nutrition” (HEFN) will encompass these practical skill programs (Slater, 2013). The greatest proportion of students enrolled in HEFN classes occurs in the middle year grades 7 and 8 in Manitoba, Canada (Slater, 2013) and Victoria, Australia (Ronto, Ball, Pendergast, & Harris, 2017a). Subsequently, HEFN courses become elective options in grades 9 to 12 and are prone to being cut from schools’ offerings as more optional subjects are introduced (Ronto et al., 2017a). As enrollment of HEFN programs are the greatest in grades 7 and 8, their positioning in the development of food skills is of interest.

Several scholars have positioned food skills within the broader, emerging construct of “food literacy” (Pendergast & Dewhurst, 2012) (Cullen, Hatch, Martin, Higgins, & Sheppard, 2015). Vidgen & Gallegos’ (2014) describe food literacy as “the scaffolding that empowers individuals, households, communities or nations to protect diet quality through change and strengthen dietary resilience over time”. Food literacy is thought to capture a broader scope of understanding of the attributes required for eating within a complex modern foods system (Slater, 2017). Slater organizes food literacy competencies into three categories: functional, relational, and systems (Slater et al., 2018). Functional competencies are similar to Fordyce-Voorham’s “food skills”, involving choosing, preparing, and cooking food (Fordyce-Voorham, 2009b). Relational competencies, like finding joy and meaning through food and eating, demonstrate foods’ capacity for well-being. Systems competencies, such as understanding equity and sustainability for food systems, recognizes foods’ relation to the natural environmental and global markets (Slater et al., 2018). These competencies formulate the framework “Food literacy competencies for young adults (Slater et al., 2018).” This framework provides an opportunity for examining how extensively the recently revised Manitoban Human Ecology and Victorian Home Economics curricula include food literacy issues. However, despite this evolved thinking, barriers prevail that influence the quality of HEFN programming (Ronto et al., 2017a; Slater, 2013), which questions programs’ and facilitators’ ability to teach and develop food literacy competencies. It is in this context that this exploratory study aimed to investigate the extent to which food literacy competencies are integrated into Manitoban and Victorian grades 7 and 8 HEFN curricula and teacher implementation of programming.

Methods

The research is composed of two complementary parts: curricular mapping and in-depth interviews with home economics teachers. Data was collected in Victoria, Australia and Manitoba, Canada. Ethical approval for this research was provided by the University of Manitoba and Deakin University.

Curricular mapping

In Manitoba, HEFN programming is organized in the document *Middle Years Human Ecology: Manitoba Curriculum Framework of Outcomes* (grades 5 through 8) (Government of Manitoba, 2015). In Victoria, content from the *Design and Technologies* (Victoria Curriculum and Assessment Authority, n.d. a) and *Health and Physical Education* curricula (grades 7 and 8) (Victoria Curriculum and Assessment Authority, n.d. b) are the prescribed materials for HEFN programming (Home Economics Victoria website, n.d.). Specific Learning Outcomes (SLOs) from the Manitoban curriculum and

Content Description Codes (CDCs) from Victorian curricula provide explicit descriptions and scaffolding for the application of HEFN programming. SLOs and CDCs provide explicit descriptors of what content make up HEFN programming. Slater et al.'s 2018 framework *Critical Food Literacy Competencies for Young Adults* illustrates components of food literacy that are deemed essential for young adults. Thus, SLOs and CDCs were mapped against Slater et al.'s framework to determine the status of food literacy principles in the respective curricula.

Participants

Five Manitoban and three Victorian HEFN teachers participated in the interviews. Teachers were from different school systems which use their provincial/state HEFN curriculum to cover variations in programming. Participants were recruited via convenience sampling, and varied in age and years of experience teaching HEFN programs (Table 1). No participants identified as males. Inclusion criteria were that teachers must have been teaching grades 7 and/or 8 HEFN at the time of the interview. An introductory statement about the research was given to teachers and their consent was provided.

Table 1: Participant Demographics

Home economics teachers	<i>n</i> = 8 (%)
Gender	
Women	8 (100)
Age in years	
20–29	1 (12.5)
30–44	4 (50)
45–59	2 (25)
60+	1 (12.5)
Years of experience teaching HEFN	
1–5	1 (12.5)
6–10	3 (37.5)
11–15	1 (12.5)
16–20	2 (25)
Over 20 Years	1 (12.5)
School system	
Provincial (MB)	5 (62.5)
State (VIC)	1 (12.5)
Catholic (VIC)	1 (12.5)
Independent (VIC)	1 (12.5)
HET training	
Tertiary education in HEFN	7 (87.5)
Other teacher qualifications	1 (12.5)

Interviews

Semi-structured interviews were conducted to explore the home economics teachers' (HETs) perceptions of food and nutrition curricula in grades 7 and 8, teacher training, and classroom instruction. Face-to-face interviews were conducted in Victoria (*n* = 3), and telephone interviews were conducted with Manitoba HETs (*n* = 5), from May through August 2018. All interviews were conducted by a single interviewer who took field notes to facilitate data collection and analysis. Questions are in Table 2. Interviews lasted between 30 and 65 minutes each.

Table 2: Semi-structured interview questions

Interview questions	
1.	What is your educational background? Do you think this is similar to most HMEC teachers in your school system?
2.	Is HMEC mandatory or optional for students in your school system?
3.	How do you use the provincial food and nutrition curriculum for developing your unit plans?
4.	What is your opinion of the food and nutrition curriculum?
5.	What resources and/or supports do you use to develop your unit plans to align with the food and nutrition curriculum?
6.	Do you have a teaching focus on Indigenous food and nutrition issues? If yes, can you elaborate?
7.	Do you have a teaching focus on multi-cultural food and nutrition issues? If yes, can you elaborate?
8.	Do you have a teaching focus on health and wellness issues? If yes, can you elaborate?
9.	Do you have a teaching focus on sustainability? If yes, can you elaborate?

Data analysis

Slater's food literacy framework outlines 59 competencies of a food literate young adult (Slater et al., 2018). The competencies were inserted in an Excel spreadsheet and "mapped" or cross-referenced to curricular SLOs (Manitoba) and CDCs (Victoria) that encompassed the competency. For example, the competency "Understanding the role of nutrients in the body" was paired with the Manitoban GLO 2.1 "Develop understanding of the relationship between food and a healthy body".

Field notes were reviewed after each interview for clarification. Similar statements were organized together to identify common themes and sub-themes. Manitoban and Victorian data were analyzed separately to identify differences in response between regions.

Results

Results showed many similarities, as well as some differences, between the content and application of the respective HEFN curricula. The amount of class time devoted to HEFN education varied from 16-45 hours per year. While some of the food literacy components were incorporated into curricula and teaching, some were not. Teachers identified barriers to implementation.

Manitoban and Victorian HEFN education and curricula

Manitoba

Education in Manitoba is divided into three grade groups: early years from kindergarten to grade 4, middle years from grades 5 to 8, and senior years from grades 9 to 12. There are four sectors of Manitoban education: public schools (provincially funded), independent schools, First Nation¹ schools, and home schooling. The majority (> 90%) of students attend public schools (Government of Manitoba, 2018).

HEFN classes are not required for all students in Manitoba; however, some of the 34 School Divisions have mandated classes in middle school, while in other Divisions it is optional or not offered at all. Curriculum is available from grades 5 through 12 and is designed for a stand-alone course or as a part of a comprehensive human ecology program, which includes family studies and textiles. The curriculum is organized into General Learning Outcomes (GLOs), which are overarching statements about what students are expected to learn in each course. Each GLO consists of assorted learning outcome (Government of Manitoba, 2015), called Specific Learning Outcomes (SLOs). SLOs are prescriptive and define precisely what students should know and do by the end of a learning activity. GLOs remain the same across grades, however SLOs become increasingly more complex and specific as grades progress. SLOs build upon knowledge, skill, and behaviour that were learned in previous years.

¹ First Nation Schools are operated by registered Indigenous bands or First Nations communities under federal jurisdiction. "First Nations" is a term used to describe Aboriginal people who are not Métis or Inuit (Gadacz, 2019).

Although curriculum is prescribed from grades 5 to 8, schools’ implementation of programs varies greatly. Schools schedule HEFN by semester or trimester, rotating classes between other skill-based programs, like textiles, woodworking, electronics, or industrial art classes. Time allotted for HEFN classes also varies between schools. For example, one school offers 32 hours per year of HEFN, while another offers 10 hours.

Victoria

Primary schools have a preparatory year prior to grade 1, and go through to grade 6, while secondary schools have grades 7 to 12. There are three school sectors in the state of Victoria: government, independent, and Catholic. In 2017, 63.5% of Victorian students attended government schools, while the remaining students attended non-government schools or home schooling (Government of Australia, 2018).

All State government Victorian schools are mandated to follow the Victorian curriculum that is implemented between kindergarten and grade 10. Students finish their education in grades 11 and 12 with a Victorian Certificate of Applied Learning (vocational focus) or the Victorian Certificate of Education (preparatory for tertiary education).

HETs in Victoria design HEFN programs using content from two curriculum documents: *Design and Technologies* (Victoria Curriculum and Assessment Authority, n.d. a) and *Health and Physical Education* (Victorian Curriculum and Assessment Authority, n.d. b) for grades 7 through 10. Both curricula are used for programs aside from HEFN classes, such as physical education, mechanical engineering, graphic arts, and woodworking. Accordingly, curricular content must use broad language for its cross-disciplinary utilization. Curricular content, through Content Description Codes (CDCs), provides general themes that programs should embrace, similar to Manitoba’s GLOs. Teachers in Victoria use the mandated curricula as a guide to develop courses and learning activities that will meet thirteen achievement standards.

Food literacy principles in curricula

The comparison of the respective curricula with Slater’s framework revealed some gaps; 12 missing competencies in Manitoban curricula, and 14 in Victoria which were primarily Functional and Relational (Table 3). However, all systems competencies were present in the curriculum documents.

Table 3: Gaps in food literacy competencies in curricula

	Manitoban Curriculum	Victorian Curricula
Functional Competencies	<ul style="list-style-type: none"> Being able to prepare meals with basic ingredients Being able to compare food costs to make economical choices Being able to stock a pantry with staple ingredients Being able to develop a food budget Being able to select healthy foods within a budget Having positive attitudes around food and eating Being able to advocate for availability of healthy foods in the community Understanding food and weight loss/supplements industry interests and marketing 	<ul style="list-style-type: none"> Understanding nutritional needs at different life stages Understanding seasonality of food Understanding where to access food Being able to prepare meals with basic ingredients Being able to read/follow a recipe Being able to cook with and for others Being able to use technology to find appropriate recipes Being able to stock a pantry with staple ingredients Having positive attitudes around food and eating Having healthy body image and self-esteem Understanding that all foods can have a positive role in our diets
Relational Competencies	<ul style="list-style-type: none"> Enjoy food and eating Being able to access foods particular to one’s culture Being open to eating new and diverse foods Enjoying cooking new and diverse foods 	<ul style="list-style-type: none"> Enjoy food and eating Preparing food in a fun and enjoyable way Enjoying preparing new and diverse foods

Themes

Four major themes emerged from HETs perceptions of food and nutrition curricula in grades 7 and 8, teacher training, and classroom instruction.

HETs should receive specialized training.

Participants indicate that the majority of HETs receive their HEFN education through a tertiary educational body, yet the majority felt that many of those newly entering the occupation do not receive proficient training to instruct HEFN programs. Participants in Manitoba know of other HETs with backgrounds in Physical Education and Family Studies, but not Nutrition. They report that the closure of University programs, a shortage of French-speaking HETs, and the under-appreciation of HEFN professionals have contributed to the reduction of qualified teachers instructing HEFN. Similar perceptions of teacher credentials were identified in Victoria. Victorian participants commented that many individuals with culinary training and teacher certificates have been instructing HEFN. A Victorian HET comments:

Chefs are hired because shows like Master Chef have become so trendy, and culinary programs make schools look good... these programs don't provide kids with the everyday knowledge to prepare simple, everyday meals using whole ingredients. Culinary shows often feature foods with high levels of fat, sugar, and salt. It's not a sustainable way of cooking.

Curriculum implementation has challenges.

Manitoban HETs found the layout of the curriculum easy to follow and could identify how learning objectives build upon one another. They valued the breadth of curricular content, which encompass a variety of food and nutrition-related issues. A teacher who did not have formal training in HEFN remarked that the SLOs give clear guidance on what content is expected to be covered in the course, yet also expressed that the curriculum had components they could not interpret.

Victorian HETs had varying opinions of the curriculum. One appreciated its broad structure which gives her the autonomy to design her own program, tailoring it to students' needs or interests, and allowing in-depth exploration of topics. Another HET felt the curriculum is too general and would like more guidance on what students should be learning and able to do. She suggested that some HETs misinterpret the curriculum and design classes that primarily produce patisserie items, with little focus on healthy eating.

Manitoban and Victorian HETs both described that there is too much content within curricula to cover within the time they are given and struggle to include all content.

The curriculum covers a lot of information... you are forced in a course like this to pick and choose based on your time restrictions

[My time with students] is not long, so I have to narrow down what they're going to do

To cope, they may design tasks that cover a variety of SLOs in one lesson:

Yes, there are a lot of SLO's, but if you look at the big picture and focus on the GLO's as your leading force, you are probably hitting the SLOs.

The restricted time to cover the large curriculum may not allow for students to fully develop ideas:

I feel I just introduce each topic. I would love to spend more than one class on a topic, but I don't want to take away from all the other content that I still need to teach... I feel like I'm giving them an information overload

A Victorian HET stated that students' minimal time spent in HEFN programming is not enough to develop food skills necessary for adulthood:

It's still not enough information or skill development for students to never receive food education again. It's really basic, really introductory stuff.

Instructional resource procurement

HETs in Manitoba and Victoria use human and non-human resources to support HEFN curricular content (Table 4). Manitoban HETs use the government publication *Eating well with Canada's Food*

Guide (Government of Canada, 2007), share resources with colleagues, and create or use resources from various online sources. One HET cited use of a government recommended textbook *Food for Life* (Government of Manitoba, 2015). Victorian HETs use the food model *Australian Guide to Healthy Eating* as well as resources supplied by the Victorian Curriculum Assessment Authority and professional associations such as Home Economics Victoria. Both Manitoba and Victoria HETs used internet resources. All Victorian participants use the Facebook page Teachers of Food Studies (Food Technology), although it is not necessarily an endorsed platform of best practice teaching materials. HETs in Manitoba and Victoria say that their education in HEFN has prepared them to critically evaluate the quality of online resources.

Table 4: Learning resources that HETs use to support curricular outcomes

Manitoban HET Resources		Victorian HET Resources	
Teachers that cited use of resource (N = 5)		Teachers that cited use of resource (N = 3)	
Human resources			
Sharing with colleagues	3	Facebook	3
Social Media	1	Sharing with colleagues	2
Instagram	1		
Non-human resources			
<i>Print</i>			
Teacher's university textbook	1	Food by Design (textbook)	2
Food for Life (textbook)	1	The Food Book	1
Stone soup (story book)	1	Materials from Home Economics Victoria	1
		Magazines	1
		Newspaper	1
<i>Government and Industry</i>			
Eating Well with Canada's Food Guide	3	Australian Guide to Healthy Eating	3
Ag in the Classroom	1	Healthy Eating Pyramid	1
Nuton (Dairy Farmers)	1		
<i>Online sources</i>			
YouTube	3	YouTube	2
Google search	2	ClickView	1
CBC news articles	1	Documentaries	1
Learning Zone Express	1	Google search	1

Inclusion of food literacy topics is variable

Health and wellness

Manitoban and Victorian HETs incorporate health topics into programming. Three HETs in Manitoba introduce nutrition knowledge by focusing on “developing a healthy body”.

Being sick as an adult is so far away it is hard to make the connection between health and nutrition for them. I have a focus on “what kind of body are you growing?” and what you need to feel good.”

For some HETs in Manitoba and Victoria this was support through use of government-issued eating guidelines *Eating Well with Canada's Food Guide* (Government of Canada, 2007) and the *Australian Guide to Healthy Eating*. Some HETs employ food mapping assignments where students plot the food they ate over time in a blank food guide to assess their dietary quality. They introduce major nutrients, what foods they are found in, and their primary functions in the body. Only one teacher mentioned instruction related to well-being, “sitting and eating with classmates after a practical task”.

Multi-cultural and Indigenous food and nutrition issues

Manitoban and Victorian HETs teach about multi-cultural food and nutrition issues in middle years; however, one Manitoban HET situates meals within a culture and geographical context by comparing governmental eating guidelines with Canada and France. Participants include components of *cuisine*, as in making recipes from different ethnic foods traditions, such as make a Spanish paella. Two Victorian HETs present cuisine in grade 9 or 10 HEFN and exclude it from middle-years' programs.

Not at the moment—these early years in a students' food education [are] about getting their skills up.

Manitoban HETs include little information about Indigenous food and nutrition issues in grades 7 and 8. Two HETs make bannock² with their classes. One teacher includes the First Nation, Inuit, and Métis version of *Eating Well with Canada's Food Guide* (Government of Canada, 2010) in programming. Some teachers felt that time constraints and the small Indigenous populations in their schools allow for the exclusion of this topic.

I do talk about Aboriginal perspectives, but I don't elaborate. I want them to be aware of it, but I generally don't have the time to go into depth.

Victorian HETs also present little information about Indigenous food and nutrition issues in grades 7 and 8. One HET presents the *Indigenous Food Model* (Aboriginal and Torres Strait Guide to Healthy Eating, 2015), but stated that the school's food supplier does not stock any Indigenous or heritage ingredients. Another claimed there is a lack of teaching resources on Indigenous food and nutrition. All HETs mentioned that Indigenous food and nutrition issues are included in more senior years. One teacher suggested that it is inappropriate for non-Indigenous teachers to present Indigenous topics:

If we want more Indigenous content, we should have more Indigenous leaders come into schools—and they should be paid. It's a beautiful way to reconcile. Then the knowledge comes right from source. They want teachers to learn and teach this knowledge, but then it becomes second-hand knowledge.

Social justice & sustainability

The teachers reported difficulties in teaching social justice and sustainability issues in HEFN. One Manitoban HET compares food prices between Winnipeg and isolated, northern communities (where food is very expensive) to introduce the concept of food security and lack of access for some populations. One Victorian HET introduces reducing, reusing, and recycling. Others suggested that sustainability is demonstrated through school-based initiatives, such as recycling, and composting. The majority felt, however, that developing basic food skills is a greater priority in the early years of food education:

It's sometimes hard to reach things like the food sustainability aspect of the curriculum when you're focused on fundamental food skills and food safety.

Discussion

This study set out to investigate food literacy competencies in Manitoba and Victoria grades 7 and 8 HEFN curricula and teacher implementation.

Curricula structure and content

Several gaps were identified in Functional and Relational competencies through curricular mapping. Absent competencies, however, may be implicitly written in curriculum and may be covered by an effective teacher, a trained HET, or one that uses a food literacy framework in which to base their lessons. Missing competencies in middle years' curricula may also be introduced in later years, as identified by some HETs who focused more on food skills; however, since senior years enrolment in HEFN is significantly lower in Manitoba, youth may not benefit from the current curricular structure.

Teachers in Manitoba and Victoria value the content and structure of their respective curricula although they differ. The Manitoban curriculum is more descriptive, while the Victorian curriculum is broader, because it is used to meet multiple program needs. A more descriptive curriculum may

² Bannock is culturally significant food for some Indigenous people of Canada. In pre-contact times, bannock was made from ground roots, water, and berries, although its contents varied based on what was available. Today, recipes commonly use flour, sugar, salt, yeast, and water. (Colombo, 2017)

scaffold programming for untrained HETs. However, a descriptive curriculum that uses discipline-specific terminology may be an obstacle for a new and/or untrained HET, and may affect their ability to implement certain components into programming. A descriptive curriculum may also prevent teachers from designing patisserie programs, which lead to fewer food literacy competencies.

Interestingly, all “systems competencies”, including food security and the impact of food waste, were present in SLOs and CDCs. However, when teachers were asked about incorporating sustainability in programming, most suggested that this was taught through school-based initiatives, like compost and recycling programs, rather than through HEFN classes. Teaching to learning outcomes, however, is very different than school-based activities. This suggests that there are deviations or omissions from curricular content, as teachers may see other school-based initiatives taking care of these topics.

Teacher pedagogy and training

Most teachers interviewed had tertiary HEFN education and expressed concern that untrained HETs are teaching HEFN programs. The closure of tertiary educational programs was cited as a reason for fewer HET-trained professionals entering the field, something that has been reported in previous studies in Manitoba (Colatruglio & Slater, 2014) and Victoria (Ronto et al., 2017a). Untrained HETs may not understand or misinterpret curriculum, influencing the development of food literacy competencies. For example, untrained HETs may take a culinary or patisserie approach to programming, which do not focus on skills for healthy living.

Teachers’ resources for supporting programming

HETs do not value print material as they once may have, choosing instead online resources. However, a plethora of questionable resources, obtained through platforms like Instagram and Facebook, have replaced government recommended learning materials. Social media platforms are used for sharing resources between teachers, although materials may not be credible or appropriately resourced and referenced. The use of online sources as teaching materials is especially concerning considering the presence of untrained HETs who may not be able to identify evidence-based HEFN educational resources.

Challenges to HEFN programs

While time devoted to HEFN classes varied in Manitoban and Victorian schools lack of time was identified as a major obstacle by everyone. This has been identified elsewhere as a significant barrier to quality food literacy education (Goldstein, 2014; Ronto et al., 2017a). Teachers manage curricular volume and time restrictions by exploring the breadth or depth of curriculum; but not both. In response, teachers progress through all curricular content quickly, without sufficient depth, or do not include all components. Despite lacking specific curricular outcomes, they tend to focus on functional food literacy competencies, like food skills, in these middle years. This is a pragmatic approach, as young people who have positive food-related experiences in adolescence have improved food skills (Laska et al., 2011) and a dietary quality in adulthood (Larson et al., 2006). However, evidence supports the HET’s assertions that their limited teaching time does not improve food skills to a significant degree (Ronto, Ball, Pendergast, & Harris, 2017b). This indicates, that even with a ladder curriculum, students may not develop comprehensive food literacy competencies by the end of their schooling.

Future directions

Tertiary programs should be resourced to ensure appropriately trained HETs are entering the field. Evidence-based online materials should be generated and made readily available for teachers as a means for content-specific professional development to replace current social media repositories such as Facebook.

Developing food literacy competencies should be the aim of HEFN programs. To ensure that food literacy competencies are being incorporated into programs and scaffolded across grades, curriculum should be descriptive and explicit. This will ensure that schools and educators have clear expectations for what is required of HEFN programming and allow for appropriate evaluation. Appropriate tertiary training should be available to ensure a supply of adequately trained teachers, and to support existing untrained HETs. Further, restrictions could be made by educational governing bodies to secure the

employment of discipline-specific teachers; Ireland's *Teaching Council Act* supports the employment of discipline-specific teachers by protecting their employment in their curricular area (The Teaching Council, 2013).

As teachers have become more dependent upon online sources for educational materials, an investment should be made to accommodate this approach to resource acquisition. An online platform of curated, evidence-based HEFN education materials should involve a variety of learning materials including assignments, lesson plans, instructional videos, news articles, and activities that align with curricular outcomes. Ideally, the structure of the learning plan should have a consistent layout, so users become comfortable navigating the learning materials, yet incorporate flexibility for different users and contexts. Further, materials should be overseen by a body of expert HETs through the respective home economics professional associations such as Home Economics Victoria and the Manitoba Home Economics Association to ensure quality and currency.

Finally, more time should be allocated towards food literacy education. Research suggests that food skill development should start at an early age for the greatest skill retention, confidence, cooking practices, cooking attitude, and diet quality (Lavelle, Spence, Hollywood, McGowan, Surgenor, McCloat, Mooney, Caraher, Raats, & Dean, 2016). A study with Australian parents found one third felt HEFN should be compulsory for grades 11 and 12 while three quarters felt having HEFN as a non-compulsory subject for grade 11 and 12 would help students develop food skills (Nanayakkara, Burton, Margerison, & Worsley, 2017). When food literacy education is started early and sustained throughout a student's education, they are given the opportunity to develop higher order competencies (Goldstein, 2014). The UK has taken this approach with their *Food a Fact of Life* program (British Nutrition Foundation, 2019) which is mandatory throughout England. Despite the compulsory nature of the program, a review revealed that its impact has been hampered by many challenges and constraints. These include lack of time and budget for instruction, no additional teaching resources, and limited professional development opportunities (Ballam, 2018).

For schools to scale up and support food literacy education for all students, programs must be resourced and new models of programming will need to be explored such as incorporating into existing subject areas. This will also involve new conversations about moving from the reductionist approach of equipping students for the workforce to preparing students with skills for health, well-being, and citizenship. In our complex food environment filled with incentives to inhibit food literacy development (e.g. ultra-processed and fast food, meal delivery apps) and the damaging consequences (e.g. nutrition-related disease pandemics such as diabetes, environmental degradation), scaled-up food literacy education is essential moving forward.

Limitations

While this study has contributed to a greater understanding of HEFN programming in Manitoba and Victoria, there are limitations. Firstly, a small size of convenience participants was used to gather data, which only reflects the opinions of this group and their biases. Second, the researcher also identified as an HET which may inflate participant bias. However, participants may have felt more likely to divulge their opinions and experiences with a colleague instead of an extraneous researcher. Nonetheless, these preliminary findings provide researchers and educational regulators opportunities for further investigation of food literacy competency development and HEFN program implementation.

Conclusion

Food literacy provides a new and evolving framework for food and nutrition education, but time and resources are required for curricula to fully reflect the scope of food literacy. While grades 7 and 8 HEFN programs in Manitoba and Victoria provide some of the foundations for food literacy competency development, curricula gaps, minimal exposure to HEFN programs in later years, and variable teacher training and program implementation present barriers and challenges. The expansion of food literacy education to all, or at least the majority of students, along with curricula that scaffold food literacy competencies are required as a buffer to an increasingly obesogenic food environment and the development of unhealthy food relationships. These strategies should be supported through adequate teacher training and the creation of evidence-based learning materials, to support programs. It is recommended that schools embrace food programs at an early age for the greatest development and retention of functional food competencies (Lavelle et al., 2016) while

continuing to develop higher-order relational and systems competencies in more senior years (Goldstein, 2014). To do otherwise leaves our children at considerable risk in an increasingly complex foodscape (Slater, 2017).

Author biography

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The Effects of Social and Entertainment Media on Body Dissatisfaction and Social Comparison of Men with Marginalized Identities

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Abstract

A survey of 565 male undergraduates examined the effects of exposure to social networking sites and entertainment media on the body satisfaction of men with marginalized identities. Exposure to social and to entertainment media was found to have negative effects on men's body satisfaction, social comparison, and thin ideal internalization. Findings indicated significant differences in those men who were more exposed to social and to entertainment media than those who were not as exposed. Consistent with past studies, gay men were found to be more dissatisfied with their bodies than straight men. Gay men compared themselves to other better-looking individuals and internalized ideal body types seen in media significantly more than their straight counterparts. Surprisingly, straight men seem to care as much about their physical attractiveness/appearance as gay men do, but only in public settings such as at the beach, at athletic events (including gyms) and social events. Although on average ethnic groups were more similar than different, small but significant differences occurred with Asian men indicating significantly higher body dissatisfaction than White/European men and Middle Eastern/Arab men. This study increases our knowledge about social and entertainment media use and its associated body dissatisfaction and social comparison among sexual and ethnic minority men.

KEYWORDS: BODY DISSATISFACTION, SOCIAL COMPARISON, MARGINALIZED IDENTITIES, GAY MEN, ETHNIC MINORITY MEN, SOCIAL MEDIA, ENTERTAINMENT MEDIA

Introduction

The number of young men suffering from Body Dissatisfaction (BD) has increased over the last several years (Hay et al., 2008; Melki et al., 2015). This increase can be associated in part with social media exposure (Barry & Martin, 2016; Gioia et al., 2020; Fardouly & Vartanian, 2015; Rounsefell et al. 2019, Stronge et al., 2015) to ideal male images (Pope et al., 2005). Social media use is associated with increased BD (De Vries & Kuhne, 2015), which in turn is associated with increased stress, depression, and eating disorders (Rounsefell et al. 2019; Strother et al., 2012). A majority (86%) of college-attending men aged 18-29 use social networking sites (SNSs) (Leslie, 2018; Smith & Anderson, 2018), and media exposure to muscular male images is in part associated with an increasing number of young men suffering from BD over the last several decades (Pope et al., 2005).

The increase in exposure to social and entertainment media and increase in BD among young men necessitates more research on their relationship. Therefore, this study uses a large survey to compare the effects of social media and entertainment media exposure on the BD of straight and gay men from different ethnic backgrounds.

SNSs and Body Image

Little research has been done on the influences of social media on men's BD. However, a growing body of literature suggests that increased SNS usage is related to BD in men (e.g., Griffiths, Murray, Krug, & McLean, 2018). Barry and Martin (2016) explored how men's dress practices and associated SNS use—particularly the posting of selfies—influenced their thoughts and feelings about their bodies,

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which in turn heightened their body consciousness. They concluded that men's body image pressures have reinforced a narrow ideal of masculinity. Men whose bodies deviate from appearance ideals experience daily anxiety because they perceive their bodies as culturally deficient. Similarly, Manago et al. (2015), in a study involving male college students, found Facebook involvement predicted objectified body consciousness, which in turn predicted greater body shame and decreased sexual assertiveness. In addition, Stronge et al. (2015) found that using a Facebook profile is associated with poorer body satisfaction for men across all ages. Conversely, other research suggests that SNS usage does not have an effect on BD in men. For example, Thompson and Loughheed (2012) studied undergraduate college students' involvement with Facebook and found that males strongly disagreed that pictures others post on Facebook produced a negative body image.

In regard to SNS exposure, the most-visited SNSs by youths in the United States are YouTube (94%), Snapchat (78%), and Instagram (71%) (Smith & Anderson, 2018). Although Facebook is the most popular site—used by about 68% of those age 25+ (followed by YouTube and Twitter)—youths (18-24) visit it at lower rates (Smith & Anderson, 2018; Statista, 2020). Our review of the literature revealed that Facebook is the site most studied in research, and other SNSs that are increasingly popular among U.S. youths, such as Instagram, Snapchat, and YouTube (Smith & Anderson, 2018), have been largely overlooked. Different SNSs might have different effects on BD; therefore, this study explored a wide array of popular SNS sites.

Entertainment Media and Body Image

Men's body image concerns also stem from internalizations of body ideals seen in entertainment media (Diedrichs, 2012), and that internalization mediates the relationship between masculine role norms and body image (De Jesus et al., 2015). Thus, masculine images in media may influence men's drive for muscularity and leanness. Recent studies have examined different dimensions of entertainment media images, including race and social comparison. Cheng et al. (2016) found that acculturative and racial experiences play a key role in Asian American men's drive for a Western standard of masculinity. Melki et al. (2015) found that young Arab adults who idealize Western muscularity and who have high exposure to entertainment content that promotes muscularity are more likely to be steroid users. Fashion magazines represent a considerable source of unrealistic body types and body ideals because models and celebrities are depicted as thin, tall, and young, with Caucasian features.

A number of studies on the effects of magazines and TV indicate that pressure from exposure to physically attractive people and idealized images generates negative self-image in young men (Hausenblas et al., 2003; Humphreys & Paxton, 2004). Barlett et al. (2008) conducted two meta-analyses that revealed this pressure is significantly related to men feeling worse about their bodies. Interestingly, Agliata and Tantleff-Dunn (2004) found that males might not go through the same internalization process as females do. They suggested that males are reactive to appearance-related cues and interpret messages at face value without internalizing them. Similarly, Knauss et al. (2007) found that for boys, the stronger predictor of BD was pressure from mass media and not internalization. But, McCabe and Ricciardelli (2003) found that media messages had little impact on the prediction of body image or body-change strategies adopted by young males. These studies looked at only magazines, however, and occurred prior to the proliferation of SNS use among adolescents, and they didn't take into account different sexual identities.

Sexual Identities

A large body of research shows that gay men are more dissatisfied with their bodies than straight men are due to biological, psychological, social and cultural factors (Filice et al., 2020), Kaminski et al., 2005; Morrison et al., 2004; Tiggeman et al., 2007; Yelland & Tiggeman 2003). Gay men are more likely to have false beliefs about the importance of an ideal physique, diet more, are more fearful of becoming fat (Kaiminski et al., 2005), and experience greater desire for leaner (Smith et al., 2011) and more muscular (Yelland & Tiggeman, 2003) bodies. Studies have shown not only higher rates of body image disturbances but also higher rates of eating disorders among gay men compared to straight men (Conner, Johnson, & Grogan, 2004; Neumark-Sztainer et al., 1998).

Studies on gay men, media use, and BD have identified positive associations between exposure to media and negative body image (Duggan & McCreary, 2008; Gill, 2009; Lanzieri & Hildebrandt, 2016), and associations have also been found between greater frequency of social media use and BD

(Griffiths, Murray, Krug, & McLean, 2018). Gay men were most likely to report negative emotional effects from comparisons to media imagery such as dieting, cosmetic surgery and sexual risk-taking (Fawkner, 2004) and images promoting thinness (Stronge et al., 2001).

Many body image studies conducted on gay men used predominantly white men, and did not consider men of other racial groups samples (Kaminski et al., 2005; Wichstron, 2006; Yelland & Tiggeman, 2003). The research presented for the current study is more racially inclusive.

Ethnic minority gay men's body satisfaction is worse than that of straight men. Brennan et al. (2013) found ethnic minority gay men (more specifically, Black, East/Southeast Asian, South Asian, and Latino/Brazilian) had low body satisfaction and referenced the media as the most powerful influence in how they perceive and evaluate their own bodies. These findings are not surprising as many media outlets use males who are predominantly lean and muscular (Diedrichs, 2012), and the media targets gay men as a primary audience to sell fashion products (Gill, 2009), placing additional pressure on them (Carper et al., 2010).

Theoretical Framework

Theories from psychology and communication are useful to examine the effects of media exposure on BD. This study uses social comparison theory and cultivation theory to help explain why and how men are affected by media.

Social Comparison Theory

Social comparison is a fundamental psychological mechanism that influences people's judgments, experiences, and behavior. People constantly compare themselves to others (Corcoran et al., 2011). First developed by Festinger (1954) and revised many times, this theory suggests that individuals compare their physical appearance to that of others they perceive as similar (Wheeler & Miyake, 1992). The consequences of these comparisons are influenced by the direction of the comparison—upward or downward. Upward comparison is when a person compares himself to people better looking than him, whereas downward comparison is to people worse looking than him. Downward comparison is believed to increase an individual's subjective well-being, whereas upward comparison is believed to decrease it (Wheeler & Miyake, 1992).

Fawkner (2004) found that men compare themselves with media imagery and report negative impact and distress (Adams et al. 2005) from them. Social comparison, particularly comparing oneself to more attractive SNS "friends," has been found to be the main culprit in BD for both men and women (Chou & Edge 2012; Manago 2015).

Research Hypotheses

In order to investigate how social comparison and cultivation work together each set of hypotheses represents a step in the process of examining how increased media exposure may lead to BD.

Based on the growing body of literature suggests increased SNS and entertainment exposure is related to BD in men, the first set of hypotheses tests how frequency of media use affects BD.

H1A: men who are frequent users of SNSs will have poorer body satisfaction than those who are non-frequent users.

H1B: Men who are frequent readers of entertainment media (magazines) will have poorer body satisfaction than those who are non-frequent readers.

Building on the first set of hypotheses, the H2 hypotheses were developed to test whether social comparison occurs more often in more frequent users of SNS and entertainment media, and whether ethnic and/or sexual identities affect those comparisons.

H2A: Men who are frequent users of SNSs will compare their bodies to others (social comparison) more than will those who are non-frequent users.

H2B: Men who are frequent readers of entertainment media (magazines) will compare their bodies to others more than will those who are non-frequent readers.

H2C: There is an interaction of ethnicity and sexual identity.

A large body of research shows that gay men are more dissatisfied with their bodies than straight men. Therefore, the H3 hypotheses seek to understand the extent of this effect, and the H4 hypotheses look at the mediating role of ethnicity.

H3A: There are differences in men's body image perceptions based on sexual orientation.

H3B: There are differences in men's social comparisons based on sexual orientation.

H4A: There are differences in men's body image perceptions based on ethnic background.

H4B: There are differences in men's social comparisons based on ethnic background.

Method

In order to test the hypotheses, undergraduate students from a large California State University campus voluntarily completed a survey. California is one of the most linguistically diverse regions in the world, home to more immigrants than any other state and almost one-third of its population is foreign born (Public Policy Institute of California, 2020). The survey included the following measures: Body Attitude Test, physical appearance social comparison scales and SNS and entertainment media consumption questions.

Participants

Male participants (N = 565) were selected from a large sample pool of 1,391 undergraduate student participants in the San Francisco Bay Area ranging in age from 18 to 44, the majority of whom were 20-23 ($M = 22.79$; $SD = 3.47$). Most considered themselves to be low income ($n = 247$, 43%) or middle income ($n = 293$, 51%). Respondents varied in ethnicity, but almost half were Asian/Pacific Islander ($n = 246$, 44%), followed by Non-Hispanic/White ($n = 106$, 19%) and Latino/Hispanic ($n = 101$, 18%), Middle Eastern/Arab ($n = 38$, 7%) and African American ($n = 16$, 3%). Participants varied in academic majors, with the majority in business ($n = 218$; 37%), marketing ($n = 102$; 18%), and finance ($n = 75$; 13%). Approximately 77% ($n = 448$) were straight and 13% ($n = 78$) were gay.

Procedure

Study procedures were approved by an Institutional Review Board. Participants were recruited from both online and resident undergraduate courses at a California State University. Online course students were given a Qualtrics software survey link and were offered extra credit for participation. The survey included the informed consent form and the researchers' contact information. Students who completed the paper survey received the consent form as well. Participants voluntarily completed the survey of body image and media exposure, which included the measures of interest as well as a demographic questionnaire. All participants completed the surveys in this order, which took approximately 25 to 35 minutes to complete. Internal consistency reliabilities were checked, and all scales had Cronbach alphas higher than .870.

Body Dissatisfaction

The first measure included questions from the Body Attitude Test (BAT) (e.g., "When I look at myself in the mirror, I am dissatisfied with my own body" or "I am inclined to hide my body (for example by loose clothing).") The instrument consists of 20 validated survey questions (Probst et al., 1995). Five questions that were not suitable for male respondents were omitted from the study. Questions are measured on a scale of 1 to 6 ranging from always to never. Internal consistency reliabilities indicated an adequately strong Cronbach's alpha ($\alpha = .87$).

Social Comparison

The second scale included the upward and downward physical appearance social comparison survey questions (UPACS & DACS) (O'Brien et al., 2009). These 18 items are measured on a 5-point scale ranging from strongly agree to strongly disagree. Upward physical appearance social comparison (e.g., "I compare myself to those who are better looking than me rather than those who are not") 10-item scale Cronbach's alpha was strong ($\alpha = .92$) as was the Cronbach's alpha of the downward

physical appearance social comparison (e.g., “I often compare myself to those who are less physically attractive”) 8-item scale ($\alpha = .92$).

Media Exposure

SNSs

Respondents were asked how many times a day they checked each SNS through open-ended questions. Responses were later recoded into a dichotomous variable—frequent SNS users and infrequent SNS users. The most popular SNS sites are (in order) Instagram, YouTube, Facebook and Twitter (Statista, 2018). However, to be inclusive as possible, the following sites were also included to gauge overall SNS usage: LinkedIn, Snapchat, Pinterest, Tumblr, Flickr and Google+. Exposure was operationalized as usage.

Entertainment media

Entertainment media is defined as magazines for this study, which includes gossip, fashion, popular men’s, sports, and health-related publications. Respondents were asked, through open-ended questions, how often they read these magazines, and responses were later recoded into a dichotomous variable—high entertainment users and low entertainment media users.

Demographic Characteristics

The demographic questionnaire asked respondents for their age, gender, ethnicity, sexual orientation, income level, and academic major at current school. Age, gender, ethnicity, and sexual orientation items were open-ended questions which were then recoded into groups.

Analytic Strategy

The study used quantitative analysis to analyze the results. Effects of media, ethnicity, and sexual orientation were analyzed using independent sample *t*-tests/Cohen’s *d*. Ethnic group comparisons were analyzed through analysis of variance (ANOVA) testing including post hoc Fisher’s least significant different test (LSD). Statistical significance was established at $p < .05$.

Results

Effects of Social and Entertainment Media

Independent sample *t*-tests findings indicated significant differences in men who were more exposed to social and to entertainment media than those who were not as exposed, consequently rejecting the null hypotheses for *BD* (Hypotheses 1A and B), and *social comparison* (hypotheses 2A and B) (see Tables 1 and 2).

BD

On average, frequent SNS users (Mean = 2.80, SD = .81) showed significantly ($t = 3.50, p = .001, d = 0.29$) more dissatisfaction with their bodies than SNS users who did not check sites as frequently (Mean = 2.56, SD = .81). Similarly, men who were more exposed (Mean = 2.85, SD = .89, $p = .00$) to entertainment media (such as fashion magazines, gossip magazines etc.) exhibited significantly ($t = 3.16, p = .002, d = 0.29$) higher dissatisfaction with their bodies than those with low exposure (Mean = 2.61, SD = .78). Cohen’s *d* indicated that exposure to both types of media poses negative effects of similar magnitude (moderate effect size).

Table 1: Independent samples *t*-test for Differences in Men’s Body Dissatisfaction and Social Comparison based on Social Media Usage

	Social Media Use	N	Mean	Std.
	<i>t</i>	<i>p</i>	Cohen’s <i>d</i>	Deviation
Body Dissatisfaction	Frequent	317	2.80	0.81
		3.50	0.0001	0.29
	Infrequent	260	2.56	0.83
Social Comparison	Frequent	317	2.82	0.75
		4.15	0.000	0.35
	Infrequent	260	2.54	0.84
Upward Comparison	Frequent	317	2.96	0.83
		4.49	0.000	0.38
	Infrequent	260	2.63	0.91
Downward Comparison	Frequent	317	2.64	0.87
		2.79	0.005	0.24
	Infrequent	260	2.43	0.95

Body image 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *usually*, 6 = *always*

Social comparison 1 = *strongly disagree*, 5 = *strongly agree*

Significant when $p < .050$

Table 2: Independent samples *t*-test for Differences in Men’s Body Dissatisfaction and Social Comparison based on entertainment Media Usage

	Entertainment Media	N	Mean	Std.
	<i>t</i>	<i>p</i>	Cohen’s <i>d</i>	Deviation
	Exposure			
Body Dissatisfaction	High	194	2.85	0.89
		3.16	0.002	0.29
	Low	381	2.61	0.78
Social Comparison	High	194	2.85	0.76
		3.40	0.001	0.30
	Low	381	2.61	0.81
Upward Comparison	High	194	3.00	0.83
		3.65	0.000	0.32
	Low	381	2.72	0.89
Downward Comparison	High	194	2.67	0.88
		2.33	0.020	0.21
	Low	381	2.48	0.92

Significant when $p < .050$

Social comparison

Men who were frequent SNS users compared themselves (Mean = 2.82, SD = .75) to others significantly ($t = 4.15, p = .00, d = 0.35$) more when viewing SNSs than non-frequent SNS users (Mean = 2.54, SD = .84). This pattern was replicated for both upward and downward comparisons, indicating a smaller effect size for the latter type of comparisons. Frequent SNS users compared themselves (Mean = 2.96, SD = .83, $p = .00$) significantly more ($t = 4.49, p = .000, d = 0.38$) to better-looking individuals than did infrequent SNS users (Mean = 2.63, SD = .91). Interestingly, frequent SNS users (Mean = 2.64, SD = .87) also compared themselves significantly ($t = 2.79, p = .005, d = 0.24$) more to worse-looking individuals than did infrequent SNS users (Mean = 2.43, SD = .95). Men who had higher exposure (Mean = 2.85, SD = 0.76) to entertainment media had a significantly ($t = 3.40, p = .001, d = 0.30$) higher tendency to compare themselves to other individuals than men who were not as exposed (Mean = 2.61, SD = 0.81). Similarly, to the pattern of exposure to SNSs, higher exposure to entertainment

media led men (Mean = 3.00, SD = 0.83) to compare themselves significantly ($t = 3.65, p = .000, d = 0.32$) more to better-looking men (upward comparison) than did men with lower exposure (Mean = 2.72, SD = 0.89). High exposure to entertainment media also led men (Mean = 2.67, SD = 0.88) to compare themselves significantly ($t = 2.33, p = .020, d = 0.21$) more to worse-looking men (downward comparison). In addition, a multiple regression analysis showed no significant $F(1, 557) = 3.476, p = .06$ interaction between ethnicity and sexual identity. Null hypothesis 2C was not rejected.

Effects of Sexual Identity

Exposure to social and entertainment media

T-test results indicated that gay men (Mean = 3.18, SD = 1.03) were significantly ($t = 1.96, p = .05, d = 0.24$) more exposed to SNSs than Straight men were (Mean = 2.94, SD = 0.99). Similar findings occurred for entertainment media. Gay men (Mean = 1.59, SD = 1.02) were significantly ($t = 2.70, p = .00, d = 0.40$) more exposed to entertainment media than Straight men were (Mean = 1.26, SD = 0.53), but with a stronger effect size than when exposed to SNSs.

Effects of men's sexual orientation on their *BD* (Hypothesis 3A) and *social comparison* (Hypothesis 3B) showed notable differences consequently rejecting null hypotheses.

BD Hypothesis 3A

Gay men (Mean = 2.97, SD = 0.89) were significantly more dissatisfied ($t = 2.94, p = .003, d = .35$) with their bodies than their Straight counterparts (Mean = 2.67, SD = 0.80). See Table 3. Independent samples *t*-test revealed gay men (Mean = 4.23, SD = 1.49) observed their appearance in the mirror significantly ($t = 3.41, p = .001, d = 0.41$) more than Straight men (Mean = 3.63, SD = 1.43) and during these observations (Mean = 3.14, SD = 1.22) they were dissatisfied with their own bodies significantly ($t = 3.33, p = .001, d = 0.39$) more than Straight men (Mean = 2.64, SD = 1.29). Gay men (Mean = 2.69, SD = 1.53) were also significantly more inclined ($t = 2.14, p = .033, d = 0.25$) to hide their bodies (for example by loose clothing) than Straight men (Mean = 2.33, SD = 1.33). When gay men (Mean = 2.88, SD = 1.21) compared their bodies to their peers' bodies, they felt significantly more dissatisfied with their own bodies ($t = 2.05, p = .040, d = .024$) than Straight men (Mean = 2.59, SD = 1.16). Moreover, gay men (Mean = 3.23, SD = 1.35) envied others for their physical appearance significantly ($t = 2.77, p = .006, d = 0.33$) more than Straight men (Mean = 2.77, SD = 1.36).

Table 3: Independent samples *t*-test for Differences in Men's Body Dissatisfaction and Social Comparison based on Sexual Orientation

	Sexual Orientation	N	Mean	Std.	
	<i>t</i>	<i>p</i>	Cohen's <i>d</i>	Deviation	
Body Dissatisfaction	Straight	448	2.677	0.809	
			2.49	.003	0.35
	Gay	78	2.974	0.893	
Social Comparison	Straight	448	2.694	0.792	
			2.54	.011	0.31
	Gay	78	2.941	0.790	
Upward Comparison	Straight	448	2.812	0.868	
			2.67	.008	0.32
	Gay	78	3.097	0.881	
Downward Comparison	Straight	448	2.547	0.901	
			1.78	.075	0.22
	Gay	78	2.745	0.926	

Significant when $p \leq .050$

Social comparison Hypothesis 3B

T-test findings revealed that gay men (Mean = 3.09, SD = 0.88) tended to engage significantly ($t = 2.67, p = .008, d = 0.32$) more in upward comparison than Straight men (Mean = 2.81, SD = 0.86). When gay men (Mean = 3.23, SD = 1.15) saw a person with a great body they wondered significantly

($t = 2.22, p = .026, d = 0.27$) more how their appearance matched up when compared to Straight men (Mean = 2.92, SD = 1.15). Gay men (Mean = 2.82, SD = 1.20) compared their bodies significantly more ($t = 2.18, p = .030, d = 0.27$) with unattainable ideals such as models and movies stars than did Straight men (Mean = 2.50, SD = 1.16).

Effects of Ethnicity

Exposure to social and entertainment media

Men of various ethnic backgrounds did not differ in exposure to social and entertainment media. Men of all ethnicities were equally exposed to SNSs and entertainment media.

Analysis of ethnic group comparisons of *BD* (Hypothesis 4A), and *social comparisons* (Hypothesis 4B) revealed no differences. ANOVA was conducted to measure these two hypotheses. Small but significant ethnic group differences occurred measuring *BD* (Hypothesis 4A) using several analyses. Three *BD* items differed among ethnic groups. Significant effects emerged for ethnicity in the self-rating of *BD* when compared to peers [$F(2.437) = 3.23, p = .04$]. Follow-up LSD revealed that Asian men ($m = 2.73$) showed more *BD* discrepancy than White men ($m = 2.42, p = .02$) and Middle Eastern/Arab men ($m = 2.37, p = .04$). Significant effects also emerged in the self-rating item for the importance of bodily appearance [$F(2.954) = 6.45, p = .02$]. Follow-up LSD revealed that Asian men placed less importance on bodily appearance than White men ($m = 3.95, p = .02$), Latino/Hispanic men ($m = 4.0, p = .01$) and Middle Eastern/Arab men ($m = 4.11, p = .01$). A final significant effect occurred in the self-rating of observance in the mirror [$F(3.025) = 6.50, p = .01$]. LSD revealed that Asian men ($m = 3.43$) observed themselves significantly less in the mirror than White men ($m = 4.0, p = .00$).

Discussion

BD is a complex phenomenon affected by factors internal and external to the individual. This study found that men in general were sometimes dissatisfied with their bodies and compared themselves to more attractive individuals (vs. unattractive individuals), and that approximately one third of men internalized the ideal bodies they saw in media. This study contributes to the broader body of research into men's body satisfaction that finds high exposure to both SNSs and entertainment media negatively affects young men's body satisfaction. The findings are consistent with the results of Manago et al. (2015), who found that men who were engaged in Facebook as part of their social lives were also more engaged in their body surveillance of objectified body consciousness, and thus were also more susceptible to feelings of body shame. The results are also similar to those of Stronge et al. (2015) who found that Facebook users reported significantly lower body satisfaction than non-users did. The results on the effects of entertainment media exposure are consistent with those of Hausenblas et al. (2003) and Humphreys and Paxton (2004), who found associations between exposure to entertainment media images and *BD*. Those who used SNSs compared themselves slightly more frequently to others than did high users of entertainment media. This is significant because of the constant connectedness of many young people today (Smith & Anderson, 2018; Wallace, 2015). This study reflects youths' growing exposure to SNS platforms. Although not exhaustive, the sites used in the survey reflects both the most popular sites and a broad array of the SNS options available. The participants in our study aligned with cultivation theory, in that high exposure to both social and entertainment media affected *BD* in all the men in the sample.

The findings of this study illustrate that social comparison theory is useful to study SNS interactions. The study found that men do engage in social comparisons, in particular they engage in the more harmful upward comparison, as it had a slightly higher effect for SNSs than for entertainment media. It appears that those who were more exposed to social and entertainment media also engaged in downward comparison, but it had less of an effect than upward comparison did.

Our study corroborated previous research finding gay men to be more dissatisfied with their bodies than straight men. One question asked "When I look at myself in the mirror, I am dissatisfied with my own body". The second question that showed dissatisfaction was "I am inclined to hide my body (for example by loose clothing)". They envied others' physical appearances more and also looked at themselves in the mirror more frequently, compared with straight men. That envy and their own image in the mirror made them more likely to dislike what they saw. This, then, may have had an effect on their choices of clothing, as gay men were more likely to hide their bodies with loose

clothing. Gay men were also more prone to compare themselves to better-looking (upward comparison) men and not compare themselves to worse-looking (downward comparison) men, therefore engaging in the more harmful upward social comparison than did straight men. As stated earlier, downward comparison is believed to increase an individual's subjective wellbeing, whereas upward comparison is believed to decrease it (Wheeler & Miyake, 1992). When gay men saw a person having what they perceived as a great body, they wondered how their own bodies compared. Moreover, they also compared their bodies to those of unattainable models and movie stars, more than straight men did. Surprisingly, straight men seemed to care as much about their physical attractiveness/appearance as gay men did, but only in public settings such as at the beach, athletic events (including gyms), and social events. Additionally, the study found that gay men are more exposed to both SNSs and entertainment media than straight men are. Gay men were also more likely than straight men to read entertainment magazines, and so would have a higher propensity to be affected by them.

Similar to previous studies, this study's ethnic group comparisons revealed no average differences in men's BD (Nishina et al., 2006; Yates et al., 2004) and social comparisons. Although, on average, ethnic groups were more similar than different, small but significant differences occurred, with Asian men indicating higher BD than their counterparts. Even though White men were found to spend more time in front of the mirror than Asian men do, White men were not as dissatisfied as Asian men when they compared their own bodies to those of their peers. In addition, Asian men were more dissatisfied with their bodies than were both White and Middle Eastern/Arab men. While Asian men claimed their body appearance was not important to them, they were the most dissatisfied with their bodies among ethnic groups, which is in part consistent with previous findings (Kowner; 2002; Neumark-Sztainer et al. 2002) that Asian men were less satisfied than their White counterparts. The study results are also in agreement with Fawcner's (2004) findings that many men indicate appearance is important to them, as it was important to Latino, Middle Eastern/Arab, and White men, but not to Asian men.

Although not statistically significant, the means of the body image questions for Middle Eastern/Arab men are noteworthy because very few studies include this group in their samples (Brennan et al., 2013; Sladek et al., 2018). They were the least likely to be dissatisfied with their bodies, to envy others' physical appearance, or to hide their bodies under loose clothing. These findings are very similar to those regarding White men's body image. Some studies found White males to be more satisfied with their bodies (Kowner, 2002; Monocello & Dressler (2020; Neumark-Sztainer et al., 2002) or that they did not engage in "fat" talk (Sladek et al., 2018) as much as their non-White counterparts did.

The upward social comparison findings about gay men are disturbing. This already vulnerable population has distorted ideas about ideal bodies. The unattainable images they are internalizing lead to health risks such as eating disorders. Gay men suffer much more than straight men from eating disorders risk factors (Brown & Keel, 2015; Carper et al., 2010; Laska et al., 2015). This study also found that increased exposure to social and entertainment media affected not only BD but also social comparison, which is a precursor to BD.

BD is often thought of as an issue only women and girls experience. But as this study shows, BD affects men and boys and can lead to serious consequences. The implications for this illustrate the need for early literacy, and possibly early interventions, on the risks of SNS use for boys with marginalized identities. While interventions that address the negative effects of SNS interventions for SNS and adolescents have been developed (e.g., McLean, 2017; Gordon, 2020), none have been developed specifically for gay adolescents or men. Until this occurs, we will likely see the problem grow as SNS use increases.

One recommendation for future research is to obtain a sample with more respondents in each ethnic group to get a better understanding of BD among African American, Middle Eastern, and Hispanic males. Middle Eastern and African American men are currently the least studied groups. We also recommend that new measures are created to address the cultural and sexual identity differences that men may associate with body satisfaction.

Conclusion

The current study increases our knowledge about the connection between social and entertainment media use and how the social comparisons that occur because of them may affect BD. It is important

because it reveals that both sexual identity and ethnicity in men affect the rates of BD. Consistent with past studies, gay men were found to be more dissatisfied with their bodies than straight men as they engaged more in social comparison and internalization of media images. Furthermore, the study found Asian men had higher BD than White/European and Middle Eastern/Arab counterparts. These findings raise the possibility that enhancing social media literacy in young men may assist in the prevention of BD resulting from increasing social media use, particularly for ethnic minority Gay men.

SNS changes quickly. Facebook was the number one SNS site when we collected the data in 2018. Only two years later, it has slipped to third and TikTok is now the fifth most popular, although it wasn't launched until 2017 and not available in the U.S. until 2018. Although sites change, the importance of educating youth, particularly youth of color and gay youth, on the health risks associated with overexposure need to continue. Even Instagram (owned by Facebook) began experimenting with hiding "likes" in 2019 citing the move as beneficial to its users' mental health and as a way to reduce bullying (CBS News). Perhaps other SNS will follow its lead.

Limitations

The present study has several limitations. Young males of African American background could not be included in the ANOVA testing given a lack of power due to sample size requirements. The sample did not have enough of young males of African American background; therefore, they could not be included in the ANOVA testing. Another limitation was that there was no consideration of masculinity differences in men; the study focused only on BD. The variable 'dissatisfaction with masculinity' is an integral part of research on men's body image and should be included in future BD research. Also, consideration of different masculinity norms among different cultures should be included in future studies. Frequency of social and entertainment media use was dichotomized, which is not always desirable. Further, the sexual orientation variable was dichotomized into the two largest groups—straight and gay. Other sexual orientation categories were selected by male participants, but their numbers were too small to be included in the statistical analyses. Also, not all items from the BAT scale were used in this study for male participants. Only questions of a generic nature that could be applied to men were used (for example, the statement "I envy others for their physical appearance" can be generalized to more than one gender).

Author biographies

Dr. Markova is an assistant professor of apparel design and merchandising/textiles at San Francisco State University. Markova earned her doctorate in International and Multicultural Education at University of San Francisco in 2013. She has been teaching research methods, consumer behavior, and textiles for fourteen years at San Francisco State University. Thus, her most recent research explores topics in consumer behavior studies with the focus on media and the effects a variety of media platforms have on individuals' body image and body dissatisfaction. Markova has recently published a book "Textile Fiber Microscopy: A practical approach." Her goal with her new book is to promote continuity of textile science knowledge in a variety of courses in apparel undergraduate programs.

Dr. Cristina Azocar is an associate professor of journalism at San Francisco State University. She is a past chair of journalism department and she is also a past president of the Native American Journalists Association and previously served on the board of the Women's Media Center. Azocar is an editor of American Indian Issues for the Media Diversity Forum. Azocar earned her doctorate in Communication Studies at the University of Michigan in 2001. Her research and teaching focuses on portrayals of people of color in the news. She is a member of the Upper Mattaponi Tribe of the Powhatan Nation. She received her master's degree in Ethnic Studies and her bachelor's degree in Journalism from San Francisco State University. Dr. Azocar's interest in diversity in the news media spans more than 25 years, and began with her concern about negative representations of Native Americans.

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Existential Family Well-being

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Abstract

Can a family experience angst about its life, wondering about its existence, purpose and meaning? Can a family embark on a philosophical quest to understand its existence? Can a family experience existential well-being? Or are angst, quests and inner searching limited to individual humans? Using the conceptual integration research process, this paper intermixed previously segregated abstract ideas about existentialism and existential well-being as applied to individual humans and then extrapolated them to the family (a group of humans). The intent was to begin to conceptualize existential family well-being. In the process, many as yet unanswered questions were raised. Some extrapolations were more fruitful than others. But emergent avenues for future conceptualizations and research supported the conclusion that there is merit in pursuing this line of intellectual inquiry in home economics.

KEYWORDS: EXISTENTIALISM, EXISTENTIAL WELL-BEING, EXISTENTIAL FAMILY WELL-BEING, EXISTENTIAL FAMILY SELF, HOME ECONOMICS

Family has many definitions: structural and functional (McGregor, 2009). But fundamentally, a family is a group of two or more people sharing *a life* together. This definition implies that families (a group of people) *have a life* with degrees of being purposeful, worthwhile and meaningful (“Have a life,” 2020). Sometimes, life can bring angst, which is an acute but unspecific, generalized feeling of anxiety, dread and fear. Normally, people cannot link this feeling with any one thing, but it is a pervasive sense of unease in and discontent with their life (Solomon, 2005). Can a family experience *angst* about its life, wondering about its existence, purpose and meaning? Or is it just individual family members who experience existential angst and wrestle with the meaning of their life—a process influenced by their embeddedness in the family unit?

If the philosophical concept of existentialism refers to understanding the human experience (Burnham & Papandreopoulos, ca. 2012), can it be used to understand the family experience, a group of humans? As a caveat, when discussing existentialism, *experience* means to either (a) directly perceive or be aware of something or (b) actually participate in or live through something. The better people can describe their life experiences, the better they can be true to their *self* with less existential angst (Bakewell, 2016; Nilsson, 2018). Do families have a *self*, which is conventionally defined as a person’s essential being (nature or personality) that distinguishes them from everyone else (Anderson, 2014)?

Reference to families and existentialism is scarce in the literature (found in social work, nursing, family therapy, gerontology) and usually concerns families with chronically ill, aging or terminal members. To illustrate the nascent literature using the term, Albinsson and Strang (2003) referred to supporting “families in existential crisis” (p. 225), but they interviewed individual family members. Veach, Nicholas, and Barton (2002) referred to “the family’s existential crisis” (p. 78), but they drew on comments from a terminal cancer patient and his wife. Lantz (2004) referred to “the goals of family existence” (p. 169) but in reference to working with respective family members in therapy. In short, the family *is* a group of humans, but it is not *a* human. So, can a family *experience* existential well-being?

McGregor, S.L.T. (2020). Existential Family Well-being. *International Journal of Home Economics*, 13(2), 42-51.

The home economics profession¹ assesses family life through dimensions of well-being (Kihm & McGregor, 2020; McGregor & Goldsmith, 1998). Should home economists develop the concept of *existential family well-being*, so they can help families figure out what is really going on (or not) in their lives (daily existence) and what it means for them? McGregor (2020) contextualized *family well-being* relative to individual well-being, reasoning that it comprises eight dimensions: “financial, relational, group dynamics and cohesion, family autonomy, collective health, community connection, spiritual health, and ecological well-being” (p. 11). What might emerge if our attention turned to *existential family well-being* with its focus on the meaning and purpose of existence in family life? Can this become an additional dimension of a family being well for home economics?

Should the profession address such issues as what meaning does a family’s existence have in the scheme of things? How significant is it to their well-being that families feel connected to their existential self and the world? What is the true essence (existential self) of a family experiencing existential well-being? Can a family embark on a philosophical quest to understand its existence? These and other unanswerable questions guided this inquiry. Can there be such a thing as *existential family well-being*, when existentialism ostensibly pertains to individuals?

Individual Existential Well-being

As a strand of philosophy, existentialism deals with “questions of life, its origin and its conditions, and the basic condition of being human” (Ablinsson & Strang, 2003, p. 226). This paper links existentialism with well-being. Existential is Latin *existere*, ‘to cause to stand, exist, to be’ (Harper, 2020). The word well-being has its roots in Old English *wel*, ‘abundance, in a satisfactory manner’ and *beon*, ‘to be, exists’ (Harper, 2020); in effect, a good or satisfactory condition or state of existence (being). When applied to an individual, *existential well-being* “refers to a person’s present state of subjective well-being across existential domains, such as meaning, purpose, and satisfaction in life, and feelings of comfort regarding death and suffering” (Ownsworth & Nash, 2015, p.1).

People’s ability to confront or be comfortable with such issues speaks to their relative existential well-being (Friedman, 2016; Ownsworth & Nash, 2015). By ignoring the larger questions of life and being, people can experience existential angst (anxiety) and existential loneliness (i.e., disconnected from self, others and nature along life’s journey). Conversely, searching for answers to these questions, while respecting they are frustratingly unanswerable, can lead to a healthier life (Friedman, 2016; Nilsson, 2018). The search for meaning in life “is not pathological [unhealthy], but rather the surest sign of being truly human” (Nilsson, 2018, p. 68).

Four Domains of Existentialism

Yalom (1980) proposed four life conditions (i.e., domains of existentialism) that challenge humanity: (a) death, (b) existential isolation and its relationship imperative, (c) freedom with its attendant choices and responsibilities and (d) meaninglessness that drives people to find and often create meaning in their life. Regarding freedom, Bakewell (2016) explained that the freedom to *be* whatever one chooses can cause dizzying anxiety, because it comes with such responsibility. Heidegger (1927/2010) suggested that awareness of Yalom’s (1980) four challenges means people are *mindful of being*. Ignoring or suppressing these challenges in the course of daily life leads to *forgetfulness of being*. Both states can cause existential angst.

Existential Well-being and Spirituality

Existential well-being (of the *self*) is ambiguously linked with spiritual well-being (of the *spirit*) (Visser, Garssen, & Vingerhoets, 2017). Spiritual well-being is the “ability to experience and integrate meaning and purpose in life” (Srivastava, 2018, para. 2). It is about a person’s “inner life and its relationship with the wider world” (Srivastava, 2018, para. 3). Spiritual well-being “captures a layer of well-being, a sense of insight and ethereal, intangible evolution, hope and faith not readily imparted by either social or psychological well-being” (McGregor & Goldsmith, 1998, p. 5). People with a lower sense of spiritual well-being have a poorer sense of meaning and purpose in life (Pearce, Coan, Herndon, Koenig, & Abernethy, 2012).

¹ The ideas herein pertain to home economics as well as human ecology, family and consumer sciences, home sciences, consumer sciences, family studies, home ecology, and household sciences.

Despite associating spirituality with meaning and purpose in life, it is a different construct than existential well-being, which has the added dimensions of angst, isolation, and freedom rife with responsibilities (Yalom, 1980). That said, eminent well-being scholars consider spiritual well-being as comprising both existential and religious well-being (Ellison, 1983; Paloutzian & Ellison, 1982), but they distinguish among the three. Religious well-being is associated with a person's "relationship with a higher power within a particular religious system" (Ghaffari, 2015, p. 129). Existential well-being pertains to a sense of meaning and purpose in life. Spiritual well-being is not synonymous with religion (Deagon & Pendergast, 2012). And existential well-being is not dependent on religious well-being, although the latter can shape the former (Ellison, 1983; Ghaffari, 2015).

Owensworth and Nash (2015) posited that both spirituality and existential well-being are core dimensions of the health aspect of quality of life. They proffered that both are related to but different from other quality of life domains like physical, economic, emotional and social well-being. In effect, existential well-being is a unique aspect of human life, because it focuses on the *existential self* (Johnson, 1967). That is, the *self exists*, the person is aware of it and can appreciate that their self is constant through space and time. People's quest to "make sense of life can be depicted as the *existential self* trying to deal with [the uncertainties of life]" (van den Bos, 2009, p. 212).

Existentialism Applies to Individuals

By convention, existential well-being applies to *individuals*, because existentialism is about people "pondering the meaning of their lives, their existence as humans, especially in times of strife, tragedy, crisis, or major life transition" (McGregor, 2015, p. 1). It is accepted that the focus of existentialism is on human *existence* (Bakewell, 2016; Burnham & Papandreopoulos, ca. 2012). It deals with the "overarching human concepts of personal freedom, suffering and death, and the pursuit of meaning and purpose" (Owensworth & Nash, 2015, p. 1).

But humans live in families. Musings about how a family unit might ponder its existence and the meaning of its life inspired this paper. Brown (1978) and McGregor (2015) asserted that home economists must be familiar with existentialism per se, so they can help individuals and families confront life. Morris, Hadley, and Koehly (2013, p. 482) used the term "existential well-being in families" but did not define it. To address this home economics imperative and fill this conceptual gap, *existential family well-being* is the focus of this paper.

Method

A thorough literature review generated nothing that specifically dealt with *existential family well-being*. Both a June and October 2020 Google and Google Scholar search using this exact term yielded zero results. But conversations with home economics colleagues about this intellectual venture provided encouragement (cited with permission). "I think that you are onto something" (Kerry Renwick, personal communication, June 11, 2020). "I think existentialism and family well being would be ... a fantastic, timely contribution to the literature" (Peggy O'Neil, personal communication, June 16, 2020). Conversely, knowing that existentialism pertains to individual humans, another supportive colleague, whose serendipitous COVID-19 reading was Bakewell's (2016) book on existentialism, queried "whether a purely existential examination of *family well-being* is possible" (Mary Gale Smith, personal communication, June 6, 2020).

All said, I persevered. A protracted Google Scholar Boolean search was conducted using combinations of terms (*exist*, *existential(ism)*, *existential well-being*, *family*, *self*) and related concepts as they emerged. Alignment between individual and family-oriented existentialism was explored. Extrapolated insights were sought. Ideally, a literature review of this nature presents "a reasoned and organized argument that leads somewhere, not just an unfocused hodgepodge of literature that falls under the same keyword" (Rosnow & Rosnow, 2009, p. 33). At the risk of being perceived as a hodgepodge—a confused mixture of ideas—a collection of ideas is presented herein trusting that something will come of it in the future. This agglomeration of aligned ideas serves as a conceptual starting point. There are many questions but few answers, which is acceptable in the eyes of existentialists.

In effect, what is offered for consideration herein represents the first stage of developing a new construct through a research process called conceptual integration, which entails intermixing previously segregated abstract ideas (Rocco & Plakhotnik, 2009). The intent is to develop arguments

for any imagined or proposed associations among the aligned ideas while leaving the completion and testing of the construct to future researchers (Gilson & Goldberg, 2015). After explaining how a different aspect of existentialism is understood relative to an individual human, questions were raised about the merit and appropriateness of bringing *that* idea to the family as a human group. A guiding research question was ‘how useful are these ideas for eventually conceptualizing existential family well-being?’

Ruminations about Conceptualizing Existential Family Well-being

The rest of the paper presents ruminations about existential family well-being anchored in five contributory aspects: (a) *intersubjectivity* and how one’s existence is determined in relation to others, (b) existential self and *family body* (structure), (c) *family thinking* and dynamics, (d) *family personalities* and (e) *existential meaning* (found within a group) (see Table 1). This conceptual approach is followed with preliminary thoughts on how to measure existential family well-being if it can ever be effectively conceptualized and theorized.

Table 1: Contributory Aspects of Conceptualizing Existential Family Well-being

Existential Intersubjectivity	People develop their <i>existence</i> (how they experience <i>being</i>) in interactions with others; the <i>existential self</i> can only exist within a community of people. Families and existential self are thus mutually linked.
Family Body and Existential Family Self	Once people acknowledge their material, physical body, they de facto acknowledge their nonmaterial <i>existential self</i> . Perhaps <i>family structure (body)</i> could mirror the material body leading to acknowledgement of an <i>existential family self</i> .
Family Thinking and Existential Family Self	Gaining insight into one’s <i>existential self</i> requires thinking. <i>Family dynamics</i> affect how that group of people thinks perhaps creating an <i>existential family self</i> that can think.
Family Personality	To ensure existential well-being, individual personalities have to be protected from external collective pressures. The <i>family’s personality</i> (its unique <i>self</i>) is continuous over time, but it must be protected so it can adapt and adjust to life.
Existential Meaning	People feel a primal need to seek <i>meaning</i> and find <i>purpose</i> in life; this <i>existential meaning</i> making is not solitary. It happens in a group and is a process that provides self-identity and insights into the <i>existential self</i> and perhaps insights into the <i>existential family self</i> .

Existential Intersubjectivity

Drawing on French philosopher and existentialist Gabriel Marcel (1889-1973), Roark (1982) explained that personal existence is intersubjective, meaning people develop their existence in interaction with others. “It is impossible to know oneself without the help of other people” (Roark, 1982, Chapter 13, Section 1). The way a person experiences *being* (existing) is informed by their relations to others. Without these relationships, people cannot be a *self* (see also Haldane & McCluskey, 1982). And, without relationships, people “can never be fully human” (Nilsson, 2018, p. 71). Perhaps the notion of intersubjectivity (between people) could be applied to how a family comes to know itself existentially.

Existential family therapists tend to agree. They view existential family therapy as a dynamic approach grounded in human existence. It is concerned with a person’s being, existence and their current life experiences instead of what happened in the past or what he or she wants in the future. That said, the intent of existential family therapy “is neither to deny the importance of past experiences (which ‘live on’ in our present existence), nor to see as unimportant, hopes, fears and expectations about the future” (Haldane & McCluskey, 1982, p. 124). But when working with families, existential family therapists assume that “personal existence is constituted by the relation of persons’, and further, that self ‘can exist only as a community of personal agents’” (Haldane & McCluskey, 1982, pp. 118-119; see also Roark, 1982).

Maybe helping each individual family member enhance their personal existential well-being is the best way to ensure existential *family* well-being. Existential family therapists take this approach when “helping family members change” (Lantz, 2004, p. 166). They assume that families are more likely to change when respective family members can find meaning, reason and/or a purpose for engaging in the proposed change. Rather than identifying a problem and disrupting things that perpetuate it so that people can cope with life’s limitations, existential family therapists help family

members use strategies to creatively respond to the essence of life, so there is more meaning to their existence in *that* life (Lantz, 2004).

Existential Self and Body

Still drawing on Gabriel Marcel, Roark (1982) explained that, per intersubjectivity, people confront others through their physical body. To explain, once people acknowledge their own physical body, they have in effect also acknowledged a nonmaterial existence—the self. Conversely, to live on a higher level of self, people have to sustain and respect their physical body within which their existential self exists (Nilsson, 2018; Roark, 1982). Can a family acknowledge its physical body (does it even have one?), so it can acknowledge its existential self—*an existential family self*? There is a collection of human bodies in a family, but is there a family body? Perhaps.

Families do have a *structure*, in that they are made up of a collection of people varying in sex (also gender), marital status, sibling mix, and power. To illustrate, a single parent family has one parent raising the child(ren). A nuclear family is a heterosexual married couple with children. A cohabitating, unmarried couple (varying sexuality) live together with or without children. A blended family is a combination of adults and children from previous arrangements. Whatever the structure, it “reflects relationships at the juncture of biological relatedness, marital and partnership status, and living arrangements [i.e., sibling and adult mix]” (Pasley & Petren, 2016, p. 1). Would a family’s structure (i.e., the body of the family), once self-acknowledged, affect its existential family self?

Family Thinking and Existential Family Self

In addition to a body and a self, dealing with existentialism requires people to *think* (Roark, 1982). That said, he advised that a person’s thinking ability refers to more than mere thought. The other concern is that people exist as a personality, which also requires thinking through self-dialogue. Nilsson (2018) concurred, claiming that self-discovery dialogue, to gain insights into one’s personality so one can grapple with existentialism, entails thinking. This raises the question ‘Can a family think?’ Perhaps. The way a group thinks is called group dynamics (Forsyth, 2009). Each family has its own group dynamics called *family dynamics* (Rivera, Guarnaccia, & Mulvaney-Day, 2008), intimating that a family *can* think.

The family unit does not have a brain, but its respective members do, and they can think together like a team. Having agreed to a family mission (now), vision (future) or both for the family’s life, people would put the family before their own personal agendas. They would be willing to change their personal views on life to benefit the family, making it stronger as a whole. Family members would try not to resist change at every turn instead being open to new ideas and decisions that might benefit the family’s life. In the family thinking process, family members would hold each other accountable and support and respect each other for the good of family life. Effective family thinking would require delegation, motivation and recognition (extrapolated from Gregory, 2012).

Generally speaking, the way a group thinks depends on its properties: (a) expected role behaviour, (b) accepted and expected standards of behaviour (norms), (c) status (standing) with others, (d) size and (e) willingness of each member to be a part of the group (cohesiveness). A group can think together as a *work group* or a *work team*. A work group requires no joint effort. People share information, so other members can perform within their respective roles to anticipated standards. In a work team, a collective performance unfolding through a coordinated effort generates a positive synergy, wherein the end result is much greater than the individual efforts that created it. People are accountable to each other and the group (Forsyth, 2009).

All family units have a set of patterns for relating to and interacting with each other called *family dynamics*. Dynamics are forces that stimulate activity (physical and mental), development or change within the family system or some combination of the three. Family dynamics (i.e., the way a family thinks) are influenced by several factors similar to a nonfamily group: family type (structure) and size; the particular mix of people living within the group; the power dynamics (level and type of influence on each other and the group); and the family’s culture, ethnicity and values (Becvar & Becvar, 2002; Rivera et al., 2008).

These factors mirror the aforementioned aspects of a family structure, which also included cohesiveness (Pasley & Petren, 2016). Family dynamics affect family cohesion and vice versa with the latter concerning emotional bonding among family members (Rivera et al., 2008). These dynamics

affect how the *family thinks* as a group of humans. Given that family dynamic theory holds that a family *can* think as a team, a logical conclusion would be that a family can think its way through existential crises and angst. There might just be such a thing as an *existential family self* (beyond existential individual self).

Family Personality

Roark (1982) further explained that individual personalities must be protected, so they can find their authentic self and meaning and purpose in life (i.e., enhanced existential well-being). For this reason, existentialists reject collectivism or anything that denies or degrades an individual's personality. Personality is French *personnalité*, 'sense of a distinctive essential character of a self-conscious being' (Harper, 2020). A personality is a set of behavioural (temperamental), emotional and cognitive (mental) patterns that is shaped by biological and environmental factors (Corr & Mathews, 2009). This complex set of attributes makes each person's character (personality) unique—one of a kind.

Roark (1982) asserted that personalities (i.e., each unique person) can become submerged beneath collectives: global production and consumption systems, urbanization and asphalt cultures, and the military-industrial complex that ensures war and hegemonic domination. This external pressure on a personality can lead to existential angst (Lantz, 2004; Newberry, 2012). How would the principle of rejecting collectivism apply to conceptualizing existential family well-being? Would individual family members need protection from the family collective, so their personality is not denied? Conversely, would the family's personality need protection from individual members, so it cannot be denied? Can a family (as a group) even have a personality that is impacted by existential angst? Perhaps.

In the only article found on family personality, Brody (1974) defined it as "what the family is like at the aging phase of [its] life" (p. 23). Although she did not use the word existential, she was concerned with how families deal with aging-related crises such as disintegrating family relationships, separation, loss and death. She proposed that "the basic family personality is continuous over time" (Brody, 1974, p. 25), but families must adjust and adapt to crises, so the family can mature as a whole within its already established personality.

The family is a group. Perhaps insights can be gained about *group personalities* from other disciplines, for instance biology. In his work with fish and animals, Herbert-Read (2017) referred to "the personalities of groups" (p. R1015), which he said are predicted by individual group members' personalities. Another study about gregarious (sociable) insect species explained that group personality "arises from the synergy between [individuals' personalities] and social amplifications [and interactions]" (Planas-Sitjá, Deneubourg, Gibon, & Sempo, 2015, p. 1).

Extrapolating from biological insights on group personalities integrated with Brody's (1974) notion of family personality, it can be suggested that a family's personality emerges from the synergy arising from interactions among family members (i.e., family dynamics and thinking) and can be predicted by each member's respective, unique personality. The latter matters from an existential stance. In the human realm, existential well-being has emerged as a powerful protective factor. A person with a high level of existential well-being (reflecting their personality) is far less likely (by > 70%) to have a massive depressive episode (Maselko, Gilman, & Buka, 2009; see also Morris et al., 2013). Fischer et al. (2016) found that existential well-being served as a protective role in reducing suicidal ideation of abused intimate partners. Would this principle apply to a family's personality—ensure individual existential well-being to protect the existential well-being of the family as a group?

Existential Meaning

When dealing with existential aspects of their lives, people search for meaning—Latin *meninge*, 'that which is intended to be expressed' (Harper, 2020). *Existential meaning* refers to people feeling a "primal need to seek meaning in all circumstances [and] find meaning and purpose in life" (Nilsson, 2018, p. 66). But existential meaning making is not a solitary affair. Within a group setting (perhaps a family), meaning is actively constructed by group members. Some suggest that when an individual loses their group identity, their sense of meaning is also compromised, and they experience existential angst (Nilsson, 2018). This suggests that the group gives them meaning. Does a family give individual members meaning in their life? Do people lose meaning in their life, if they lose the connection with their family group? Or reversed, does the family lose meaning in its life (experience angst) if a family member severs connections or passes away? (see Brody, 1974). More questions.

Measuring Existential Family Well-being

If home economists forged ahead with the existential family well-being construct, how might they measure it? How would they determine the current state of a family's existential well-being? The most common approach for measuring an *individual's* existential well-being is Paloutzian and Ellison's (1982) spiritual well-being instrument, which comprises two parts: religious well-being (RWB) and existential well-being (EWB). The EWB aspect includes 10 items rated using a 6-point Likert scale (1—strongly agree and 6—strongly disagree). The instrument queries people about the extent to which their “life is pleasurable, gratifying, healthy, enjoyable, good, conflicting in nature, meaningful, and anxiety provoking with reference to the future [and if they have] a life direction and some life goals” (Shek, 2012, p. 337). The higher the score (ranging 20-120) the higher their level of existential well-being at that time.

Perhaps home economists could arrange for individual family members to complete this assessment tool and then amalgamate their responses into some aggregate of existential family well-being. This would be a technical linear approach however, because it would fail to create or capture the synergy emergent within the whole (Forsyth, 2009, Planas-Sitjá et al., 2015). The whole would be equal to the sum of the parts (e.g., total cost of ingredient list to make a cake) instead of a reflection of the synergistic whole being greater than the sum of all the parts (e.g., the cake made from different ingredients in the list). Aggregating individual scores would generate an inelegant picture of existential family well-being, because each person completed the instrument alone instead of the family as a whole. That said, perhaps the family could go through the instrument together and collectively answer the 10 questions? The final score (between 20-120) would be that family's state of existential well-being at that time.

Maybe empirically measuring existential family well-being is shortsighted. Existential social workers, for example, eschew the empirical methodology in favour of interpretive. They draw on phenomenological and hermeneutic approaches. These research strategies, respectively, get at the essence of lived experiences and strive to understand (interpret) the meaning of people's lived experiences (Newberry, 2012). Existential social workers try to break down each person's shame, guilt, loneliness and hopelessness (i.e., existential angst) by situating their experience in the “ever-expanding web of human concerns” (Newberry, 2012, p. 2) that others also experience. Said another way, each person's existential angst is unique, but they are not unique in that they are experiencing existential angst. Seeking the essence of and then interpreting their life narratives is one way to discern their existential well-being. Phenomenological focus groups (Bradbury-Jones, Sambrook, & Irvine, 2009) comprising the entire family might be an appropriate strategy for measuring existential family well-being.

When measuring existential well-being, Shek (2005) creatively used Paloutzian and Ellison's (1982) EWB instrument in conjunction with the construct of *family functioning* defined as “the quality of family life at the systemic level” (Shek, 2005, p. 518). By defining family as comprising subsystems, Alderfer et al. (2008) further explained that family functioning is affected by the social and structural properties of the whole family *system* (i.e., family environment). How well a family functions at the systemic level is dependent on interactions and relationships within and among subsystems as they are shaped by conflict, cohesion, communication, adaptability, roles and how well they are defined, and affect (regulation of emotions and behaviour) (Alderfer et al., 2008). These factors resonate with the previous description of family dynamics (Forsyth, 2009).

Shek (2005, 2012) reported that perceptions of how well a family is functioning depended on a family member's existential well-being. In his work with Chinese adolescents, the higher an adolescent's sense of a purpose in life, the better she or he said their family functioned. The passage of time also played a role; the higher the adolescent's existential well-being in time frame one, the more positive their rating for family functioning in time frame two. Shek's (2005) study examined “perceived family functioning” (p. 518), intimating that future studies should focus on actual family functioning and its affect on existential well-being.

Perhaps other lessons can be learned from existential social workers who proposed that people need some kind of existential framework within which to find meaning and purpose in their life (Nilsson, 2018). A framework is an underlying structure that provides support, in this case support in defining one's existence. An *existential framework* would comprise a combination of (a) people's actual experiences and their awareness of and relations with others (i.e., personal and social life that can

cause angst) and (b) the situated context within which their experiences are interpreted. This context would include (a) culture (norms, values, beliefs); (b) language and linguistics that so deeply shape how people interpret a situation and assign meaning; (c) a web of relational concerns; and (d) a complex of structural concerns (i.e., social institutions, ideologies and systemic social problems impacting daily life) (Mullaly, 1997; Newberry, 2012; Nilsson, 2018). If home economists embraced this idea, they could help families develop and take action to find purpose and meaning in their life while drawing on their self-constructed existential framework.

Conclusion

This paper represents an inaugural attempt to conceptualize *existential family well-being* within home economics. Using the conceptual integration research process, the results reflect the intermixing of previously segregated abstract ideas about existentialism and existential well-being as applied to individual humans that were then extrapolated to the family as a group (see Table 1). Preliminary thoughts were shared on how home economists might measure existential family well-being. In the process, many questions were raised with most unanswered. Some extrapolations were more fruitful than others. But avenues for future conceptualizations and research did emerge, which is conceptually encouraging.

Families face angst in today's complex world some of which is existentially based. More personally, existentialism assumes that people are free and responsible agents as they strive to understand their existence and find meaning and purpose in their life. Respectively, what does this external and internal pressure mean for a family's existence? What brings meaning and purpose to the life of a family? How does a family deal with existential angst (i.e., isolation, anxiety, fear, dread, uncertainty, unease, discontent)? The existential family well-being construct is presented in its infancy. The objective was to entice home economists to explore the philosophical, theoretical and pragmatic merit of using it to help families struggling with the purpose of their existence and what it all means.

Author biography

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Effect of peer tutoring teaching method on students' academic achievement in clothing and textiles in senior secondary schools in Lagos State, Nigeria

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Abstract

The purpose of this study was to determine the effect of Peer Tutoring teaching method on Students' Academic Achievement in Clothing and Textiles in Senior Secondary Schools in Lagos State, Nigeria. Two research questions were raised TO guide the study and two hypotheses were formulated and tested at 0.05 level of significance. Quasi experimental research design was adopted for the study. The population of the study consisted of all one thousand, six hundred and seven (1,607). Purposive sampling technique was used for the study. The sampled students were from two senior secondary schools (experimental group) and (control group) Lagos State respectively. The peer tutoring teaching method was used for the experimental classes while the conventional method was used in the control group. Cronbach Alpha statistic was used to determine the internal consistency of 0.85. The data collected were analyzed using mean and standard deviation to answer the research questions. Null hypotheses were tested using analysis of covariance and analysis of variance (ANCOVA and AN OVA) for both pre-test and post-test scores at 0.05 level of significance. The findings revealed that there was a significant effect of treatment (instructional methods) on students' performance in Clothing and Textiles in favor of peer tutoring. Based on the findings of the study, it was concluded that peer tutoring method of instruction enhance the level of academic achievement of Clothing and Textiles than the conventional method of instruction. Resulting from this, it was recommended among others, that peer tutoring method of instruction should be adopted for use by Home economics teachers in the teaching of Clothing and Textiles.

KEYWORDS: PEER TUTORING, STUDENTS' ACADEMIC ACHIEVEMENT, CLOTHING AND TEXTILES, TEACHING METHOD.

Introduction

Clothing and Textile deals majorly with the training of students to identify different fibers/fabrics, understand how to care for them, create new designs for garments, develop patterns, know how to weave, dye clothes, launder clothes, plan wardrobe for different group of people in the family, mix colors for decorations, among others. Advances in technology have necessitated basic skill and global intelligence (Tucker, 2013). Clothing and Textiles encompasses studies such as fabric construction, fashion merchandising, interior decoration, dress sense, garment making, social and psychological impact in clothing construction, consumer education, laundry processes among others. Clothing and Textiles is to enable students at the senior secondary level be exposed to various opportunities available in the world of work. It creates awareness to be entrepreneurially and skillfully oriented in Clothing and Textiles such as fashion designers, seam mistress dry cleaners, clothing stylists, interior decorators, toy producers to mention but a few (Arubayi, 2012).

The problem and worry however, is that students seem to perceive the study of Clothing and Textiles as abstract in nature, time consuming, costly, and tedious; hence they often have more preference for food and nutrition (Sang, 2012). The abstract nature of clothing and textiles as a discipline has

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prompted the researcher to advocate for peer tutoring as way to deal with the challenge. This gives the students opportunity to learn and study collaboratively, for example, students can work together in groups as in peer tutoring, having a tutor in each group (Kourea, Cartedge & Mustra-Rao, 2007).

However, the most common method adopted by teachers teaching Clothing and Textile is the conventional method. The conventional method of instruction sometimes referred to as “talk and chalk” is usually content driven, teachers’ centered and not learner centered. This method presents teachers as the sole authority and this to a large extent makes it impossible for students to participate and contribute to the learning process in Clothing and Textiles. Hence the low achievements in Clothing and Textiles.

Academic achievement is referred to as the knowledge attained or skills developed in the school subjects, usually determined by test scores or marks assigned by the teacher. Achievement is a result oriented construction that shows the extent of attainment in a learning task. It is used to ascertain the extent to which programmed goals are realized (Momoh-Olle, 1997).

Kaye (2009) explains that collaborative learning is the process whereby each member contributes personal experience, information, perspective, insight and attitudes with intent of improving learning accomplishments of others. The group collective learning ultimately becomes possessed by each member. According to Gokhale (1995), collaborative learning refers to an instructional method which students at various performance level works together in small groups towards a common goal. The students are responsible for one another’s learning as well as their own. Teams are made up of high, average and low achievers and are radically and sexually mixed and reward systems are group-oriented rather than individually oriented (Hadley, 2005, David, 2003). Thus, the success of one student helps other students to be successful.

There is persuasive evidence that collaborative teams achieve levels of thought and retain information longer than students who study quietly as individuals. Brooks and Brooks (1993), in constructivist learning theory, suggests the following average learning retention percentage based on the different methods of instruction, lecturing 5%, reading 10%, audio-visual 20%, demonstration 30%, discussion group 50%, practice by doing 75%, teach others-collaborative/immediate use learning 90%. Also Roblyer, Edward and Hareririluk (2010) are of the views that shared/paired learning gives students an opportunity to retain knowledge, engage in discussion, take responsibility for their learning and thus become critical thinkers.

Peer tutoring is a flexible, peer-mediated strategy that involves two or more students serving as academic tutors and tutees. Usually, a higher performing student is paired with a lower performing student or students for assistance in reviewing difficult academics or behavioral concepts hence fosters creativity, experimentation and problem solving. Paul, Lisa and Vanesa (2006) defined peer tutoring as an instructional strategy that makes students help one another learn, reinforce skills, and practice a learned task. Science educators considered peer tutoring as one of the effective and powerful instructional method that can be used to develop academic as well as social skills in both the tutors and tutees. Peer tutoring has been found to be an innovative strategy that can enhance academic achievement and intervening way of learning among equals.

Age could influence peer tutoring; the older students are always merged or matched with younger students to deliver instructions. The ages for the senior secondary are of 10 to 17years which are peculiar to teenagers still in senior secondary schools. In peer tutoring, students of different ages (12–18) are peered into a particular group, thus the age difference may moderate the expected outcome of the students since the peer tutor may be of higher or lower age than some of his/her peers. Since studies have shown that age may be a factor in attaining a specific learning task, it is then necessary that the researcher considers the variable as a possible moderator in this work.

Advances in technology have necessitated basic life-skill and global intelligence (Tucker, 2013). It is therefore, necessary to equip Clothing and Textile senior secondary school students with insight and knowledge necessary to become productive, contributing citizens in a complex world of work, using peer tutor instructional methods (Card, 2004). It is possible therefore, that if collaborative in peer tutoring work are used as an instructional method to teach Clothing and Textiles skills, their academic achievement on required skills will enhanced.

Purpose of the Study

The main purpose of this study was to investigate the effect of peer tutoring teaching method on students' academic achievement of Clothing and Textiles in senior secondary school students in Lagos State, Nigeria. Specifically the study sought to determine:

1. the difference in the pretest and posttest mean scores of students of Clothing and Textiles taught using peer tutoring method of instruction;
2. the difference in the posttest mean scores of Clothing and Textiles students taught using peer tutoring method of instruction and those taught using conventional method of instruction

Research Questions

1. Is there any significant difference in the pre-test and post-test mean scores of Clothing and Textiles students taught using peer tutoring method of instruction?
2. Is there any significant difference in the post-test mean scores of Clothing and Textiles students taught using peer tutoring method of instruction and those taught with conventional method of instruction?

Hypotheses

1. There is no significant difference between the pre-test and post-test mean scores of students in Clothing and Textiles taught using peer tutoring.
2. There is no significant difference in the post-test mean scores in Clothing and Textiles of students taught using peer tutoring method of instruction and those taught using conventional method.

Method

This study adopted quasi-experimental design. It is quasi-experimental design because it lacks randomization. It involved experimental group and control group. Intact classes were used in the study. The population of the study comprised of all one thousand, six hundred and seven (1,607) senior secondary year two (SS11) students in the 2018/2019 academic session offering clothing and textiles. The population is in district one of Lagos state (Lagos State Ministry of Education, 2018). The sample size was one hundred and sixty one (161), 79 and 82. Both intact class. 79 for experimental and 82 for control groups. The instrument for this study was the Clothing and Textiles Achievement Test comprising of Pre-test Clothing and Textiles Achievement Test (PRECTAT). Post-test Clothing and Textiles Achievement Test (POSTCTAT) and socio demographic questionnaire comprising sections A and B were administered to both groups (experimental and control). In order to determine the validity of the instrument, the 50 achievement test items (pre-test and post-test) and socio-demographic questionnaire comprising sections A and B were given to three experts: Clothing and Textiles lecturers for scrutiny in the Department of Vocational and Technical Education (Home Economics Unit), (the researcher's two supervisors) and one expert from the department of Educational Evaluation/Counseling and Psychology all in the Faculty of Education, University of Benin. To determine the internal consistency of the instrument, the Cronbach Alpha was applied. This was done by administering the instrument to 20 students of Home Economics. This yielded a coefficient of 0.85. The pretest was administered to both groups consisting of the 50 achievement tests items to determine their entry level. The retrieved copies were used to generate the bio data of the respondents, marked and recorded by the researcher. The lesson plans for both the experimental and control groups were used for six weeks covering the selected topics. The peer tutors taught in the experimental group with the assistance of the researcher while the control group was taught by the Clothing and Textile teacher using the conventional method of instruction. The same instrument was administered at the end of six weeks of treatment by the researcher. At the end, each group had two sets of copies (Pre and Post), administered by the researcher. The data obtained from the pre-test, post-test scores were analyzed using mean, standard deviation for the eight research questions raised. The null hypotheses were tested using *t*-test, ANOVA and ANCOVA at 0.05 level of significance.

Result

Research Question 1: Is there any significant difference in the pre-test and post-test scores of Clothing and Textiles students taught using peer tutoring method of instruction?

Table 1: Mean and Standard Deviation of pre-test and post-test scores of experimental and control groups of Clothing and Textiles students using peer tutoring method of instruction.

Variable	Pre-test			Post-test		
Group	N	\bar{x}	SD	\bar{x}	SD	Mean Gain
Experimental	79	19.43	7.426	30.92	7.060	11.49
Control	82	15.56	3.590	21.22	4.756	5.66

Table 1 shows that experimental group had a mean score of 19.43 and standard deviation of 7.426 in pre-test, a mean score of 30.92 and standard deviation of 7.060 making a pre-test, post-test mean gain of 11.49. The data presented in Table 1, also showed that the control group had a mean score of 15.56 and standard deviation of 3.590 in pre-test, and had a mean score of 21.22 and standard deviation of 4.75 in post-test, making a post-test mean gain of 5.66. The data in Table 1 generally showed that experimental group performed better in the peer tutoring instructional method. The mean gain in the control group was not significant, showing poor performance in the pre-test and post-test mean scores, t-test value of 15.143 and aP value of .000, testing at an alpha level of 0.05. The P value is less than the alpha level, so the null hypothesis which states that there is no significant difference between the pre-test and post-test scores of students in Clothing and Textiles taught using peer tutoring method of instruction is rejected. Consequently, there is a significant difference between the pre-test and post-test scores of students in Clothing and Textiles taught using peer tutoring method of instruction. Since the mean score of the students at post-test is higher than scores at pre-test, it means the peer tutoring method is an effective method in the teaching of Clothing and Textiles.

H0₁: There is no significant difference between the pre-test and post-test scores of students in Clothing and Textiles taught using peer tutoring.

Table 2: Analysis of covariance of the scores of Experimental and Control groups in Clothing and Textiles students taught using peer tutoring

Source	Type III sum of squares	Df	Mean Square	F	Sig
Corrected Model	5191.228	2	2595.614	94.902	0.000
Intercept	4613.216	1	4613.216	168.813	0.000
Pretest	1401.877	1	1401.877	51.299	0.000
Group	2156.803	1	2156.803	78.925	0.000
Error	4317.716	158	27.327		
Total	11819.000	161			
Corrected Total	9505.944	160			

$\alpha = F < 0.05$

Table 2 shows that since the F value (F-Cal 51.299) computed is greater than the critical value of the sig (0.00) at .005 level of significance, null hypothesis is rejected. It therefore means that there is significant difference between the mean scores of the students taught with peer tutoring instructional method and those taught with the conventional (lecture) method in Clothing and Textiles. The analysis of covariance reveals that there is significant difference between the mean scores of the experimental and control groups. This further implies that the different method of teaching Clothing and Textiles does give a significant difference.

H0₂: Is there any significant difference in the post-test scores of Clothing and Textiles students taught using peer tutoring method of instruction and those taught with conventional method of instruction?

Table 3: Mean and Standard Deviation of post-test of Experimental and control groups of Clothing and Textiles students taught using peer tutoring and conventional method of instruction.

Group	N	Post-test	
		\bar{x}	SD
Experimental	79	30.92	7.060
Control	82	21.22	4.756

Table 3 reveals that the experimental group had a mean score of 30.92 and standard deviation of 7.060 while the control group had a mean of 21.22 and standard deviation of 4.756. This implies that the experimental group performed better than the control group.

Hypothesis 2: There is no significant difference in the post-test scores in Clothing and Textiles of students taught using peer tutoring method of instruction and those taught using conventional method.

Table 4: One-way-ANCOVA of post-test scores of students taught using peer tutoring method and those taught using conventional method (duplicate Table 2 for convenience).

Source	Type III sum of squares	Df	Mean Square	F	Sig
Corrected Model	5191.228	2	2595.614	94.902	0.000
Intercept	4613.216	1	4613.216	168.813	0.000
Pretest	1401.877	1	1401.877	51.299	0.000
Group	2156.803	1	2156.803	78.925	0.000
Error	4317.716	158	27.327		
Total	11819.000	161			
Corrected Total	9505.944	160			

α . R squared = .546 (Adjusted R squared = .540)

α = 0.05

Table 4 shows an *F* value of 78.925 and a *P* value of .000. Teaching at an alpha of 0.05, the *P* value is less than the alpha level. So, the null hypothesis which states that there is no significant difference in the post-test scores in Clothing and Textiles of students taught using peer tutoring and those taught with Conventional method is rejected. Therefore, there is a significant difference in the posttest scores in Clothing and Textiles of students taught using Peer Tutoring method of instruction and those taught using conventional method.

Since using mean score at post test of students taught using peer tutoring method is higher than that of those taught using the conventional method, it shows that the peer tutoring method is more effective than the conventional method in the teaching Clothing and Textiles.

Discussion of Findings

The finding of this study revealed that there was a significant difference in academic achievement between SSS11 Clothing and Textiles students in experimental group who were exposed to peer tutoring (PT) and those in control group who were exposed to traditional method of instruction (lecture method). The experimental group had a higher mean (19.43) than the control group (15.56). A significant difference was established in favor of the experimental group taught with (PT). Hence the stated null hypothesis of no significant difference was rejected, ($F= 78.925.p<.05$). This finding could be attributed to the effectiveness of the instructional package to the students. This is in agreement with Kaye (2009), who stated that collaborative learning is a process whereby members contributes personal experience, information, perspective, insight and attitudes with intent of improving learning accomplishments of others.

The fact that students achieved more on what they were taught could be attributed to the instructional approach used, that engages peers to teach themselves in an intact class of

heterogeneous groups making learning and teaching to be more effective and concrete. It could also be that the use of peer tutoring instructional strategy gives the opportunity to build.

A *t*-test value of .981 and a *P* value of .330, testing at an alpha level of .05, the *P* value is greater than the alpha level. So, the null hypothesis which states that there is no significant difference in the posttest scores of male and female students taught using peer tutoring method of instruction. The aforementioned findings also corroborates with the study carried out by Azubuike (2012) who found that there was no significant difference between the mean scores of male slow learners taught biology concepts using peer tutors and female slow learners taught using peer tutoring methods. Also, Ogundola, Popoola and Oke (2010) which test analysis was used to test the significance difference between male and female students exposed to treatment group (experimental group) and analysis of covariance (ANCOVA) at 0.05 level of significance. The analysis of covariance revealed that there is significance difference between the mean the mean scores of the experimental and control groups in the achievement test in favor of the experimental group.

Conclusion

The findings from the study showed that there was a significant effect of peer tutoring method of instruction on students' academic performance in Clothing and Textiles in Home Economics Education when compared with conventional method of instruction. Based on the findings of the study, it is therefore concluded that peer tutoring method of instruction improved the academic achievement of Clothing and Textiles in Home Economics Education than the conventional method of instruction.

Recommendations

In line with the findings of the study, the following recommendations are made:

1. The significant effect of the treatment on the academic performance of students in Clothing and Textiles is an indication that peer tutoring learning strategies have the potential to enhance the level of students' academic performance in Home Economics Education. In the light of this, it is recommended that peer tutoring method of instruction should be adopted as a method of instructional strategy in the teaching and learning of Clothing and Textiles.
2. In other to popularize the adoption and the use of peer tutoring learning strategies periodic seminars by counselors of the schools and workshops should be organized by subject associations, institutional management to train and retrain
3. Home Economics teachers should use of peer tutoring learning strategies in teaching courses.

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A systematic quantitative literature review of pre-service teachers' sense of belonging during school-based experience

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Abstract

School-based experience—which features in many initial teacher education programs around the globe—is one of the most influential factors concerning pre-service teachers' professional development and learning. Furthermore, pre-service teachers' sense of belonging, which is context-specific and embedded in the social, cultural and professional conditions of the school-based experience, is a key aspect of this placement. Failure to resolve belonging tensions can have damaging consequences on pre-service teachers' development. In this review we set out to map the terrain by exploring the literature at the interface of pre-service teachers' sense of belonging and their school-based experience. Specifically, our aim was to explore what contemporary research reveals about pre-service teachers' sense of belonging during their school-based experience. We employed Systematic Quantitative Literature Review methodology to reveal 16 studies connected to the topic but just one study that focused specifically on pre-service teachers' sense of belonging during school-based experience. The review revealed the literature about pre-service teachers' sense of belonging during their school-based experience can be categorised under two broad concepts: the quality of the relationship that a pre-service teacher has with their supervising teacher; and, belonging to a teacher community. The key theme of belonging to a teacher community is intertwined with the features of quality relationships between the pre-service teacher and the supervising teacher. We conclude with some suggestions for future research and recommendations for initial teacher education.

KEYWORDS: SENSE OF BELONGING, PRE-SERVICE TEACHERS, CONNECTING, BELONGING TO A TEACHER COMMUNITY, RELATIONSHIPS ON PRACTICUM PLACEMENT

Introduction

To become a qualified teacher it is usual to engage in supervised teaching practice, commonly known as professional experience, in a school setting during initial teacher education (ITE). Indeed it is regarded to be a core feature of most teacher education programs around the world (Johnston, 2010) and is considered by some to be the most important aspect of the professional education of teachers (Le Cornu, 2015) with the potential to impact on the emergent sense of self as a teacher.

The Australian Institute of Teaching and School Leadership (AITSL) (2015) defines professional experience as:

the component of an initial teacher education program in which pre-service teachers develop and demonstrate their skills in the classroom. Its purpose is to provide structured opportunities for pre-service teachers to consider and undertake in practice the work of teaching, to relate the practice to knowledge and understanding they are developing in their program, and to demonstrate a positive impact on student learning. (p. 2).

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However, each pre-service teacher undertaking professional experience will be immersed in a distinct school context with a culture and collegial relations that are unique to that individual. In addressing this variability of professional experiences Le Cornu's (2015) review of the literature revealed seven components that are essential for effective professional experiences: well-structured integrated ITE programs; well managed integrated ITE programs; well supported integrated ITE programs; high quality supervising teachers; high level commitment from school leadership; high quality school-university partnerships; and high quality systems based partnerships. Cementing these seven components together is the need for collegiate cultures that promote collaboration, trust, high morale and interpersonal familiarity (Le Cornu, 2015). It is in this space of pre-service teacher professional experience that an interest in sense of belonging is receiving growing attention and where a review of the literature has the potential to reveal more about this aspect of professional experience.

Subsequently, this Systematic Quantitative Literature Review (SQLR) focuses on research studies that have in some way explored pre-service teachers' sense of belonging on professional experience across a variety of schooling sectors and contexts. The review is framed within the practice-based education requirement inherent in many ITE programs across the globe, and the central role that these professional experiences play in immersing pre-service teachers into the life-worlds of practising teachers. Our guiding research question is: *What does contemporary research reveal about pre-service teachers' sense of belonging during their school-based experience?*

Sense of belonging

Studies with an interest in *belonging* and *sense of belonging* are of increasing interest and frequency since the turn of the century (Lahdesmaki et al., 2016) and are increasingly aligned with the concept of identity (Probyn, 1996) in a range of professions. Having a sense of *attachment* or *identification* underpins this connection, which points to its relevance for ITE and professional experience, where identity formation is typically a feature of that experience.

Yet, although belonging as a scholarly concept is receiving more attention, it is typically not clearly defined and there is a taken-for-grantedness about a shared understanding of the meaning (Lahdesmaki et al., 2016). This is true of the ITE literature with the predominant frameworks for discussing and framing belonging being offered by Lave and Wenger (1991) through the concept of *legitimate peripheral participation* and Wenger's (1998) *social concept of learning* which links to teacher professional identity.

Lave and Wenger's (1991) situated learning theory positions learning as part of social co-participation that focuses on the types of social interactions and contexts that enable learning to occur (Johnston, 2016; Laker, Laker & Lea, 2008; Passy, 2013). This theory is based on constructivist principles of learning; positing that learning does not happen in isolation but rather is an active and social process (Laker et al., 2008). Learning and actively participating in a practice-based learning environment can be framed as a process of *legitimate peripheral participation* (Lave & Wenger, 1991); where students contribute as "apprentices" (Johnston, 2016, p. 536), observed initially by their supervising teachers prior to taking a more active role in the classroom and the broader school community as they gain more confidence and more capacity to teach (Johnston, 2016). Becoming an active member of a teaching community and developing a teacher identity relating to this community are elements of legitimate peripheral participation (Lave & Wenger, 1991), staying on the periphery as a pre-service teacher while becoming a legitimate active member of the school (Timošćuk & Ugaste, 2010).

To situate these two frameworks—legitimate peripheral participation, and the social concept of learning—within the context of this systematic quantitative literature review (SQLR), we were looking for a connection to sense of belonging and we found this within one of Wenger's (1998) intrinsic components of learning— "community, where learning as belonging: belonging to a social community in which our activities are recognised as valuable and competent" (p. 5). However, this element is intrinsically linked to the other three components of Wenger's social concept of learning and accordingly should not be explored in social isolation. The other three required components are explained by Timošćuk & Ugaste (2010) as follows:

1. Meaning—learning as experiencing: an ability to experience one's life and the surrounding world as meaningful

2. Practice—learning as doing: joint action relying on common (shared) historical and social resources, background systems, and viewpoints
3. Identity—learning as becoming (someone): an understanding of how learning, in the context of the community, affects and moulds us.

(Timoštšuk & Ugaste, 2010, p. 1565)

With a close and mutual connection and reliant on each other for definition (Timoštšuk & Ugaste, 2010), these components can be seen to intersect with having, or not having a sense of belonging.

With this limited definition of the term *sense of belonging* we were reliant on making intellectual connections across the studies based on our literature review search terms and the elements that we could identify as components that support the creation of a sense of belonging for pre-service teachers. This limited definition, and the subsequent framework for defining sense of belonging, suggests the focus in relation to the area of pre-service teachers undertaking professional experience, could be expected to be minimal, pointing to a substantial gap in research in this area.

The review

This SQLR was conducted at the interface of sense of belonging, pre-service teachers, and school-based professional experience and aimed to critically review the resulting literature, understand what the findings reveal, and consider how these might inform ITE. Our guiding research question was: *What does contemporary research reveal about pre-service teachers' sense of belonging during their school-based experience?*

An initial scan of published literature reviews and articles about sense of belonging, pre-service teachers, and school-based professional experience assisted in finding other relevant search terms in order to capture a more comprehensive range of articles reporting on research about the topic. This initial search revealed a variety of terms which refer to pre-service teachers and supervising teachers. While on the surface this may not appear to be problematic, as in most cases it was relatively straightforward to identify the roles that students learning to be teachers play and the role that qualified teachers play in mentoring and supervising pre-service teachers, there was a risk of missing relevant literature. In order to set boundaries for the literature and for consistency in reporting this study, we have selected the terms *supervising teacher* and *pre-service teacher* from the various terms available.

Supervising teacher

The term supervising teacher is used as representative of a range of terms evident in the literature, including: associate teachers; mentor teachers; host teachers; cooperating teachers; teacher tutors. We define a supervising teacher as a practising teacher who is already qualified, either through an undergraduate or a graduate education degree that qualifies that individual for teacher registration/accreditation in their context. The supervising teacher is responsible for mentoring and monitoring the pre-service teacher's practice during their school placement and in many cases is responsible for assessing their teaching ability.

Pre-service teacher

An initial scan of the literature revealed that there was no consistently used term for pre-service teachers across the globe, with varying terms used by authors in the same country. For example, in two separate studies undertaken in England, the authors use three differing terms—*pre-service teachers* (Laker et al., 2008), and *training teachers/beginning teachers* (Fox, Wilson & Deane, 2011). Similarly, in two separate studies conducted in the United States of America (USA) the terms also vary—*pre-service teachers* (Jones, Kelsey, & Brown, 2014); and, *education students* (Maynard, La Paro, & Johnson, 2014). The word *trainee* is also used. For our study the term *pre-service teacher* is used to capture all of these variants.

Method

We have adopted the systematic quantitative literature review methodology as prescribed by Pickering and Byrne (2014) and Pickering, Grignon, Steven, Guitart and Byrne (2015), which provides

for an approach that is replicable and follows a step by step method to consider the literature. The process is visually summarised in Figure 1 and will be explained in the following section.

In order to review published empirical research searches were conducted across six main databases: Griffith University library journal database, ProQuest, ERIC, Web of Science -Social Science Citation Index, Informit, and ScienceDirect. These provide access to the major publishers internationally. The inclusion criteria were:

1. Empirical research-based and specified methodology—quantitative, qualitative or mixed methods;
2. Published in peer-reviewed journals with full-text available;
3. Published in English (or with a translation available);
4. Published from 2007-2017;
5. Focused on pre-service teachers' sense of belonging on professional experience as part of either an undergraduate qualification or a postgraduate teacher education qualification.

Articles were identified using the following methodology (see Figure 1):

1. Database searches for relevant articles which were added to our database (based on titles and scan of the abstracts);
2. As articles were identified, keywords from those studies were added to our initial list of search terms (e.g., connectedness; fitting in; feeling welcome);
3. Bibliographic branching (Hoffman et al., 2015) was used by reviewing the reference lists of articles we included in our database to see if there were any further studies that were relevant to our review. Three were initially found but on full reading excluded due to the criteria.

As presented in Figure 1, 44 studies were identified from the database searches and the following systematic method was then applied:

1. Abstracts of all 44 articles skim-read and included/excluded according to criteria;
2. 17 were excluded;
3. 27 studies were read in full;
4. A further 11 were excluded after this reading;
5. The remaining 16 were included in the review and also used for bibliographic branching;
6. A further three articles were identified but after close reading were excluded as they did not meet the inclusion criteria;
7. One article incorporated all elements of this review.

Studies were excluded that focused on one particular classroom subject (e.g., mathematics) if this was the only work that the pre-service teacher did in the school; studies were included if they focused on one subject but the pre-service teacher was teaching across subjects and/or involved in the school community/life (e.g., playground supervision) (e.g., English teachers, see Johnston, 2016). Studies were included if they specifically related to pre-service teachers' development of a sense of belonging, even if this term was not used we searched for related research findings and keywords (from our literature search) within the content of articles in order to locate all relevant studies (e.g., belonging to the school community). We were inclusive of all articles exploring pre-service teachers' sense of belonging on professional experience even if this was not a direct focus of each study—if there was mention of belonging on practicum placements we included the study in our review.

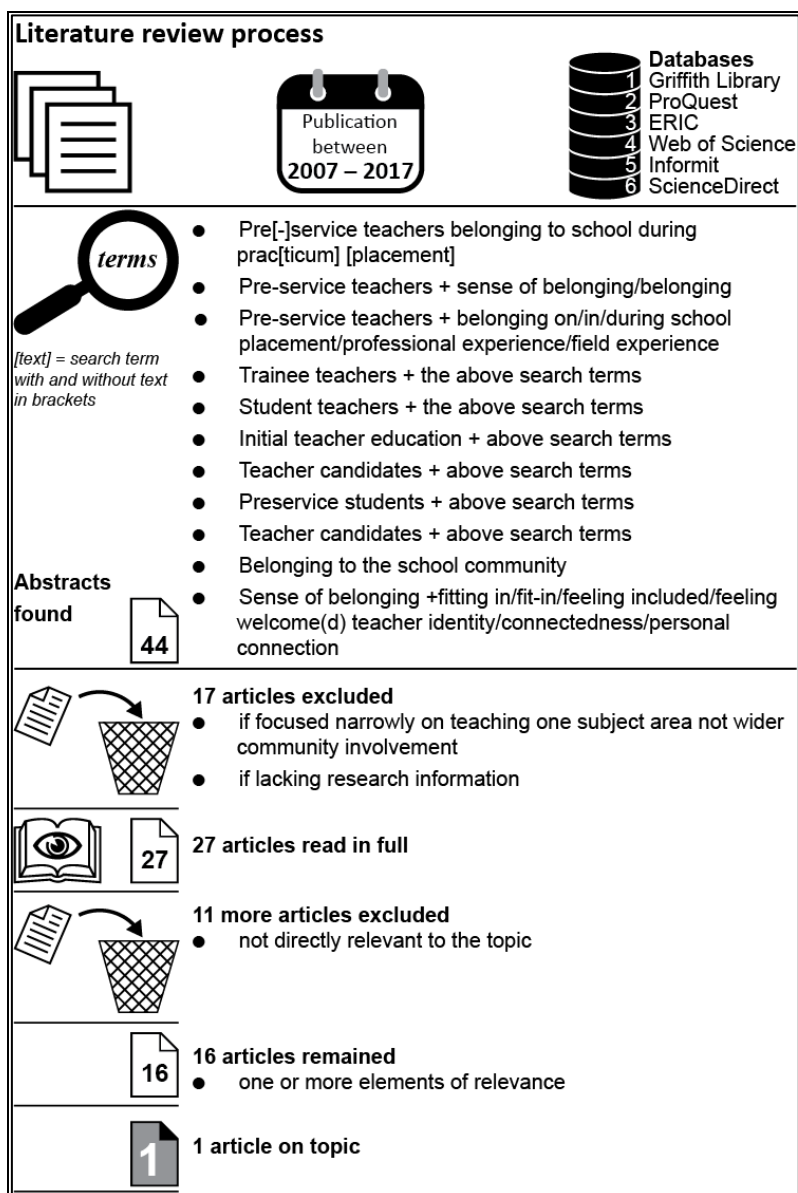


Figure 1: Summary of systematic quantitative literature review methodology

The features of the studies reported in each of the 16 articles identified in the SQLR are presented in Table 1. Details of the research reported including the country, schooling context, methodology, main focus of the study, and key findings are each presented.

Findings

Of the 16 peer-reviewed articles presented in Table 1, only one directly explored pre-service teachers' sense of belonging while on professional experience (i.e., Ussher, 2010). However, for the purposes of this review all 16 papers will be considered to provide insight into the broader contextual relationships related to the review topic in order to respond to our research question: *What does contemporary research reveal about pre-service teachers' sense of belonging during their school-based experience?*

Commentary about the demographic features of the studies and their aims and findings are first presented, and then a review of the papers follows.

Table 1: Summary of studies reviewed in the systematic quantitative literature review

Author(s)	Country	Schooling Context	Methodology	Main Focus of Study	Findings	Terms used to indicate sense of belonging/limited sense of belonging
Caires et al. (2010)	Portugal	Secondary	Quantitative	Socio-emotional experiences of pre-service teachers on placement (some focus on sense of belonging)	Main experiences and changes perceived by pre-service teachers: "Professional and institutional socialisation; socio-emotional aspects; vocational aspects; support-resources-supervisors; learning and professional development"; most pre-service teachers gradually achieved increasing levels of school belonging	"accomplished growing levels of school belonging, professional affiliation and approval"; "higher levels of satisfaction regarding the school's resources and overall support"
Caires et al. (2012)	Portugal	High school	Quantitative	Pre-service teachers experiences and perceptions of placement	Medium-high satisfaction levels of <i>professional and institutional socialisation</i> ; perceptions concerning the <i>emotional and physical impact</i> indicate pressure and sense of vulnerability felt by pre-service teachers on placement	"warmth, acceptance and satisfactory conditions...determine their growing sense of 'belonging'"
Evelein et al. (2008)	The Netherlands	Not specified	Quantitative	Realisation of basic psychological needs of pre-service teachers during first placement	pre-service teachers basic needs fulfilment lower than experienced teachers in areas of competence, relatedness, and autonomy	"Relatedness—feeling of belonging"; "contact"; "positive connection"; "positive relationships"
Fajardo Castañeda (2014)	Colombia	Primary	Qualitative	pre-service teachers identity construction (some focus on sense of belonging)	Learning to teach is individual for each pre-service teacher and socially negotiated; choosing to become a teacher is suggested be a "foundational act of belonging to a teacher community"	"belonging to a teacher community" seen as part of identity formation for pre-service teachers
Ferrier-Kerr (2009)	New Zealand	Primary	Mixed methods	pre-service teachers and supervising teachers establishing professional relationships while on placement	Personal connections and understanding of roles were important in successful pre-service teachers and supervising teachers professional relationships	"personal connection"; "personal connectedness"; "establishing professional relationships"; "connecting"; "clicking"; "respect"; "trust"; "acknowledgement in the staff room"
Fox & Wilson (2015)	England	Secondary	Qualitative	How pre-service teachers building personal support networks while on placement	Pre-service teachers accessed offered support and also sought out support when needed, when a sense of belonging developed pre-service teachers confidence increased	"developing strong relationships"; "bonding across the school"; "developing a sense of belonging to school"
Izadinia (2015)	Australia	Secondary	Qualitative	Mentoring relationships on placement and pre-service teachers identity formation	Positive mentoring relationships on placement led to increased confidence levels for pre-service teachers; negative mentoring relationship on placement led to a decline in pre-service teachers feeling like	"lot of time and attention and resources"; "supportive relationship founded on mutual respect and professionalism"; "felt a strong sense of belonging"; "did not feel welcomed"; "lack of personal connection";

Author(s)	Country	Schooling Context	Methodology	Main Focus of Study	Findings	Terms used to indicate sense of belonging/limited sense of belonging
					teachers (one theme directly related to bonding across the school—developing a sense of belonging)	“lack of rapport”; “lack of personal connection”
Johnston (2010)	Scotland	Secondary (English)	Qualitative	pre-service teachers problematic experiences of school placement (some focus on sense of belonging through Lave & Wenger’s (1991) “legitimate peripheral participation”)	Pre-service teachers in some cases not able to assimilate on placement where pre-service teachers are seen as “peripheral participants” and do not attain “member status” of their school communities	“feel emotionally engaged in their practice and fully committed to the enterprise of their school community”; “welcoming community where they were recognised, valued and appreciated as having something worthwhile to offer”; “attempts at belonging”; “accepted member of the school team”; “marginal people”; “unwanted guests”; “positive student identities of belonging”; “inability to experience ‘belongingness’”; “legitimate peripheral participation (Lave & Wenger, 1991)”; “not seen as legitimate by more experienced colleagues [supervising teachers]”
Jones et al. (2014)	USA	High school (agriculture)	Qualitative	Pre-service teachers experiences of mentoring relationships on placement	Three steps of successful mentoring relationships: personality, community and access, and trust and communication (sub-theme identified included feelings of belonging)	“community and access included feelings of belonging”; “belonging to the school and community”
Laker et al. (2008)	England	Secondary schools	Qualitative	Explored changes of support for pre-service teachers during placement	Sources of support for pre-service teachers were formal (college tutors and teacher tutors) and informal (other pre-service teachers, host families and other teachers)	“social connectedness—‘habitus’”; “sense of belonging and common shared values or experiences”
Maynard et al. (2014)	USA	Early childhood	Qualitative	Pre-service teachers descriptions of their initial experiences on placement in early childhood classrooms	Pre-service teachers talked about their experiences as either belonging or not belonging in the classroom	“belong”; “‘we’ or ‘they’ language”; “communication, support and belonging”; “having a sense of belonging or not having a sense of belonging”; “lack of feeling of belonging”
Passy (2013)	UK	Primary	Qualitative	Investigate outstanding pre-service teachers strategies, attitudes, values and characteristics (focus on Lave & Wenger’s “legitimate peripheral participation”)	Pre-service teachers used strategies to fit-in: High awareness of how they presented themselves at the school (e.g., offering opinions); 2. show their willingness to learn (e.g., willingness to get “stuck in”); 3. proactively managing relationships (e.g., “getting staff on your side”); some participants showed a desire to develop a sense of belonging to the placement school	“Fitting in”; “a sense of belonging”; “avoiding confrontation”; “continuing need to fit-in”; “collegiality”; “relationships of trust and support”

Author(s)	Country	Schooling Context	Methodology	Main Focus of Study	Findings	Terms used to indicate sense of belonging/limited sense of belonging
Roberts & Graham (2008)	UK	Modern Languages and drama teachers	Qualitative	Explored the issue of pre-service teachers' ability for self-direction and their proactive social strategies	Three proactive strategies were identified: <i>tactical compliance</i> , personalising advice, and seeking out opportunities to exercise control	"Fitting in"; "win approval and acceptance"; "walk on eggshells"; "tactical compliance—win a degree of autonomy"
Timoštšuk & Ugaste (2010)	Estonia	Pre-service teachers in study programs for mathematics, physics, arts and a primary teacher	Qualitative	Pre-service teachers professional identity through Wenger's (1998) social concept of learning (learning, experiencing, doing and belonging)	Initial teacher education needs to develop the social side of learning to teach by supporting teacher identity formation	"Belonging to the teaching profession"; "expected to be accepted immediately as equal partners"; "learning as belonging"; "belonging to a social community"; "belonging to the teaching community"
Ussher (2010)	New Zealand	Primary	Qualitative	Pre-service teachers sense of belonging on placements	Placement enabled opportunities for pre-service teachers to be involved in learning communities; involving a range of other teachers, the principal and staff at the schools; pre-service teachers demonstrated more commitment to teaching when they felt they belonged to the school	"schools acted as 'villages of learning'"; developed sense of belonging, accomplishment and inclusion" at the placement school; Pre-service teachers "engage with professionals who made them feel like they belong"; "having a sense of belonging to the base school"; "felt motivation through belonging"; "having sound relationships with [ST]"
Yuan (2016)	Hong Kong	High school	Qualitative	Pre-service teachers identity formation on placement	Pre-service teachers identities are influenced by their mentor teachers; negative mentoring can hinder pre-service teachers' identity formation	"isolation status in the school without a sense of belonging"; "welcomed by school mentor"; "involvement" in teaching duties; "low status in the school"

Demographic features

Figure 2 shows the distribution of studies around the world. Just under one third of the studies (5) were conducted in the United Kingdom, with Portugal, United States of America and New Zealand each producing two relevant studies included in this review. The remaining countries each had one study of relevance to this project.

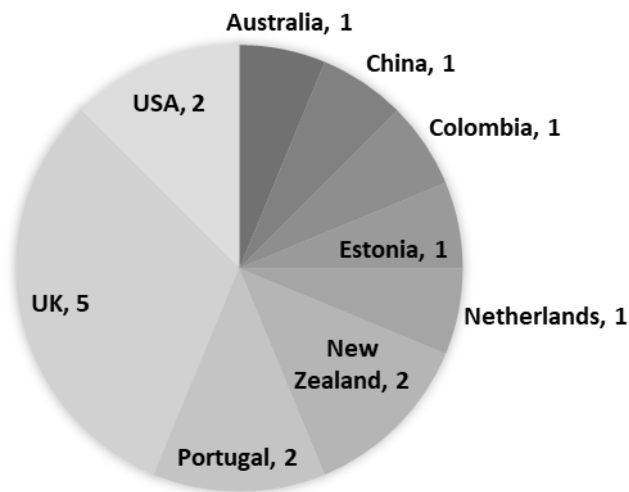


Figure 2: Location of studies reviewed in the systematic quantitative literature review

Figure 3 shows the methodological approaches used in the studies. Three quarters (12) of the studies were conducted employing qualitative research methods while three studies were quantitative in design and one was mixed method. This reveals that the majority of studies are qualitative in design and hence are likely to have limitations in their reliability and broader applicability beyond the context of the study.

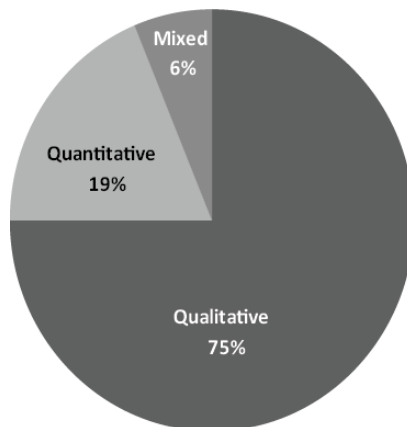


Figure 3: Methodological approaches of studies reviewed in the systematic quantitative literature review

Figure 4 shows the number of studies per year (between 2007 and 2017). This represents a very small number of studies globally on the topic and a pattern of fragmentary, small-scale attention over the decade of the study.

Figure 5 reveals the context of the studies in terms of the schooling sector within which the research was conducted. There is a clear contextual leaning towards secondary settings to conduct research bringing together professional experience, pre-service teachers and sense of belonging.

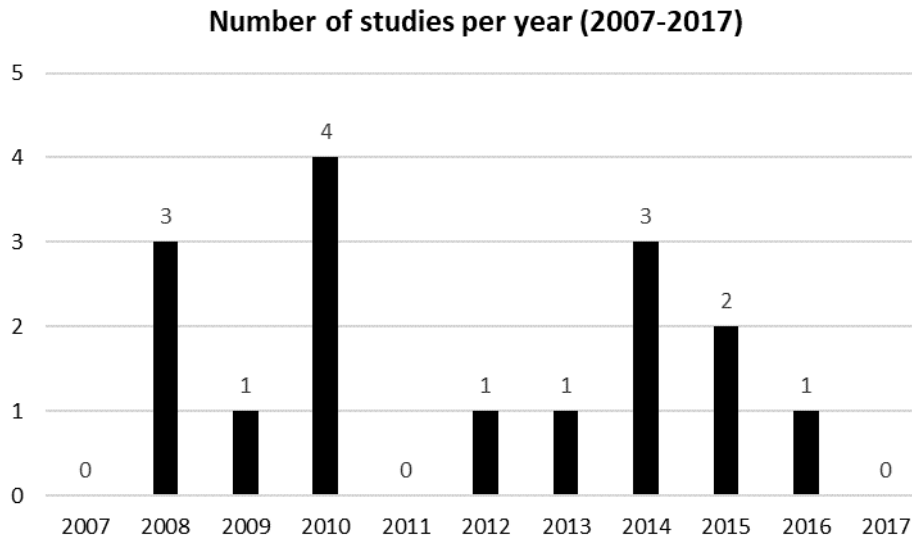


Figure 4: Number of studies per year (2007-2017) reviewed in the systematic quantitative literature review

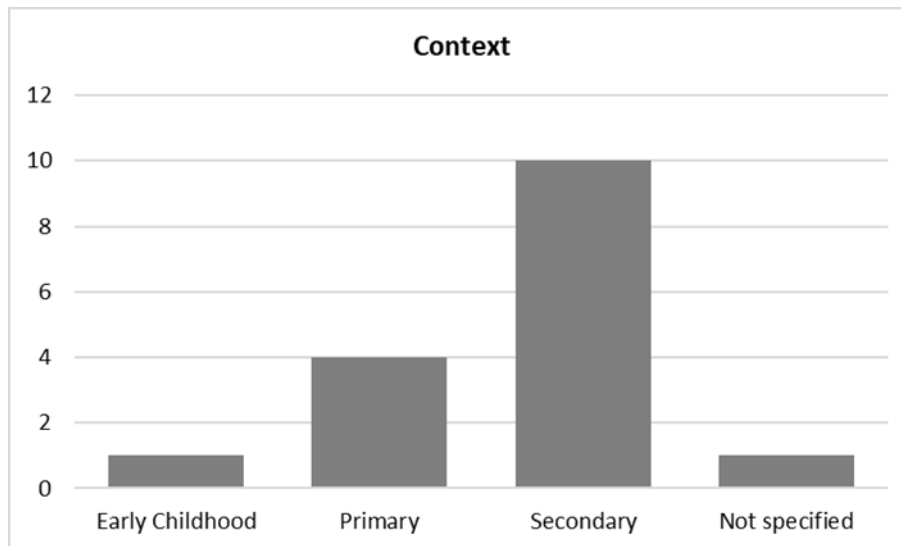


Figure 5: Schooling Sector of studies reviewed in the systematic quantitative literature review

Aims and findings

Table 1 provides insights regarding the individual studies, presented alphabetically by author. While discussing the findings, referring back to Table 1 for elaborations enables a greater understanding of the comments made in this section. The key research undertaken by Ussher (2010) revealed that pre-service teachers demonstrated greater commitment to teaching when they felt they belonged to the school. Ussher’s (2010) study was the only one identified through the SQLR that specifically focused on pre-service teachers’ sense of belonging while on their professional experience placements. The remaining 15 studies had some relevance to the review topic, of which four studies had a tentative connection. The studies with an aim related to sense of belonging explored: socio-emotional experiences of pre-service teachers on placement (Caires, Almeida, & Martins, 2010); pre-service teachers’ identity construction while participating in a teacher community (Fajardo Castañeda, 2014); pre-service teachers’ understandings and descriptions of their teacher identity (Timoštšuk & Ugaste, 2010); pre-service teachers’ problematic experiences of school placement (Johnston, 2010).

Findings of studies that had some relation to sense of belonging revealed the following: positive mentoring relationships on placement related to developing a sense of belonging, and negative relationships on placement leading to a decline in pre-service teachers feeling like teachers (Izadinia, 2015); to some extent the conditions of placements determine pre-service teachers growing sense of

belonging (Caires, Almeida, & Vieira, 2012); relatedness (Evelein, Korthagen, & Brekelmans, 2008)—the feeling of belonging to a group or community is important for pre-service teachers on placement (although this study focused more on relatedness between pre-service teachers and their students); bonding across the school (Fox & Wilson, 2015)—one of the findings from this study related to pre-service teachers bonding across the school and in this process developing a sense of belonging to their placement school; a sub-theme from the Jones et al. (2014) study related to feelings of belonging to the school and community; pre-service teachers talked about their initial teaching experiences in early childhood classrooms in terms of either belonging or not belonging in the classroom (Maynard et al., 2014); some of the pre-service teachers participants showed a desire to develop a sense of belonging to their placement school (Passy, 2013).

The remaining four studies had a tentative connection to pre-service teachers' sense of belonging on professional experience in that keywords or elements within the articles linked with those from the other studies reviewed. For example, Ferrier-Kerr (2009) referred to personal connectedness, revealing that pre-service teachers' use of terms such as *connecting* and *clicking* indicate connection with their supervising teachers, and also discussed other aspects of personal relationships, such as being greeted with a smile, and having informal time for talking with their supervising teachers. Although the article did not specifically mention sense of belonging, these elements are consistent with other literature which outlines the importance of the supervising teachers and pre-service teacher's relationship in developing a sense of belonging; social connectedness of *habitus* (Laker et al., 2008): pre-service teachers experiencing a sense of belonging and common shared values within the school; fitting-in (Roberts & Graham, 2008): pre-service teachers showing compliance in an attempt to affirm their supervising teachers' expectations and gain some autonomy in the classroom; isolation status in the school (Yuan, 2016) where participants shared elements of their placements that left them feeling isolated in the school without a sense of belonging.

Concepts identified from the literature review

The main concepts identified from the literature relevant to our research question—what does contemporary research reveal about pre-service teachers' sense of belonging during their school-based experience—can be categorised under two headings: 1. the quality of the relationship that a pre-service teacher has with their supervising teacher; and, 2. belonging to a teacher community.

Figure 6 shows these key concepts and related themes identified from the literature, and illustrates their connection to pre-service teachers' sense of belonging on professional experience. These are discussed in the following sections.

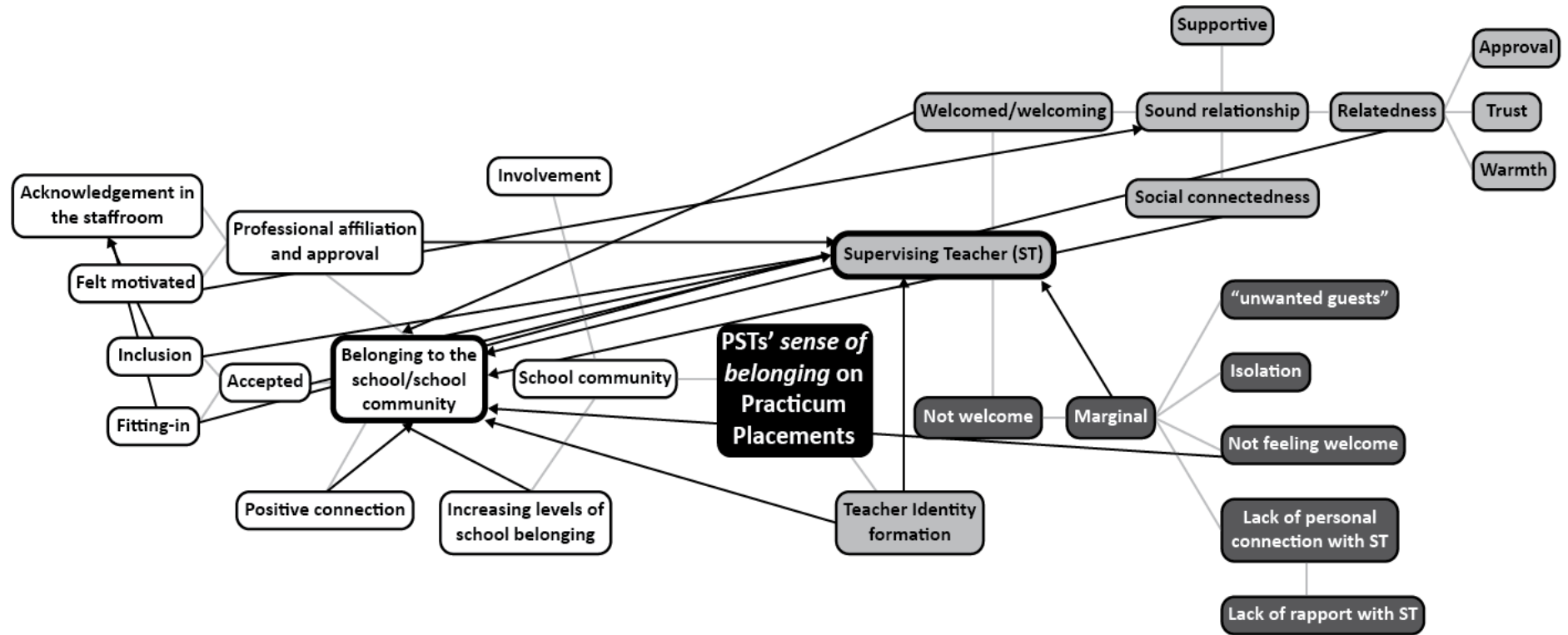


Figure 6: Concept map of themes from the systematic quantitative literature review

Concept 1: Quality of the relationships with the supervising teacher

There is a plethora of research that has extensively covered the nexus of the relationships between pre-service teachers and supervising teachers (e.g., Izadinia, 2015; Leshem, 2012; Martin, Snow & Torrez, 2011). We focus here on where the current literature relates to a sense of belonging on professional experience and the quality of the relationship between supervising teachers and pre-service teacher in this respect.

Having a sense of belonging on placement relates quite emphatically to the quality of relationships that the pre-service teacher is able to establish while seconded to their placement school—particularly important is the *quality of the relationship with their supervising teacher*. This concept overlaps with the second concept identified in the literature, that of *belonging to a teacher community*. However, the quality of the pre-service teacher's and supervising teacher's relationship is the hour-by-hour, immediate relationship that the pre-service teacher has with their supervising teachers in (and out of) the classroom, which develops the pre-service teachers' sense of belonging on professional experience. Timoštšuk and Ugaste (2010) referred to *learning as belonging*, a concept that relates to the quality of learning that a pre-service teacher has while on placement. The quality of learning directly connects to the quality of the relationships between the pre-service teacher and supervising teacher and involves the pre-service teacher's teaching being recognised as a valued contribution made by a capable individual (Timoštšuk & Ugaste, 2010). Thus, within the broad concept of *quality of the relationship with the supervising teacher* we identified seven themes relating to the creation of high-quality relationships and hence, high quality learning as belonging:

1. Welcomed by supervising teacher;
2. Relatedness;
3. Connecting;
4. Supportive relationship;
5. Communication;
6. Trust;
7. Negative relationships.

These will now be discussed in turn.

Welcomed by supervising teacher

Feeling welcomed by the supervising teacher from the very start of placements has been identified as being essential for developing a pre-service teacher's sense of belonging on professional experience. Yuan's (2016) qualitative study set out to explore identity construction of two pre-service teachers through interactions with their supervising teachers on placements, and found that the initial feeling of being welcomed by the supervising teachers from the start of the placement was seen as an important element in creating an initial sense of belonging. Being given some initial responsibility for teaching (e.g., individual support for some students) also provided a sound foundation for setting up an initial feeling of belonging (Johnston, 2016).

Relatedness

Evelein et al. (2008) use the term *relatedness* in their study to denote one of the three basic psychological needs (the other two being *competence* and *autonomy*) that are essential to mental health, growth, intrinsic motivation, wellbeing, optimal functioning and self-actualisation of pre-service teachers. Evelein et al. (2008) identify the need for relatedness as "the longing for the experiencing of positive relations and for engagement with others" (p. 1138). Furthermore, the concept of relatedness is connected to feelings of "belonging to a group or community" (p. 1138) which directly speaks to the focus of our review in that pre-service teachers' *need to feel* high levels of relatedness so that they have positive connections and contact with their supervising teacher (and with their pupils) (Evelein et al., 2008) while on placement. Although Evelein et al.'s study was about pre-service teacher's relatedness to their pupils it does indicate the importance of this concept for

developing pre-service teachers' initial and ongoing sense of belonging with their supervising teacher and hence the wider school community.

Conversely, many of the studies reviewed suggest the importance of creating an environment where pre-service teachers and supervising teachers can develop sound relationships. For example, Ussher (2010) suggests that in order to establish such an environment pre-service teachers and supervising teachers "must be able to establish and maintain quality reciprocal relationships" (p. 104). There is a wealth of studies describing the importance of sound relationships in creating positive practicum experiences for pre-service teachers' learning (Ussher, 2010), and positive pre-service teachers and supervising teachers relationships are an intrinsic part of having a strong sense of belonging on professional experience.

A growing sense of belonging is determined not only by "warmth, acceptance and satisfactory conditions" (Caires et al., 2012, p. 172) on placements, but can also be partially accounted for by the pre-service teacher's sense of self-fulfilment, their growing sense of teacher identity (Caires et al., 2012). When pre-service teachers share similar values with their supervising teachers, in terms of teaching and learning practices, their satisfaction with being a pre-service teacher increases (Jones et al., 2014). This has immense implications for the *matching* of pre-service teachers with supervising teachers that have shared visions and values, helping to ensure genuine acceptance of the pre-service teacher, and creating conditions that actively encourage the development of a sense of belonging from the commencement of the placement.

Connecting

Across the literature *connecting* with the supervising teachers was seen as an essential element for pre-service teachers in developing a sense of belonging on professional experience. In a New Zealand mixed methods study, Ferrier-Kerr (2009) investigated the relationships between four pre-service teachers and their supervising teachers on placement, and found, in one of the themes that emerged from the study, that in order for the relationships to be successful both parties needed to be active in creating positive connections. This theme of personal connectedness stressed the significance of the personal, not just the professional, in terms of these relationships. While this study did not specifically use the term *belonging*, the words "connecting" and "clicking" (Ferrier-Kerr, 2009, p. 792) were frequently mentioned by participants indicating that both supervising teachers and pre-service teachers needed to make personal connections with each other. Moreover, Ferrier-Kerr found that connecting on a personal level with their supervising teachers was most important to pre-service teachers; where pre-service teachers identified the need for personal connections that created a sense of belonging, such as "being greeted with a smile, taking time out to talk informally, acknowledgement in the staffroom and getting to know 'things' about each other" (p. 792). This connectedness was described as "getting to know each other on a personal level" (Ferrier-Kerr, 2009, p. 792), what some participants referred to as the "click factor" (p. 792). It is vitally important that pre-service teachers are able to make a connection with their supervising teachers (Ferrier-Kerr, 2009; Izadinia, 2015). Connecting personally on placement leads to enhanced outcomes for pre-service teachers in terms of professional experiences, teaching competence and feelings of self-worth (Caires et al., 2012; Izadinia, 2015; Ussher, 2010).

Likewise, Laker et al.'s (2008) qualitative study conducted in England with 13 pre-service teachers reported on support structures which these participants drew upon while on their placements, finding that they especially valued direct professional support, guidance and connection with their supervising teachers and the social support afforded by this and other connections within the school. Furthermore, Laker et al. suggested that this demonstrates the importance of *habitus*, an area of social connectedness, wherein the pre-service teachers "were experiencing a sense of belonging and common shared values or experiences within a larger framework" (p. 134). Again, although this study by Laker et al. did not specifically explore pre-service teachers' sense of belonging on professional experience findings indicate the importance of connecting with their supervising teachers in developing a sense of belonging.

Izadinia (2015) explored the extent to which the mentoring relationship on placement supported seven secondary pre-service teachers' vocational identity formation. One of the participants stated that she "'felt a strong sense of belonging' and she 'grew enormously' during her first placement" (p. 5), and further, that the time, resources, frank feedback and the supportive relationship "founded

on mutual respect and professionalism” (p. 5) were a direct result of the connection she developed with her supervising teacher.

Belonging to a social community within the placement classroom (and wider school community), was a necessary component in developing a sense of *learning as belonging* (Timošćuk & Ugaste, 2010). This means that in order to be in the best environment for learning on placement a pre-service teacher needs to have a sense of belonging in that environment, where their activities are recognised as valuable contributions made by a competent individual (Timošćuk & Ugaste, 2010). This recognition usually comes first from the supervising teacher as part of the process of learning (e.g., development of teaching practice), establishing an initial connection by being welcomed, and then developing that connection through relatedness, supportive relationships based on quality connection, strong communication and trust.

Supportive relationships

There is a direct link between a pre-service teacher initially connecting with a supervising teacher and the development of supportive relationships (Ferrier-Kerr, 2009; Izadinia, 2015; Laker et al., 2008). Ussher’s (2010) qualitative study, conducted with nine female pre-service teachers in New Zealand, revealed that relationships and a sense of inclusion were acknowledged as influencing the perceptions of the participants’ placement experiences. These experiences directly connected to pre-service teachers’ feelings of belonging, achievement and commitment to their placement school. It was fundamental to have good relationships with their supervising teacher. Furthermore, Ussher found that effective modelling of teaching practice by the supervising teacher and being given regular teaching opportunities all intertwined with having a sense of belonging to the placement school, along with opportunities to have collegial conversations with a range of staff members about teaching practices.

Similarly, Fox and Wilson (2015) focused on how pre-service teachers gained support on placement through a qualitative study with three secondary pre-service teachers. Findings from this study suggest that the many relationships which supported the development of the pre-service teachers’ teaching practice “can be characterised differently to those which enhanced their sense of belonging to the profession” (p. 93). In other words the development of supportive relationships was dependent on the actions and attitudes of the pre-service teachers, their supervising teachers and others within the placement as a learning environment. As far as developing strong relationships, which were found to be important in developing pre-service teachers’ sense of belonging to the teaching profession and to their teacher identity, pre-service teachers were found to be highly dependent on others, particularly their supervising teachers (Fox & Wilson, 2015) in developing these relationships. When pre-service teachers are fully supported on placement not only can they develop self-efficacy but they can also develop a sense of belonging, which is necessary in order to be able to commit to the teaching profession (Caires et al., 2010; Fox & Wilson, 2015).

Communication

Throughout many of the studies good communication is noted as vital in supporting pre-service teachers on placement. They felt supported when their supervising teachers communicated with them by “checking in” (Maynard et al., 2014, p. 253), integrating their ideas into classroom practices, and connecting on a personal level (Caires et al., 2010, 2012; Fox & Wilson, 2015; Maynard et al., 2014); all areas that are strongly linked to developing a sense of belonging. Maynard et al. (2014) identified three main types of communication—questions, feedback and advice. Availability of the supervising teachers was also deemed to be important in creating an environment for constructive communication. Pre-service teachers tended to feel more like they belonged when the process of communication with their supervising teacher was positive (e.g., being available to offer professional advice). Pre-service teachers’ sense of belonging was encouraged through the communication process when they were “verbally encouraged to participate in specific activities” (Maynard et al., 2014, p. 259), when the supervising teacher checked-in to see how the pre-service teacher was progressing, answering questions and offering advice. Negative communication experiences appeared to inhibit the pre-service teachers’ sense of belonging on their professional experience (Maynard et al., 2014). Maynard et al. posit that the process of creating a sense of belonging through communication may be “highly specific to the preferences of both the student and the supervising teacher” (p. 259), suggesting that further research is needed in this area to gain a greater understanding of the phenomenon of pre-service teachers’ belonging in the classroom.

Trust

The concept of *trust* was identified in two studies (Ferrier-Kerr, 2009 and Ussher, 2010) as potentially being important in developing pre-service teachers' sense of belonging on professional experience. Ussher (2010) suggested that schools which showed "reciprocal trust" (p. 112) encouraged the pre-service teachers to feel that they were accepted and connected to their placement school. Furthermore, this sense of trust came from the school culture which had a direct influence on how pre-service teachers were accepted into the school's teaching community (for further discussion on this point see the section on *Belonging to a teacher community*). Being accepted and being connected are both terms that relate to feeling a sense of belonging. Likewise, Ferrier-Kerr (2009) suggested that by developing trust, respect and rapport through effective communication with each other, pre-service teachers and supervising teachers were able to enhance their professional relationship. Jones et al. (2014) described findings relating to trust and communication, where the supervising teacher genuinely supported the pre-service teacher in assuming the role of classroom teacher, stating that trust could only be achieved by having an approachable supervising teacher. According to Jones et al. trust was modelled through friendship and acceptance, and conveyed through "actions, feelings, and reflections on the relationship" (p. 41) between the supervising teacher and pre-service teacher.

Negative relationships

We have explored the first six concepts we identified from the literature pertaining to high-quality pre-service teacher and supervising teachers relationships and pre-service teachers' sense of belonging on professional experience under the concept of *quality relationships with the supervising teacher*. Within these concepts explored hereto, the following areas relate to negative relationships, the antithesis of those six concepts—lack of: feeling welcomed by supervising teachers; relatedness; connection; supportive relationships; and, trust. We now turn to exploring the two themes we identified under the seventh theme of *negative relationships: not feeling welcome and isolation status within the school*.

Not feeling welcome

For some participants in Izadinia's (2015) Australian study exploring mentoring relationships, pre-service teachers' relationships with their supervising teacher were perceived as somewhat negative, as a result of this their confidence levels deteriorated. Evidence presented by the participants related to not feeling welcome, where one pre-service teacher described her supervising teacher as "distant" (Izadinia, 2015, p. 5), suggesting a level of exclusion where she stated she "did not feel welcomed" (p. 5). As we explored earlier, feeling welcomed by the supervising teacher is important for developing pre-service teachers' sense of belonging on professional experience. Izadinia encapsulates this view in terms of the sense of belonging on professional experience in that pre-service teachers' "lack real power in the classroom" (p. 7). This observation is at the core of the concept of sense of belonging on professional experience placements for pre-service teachers who are expected to take on the role of *teacher*, however are not yet categorised as a *teacher*.

Similarly, a 2016 Scottish study (Johnston, 2016) explored the problematic placement experiences of 14 secondary teachers, offering a nuanced exploration of the difficulties these participants had in becoming *legitimate peripheral participants* (Lave & Wenger, 1991) in their placement schools. This "position on the periphery" (Johnston, 2016, p. 545) suggests a marginalisation of the role of the pre-service teacher and as both Johnston (2010) and Caires et al. (2012) postulate, these feelings of being an "unwanted guest" (Johnston, 2016, p. 545) occur simultaneously with "a strong competing need to feel a rapidly developing sense of belonging to a welcoming community" (Johnston, 2016, p. 545). As a result of not feeling welcomed pre-service teachers' motivation decreased, which in turn affected their learning (Johnston, 2016) on their placements. A perceived inability to develop a sense of belonging on professional experience with the supervising teachers and with the wider school community, underscores the connection between affect and cognition in the development of pre-service teachers' practices (Johnston, 2016). In other words having a strong sense of belonging on placement is vital in order for pre-service teachers to learn the skills needed from their professional experience placements to become successful teachers.

Isolation status in the school

Without a sense of belonging, pre-service teachers lack connections, supportive relationships and have a limited bond with the wider school community and the teaching profession (Johnston, 2016;

Maynard et al., 2014; Yuan, 2016). Yuan (2016) explored the identity construction of two fourth-year pre-service teachers in Hong Kong and found that negative mentoring experiences “dismantled the student teachers’ ideal identities . . . which impinged on their professional learning and growth” (p. 188). One participant was expected to teach without any autonomy and as a result felt isolated within the school without a sense of belonging. Another participant felt “forced to comply with the mentor’s instructions due to his low status in the school” (p. 195) as a pre-service teacher.

In Maynard et al.’s (2014) research there was a dichotomy in the way that pre-service teachers spoke of their placement experiences—in terms of belonging or not belonging. Communication, support and belonging were cited as reasons why their placement experiences went well, but also why they did not. Pre-service teachers were divided in their preference for direct guidance in working out the classroom (and school) culture that they needed to adapt to, and those pre-service teachers who preferred to work this out for themselves (Maynard et al., 2014). Again, the importance of interactions and relationships with supervising teachers was highlighted as being an important element of belonging, or in some cases not belonging. Failure to resolve these belonging tensions can have damaging consequences on student teachers’ development and growth (Dewhurst, 2013).

Concept 2: Belonging to a teacher community

The key concept of *belonging to a teacher community* (and the school community) is inextricably intertwined with the features of quality relationships between the pre-service teacher and supervising teacher as a number of studies have indicated (Fox & Wilson, 2015; Izadinia, 2015; Johnston, 2010; Jones et al., 2014; Timoštšuk & Ugaste, 2010). We have identified from our review that belonging to the teacher community is a key feature relating to pre-service teachers’ feeling a sense of belonging on professional experience (Caires et al., 2010; Fox & Wilson, 2015; Jones et al., 2014). This concept relates to being accepted and belonging to the wider professional community of the school (e.g., staffroom, other teachers, administration, principal, parents, pupils etc.) and is discussed through the literature as an intrinsic part of pre-service teachers’ identity formation. Two key themes were identified under this concept; *establishing professional relationships* and *fitting-in*, we now explore each of these in turn.

Establishing professional relationships

A qualitative study (Jones et al., 2014) conducted in the USA elucidated how three pre-service teachers experienced the relationships with their supervising teacher, and the influence this had on their subsequent placement experiences. Findings support the notion of belonging to the school community, where pre-service teachers’ credibility and self-confidence was enhanced, as Jones et al. affirmed “in order to climb the stairs to a successful mentoring experience, the [pre-service teachers] experienced feelings of belonging to the school and community, and had open access to their cooperating teachers” (p. 41). One participant in Jones et al.’s study was able to successfully integrate into the school community by assuming all teacher duties (such as “lunch duty and monitoring and supervising homeroom”, p. 41) which gave her prominence and familiarity with other teachers and staff at the school—all leading to an increased sense of belonging to the school.

Correspondingly, a participant in Fox and Wilson’s (2015) study developed a sense of belonging to his placement school by developing solid relationships with a range of teachers and support staff, which also benefited the development of his teaching practice. Belonging to a teacher community and establishing professional relationships was identified by Fajardo Castañeda (2014) as part of the process of identity construction for pre-service teachers, by exploring how pre-service teachers build their professional identities from the interaction between participating in a teacher community and their knowledge systems and beliefs. In endeavouring to explore how belonging to a teacher community shapes and transforms professional identity, Fajardo Castañeda revealed that the process of learning, although individually constructed on placement, is “socially negotiated” (p. 49). Indeed the first act of developing a sense of belonging to a teacher community is choosing to become a teacher (Fajardo Castañeda, 2014). The “nature of belonging to a teacher community . . . is fundamentally connected to the daily experience of teachers’ work and lives,” however, “far from being a harmonious process, belonging to a teacher community may also result in tensions of power and dependence” (Fajardo Castañeda, 2014, p. 57). This therefore requires the pre-service teacher to negotiate power and dependence with the supervising teacher, and with the wider teaching community of the school. Likewise, the concept of professional and institutional socialisation was

found to be paramount in accomplishing “growing levels of school belonging, professional affiliation and approval” while on placement (Caires et al., 2010).

Seemingly simple acts from the teaching community, such as acknowledgement in the staffroom, led to a growing sense of belonging for pre-service teachers (Ferrier-Kerr, 2009). This type of recognition shows pre-service teachers being accepted as members of the school teaching team (Johnston, 2010), where schools act as “villages of learning” (Ussher, 2010, p. 113) and this helped to develop a sense of belonging for pre-service teachers as they could engage with other teachers who made them feel like they belonged, were included, and were able to contribute to and be part of the whole school community (Ussher, 2010). Where pre-service teachers were included in “a village for learning” (Ussher, 2010, p. 113) (where pre-service teachers are included in the wider school community and social contexts of their placement school), they were able to become a valuable part of the “social, professional and cultural milieu of the school” (p. 113). Ussher further suggests that this sense of belonging created by a village for learning encouraged pre-service teachers to dedicate more time and effort to their placements. In a sense this would also place the pre-service teacher in a sound position for enhancing connections with other teachers and staff at the school, thereby increasing their sense of belonging. Findings emphasise the value of pre-service teachers forming relationships with other teachers at their placement school, suggesting that connecting with other staff enhances the success of the placement, and of the pre-service teacher’s learning in that placement setting (Ussher, 2010). All of the pre-service teachers in the study felt increased motivation in learning on their placements through having a sense of belonging, and as a result put more effort into their teaching practices (Ussher, 2010). Participants reported working hard to produce results, thus encouraging “other ‘villagers’ to reciprocate” (Ussher, 2010, p. 112) consequently, creating an increased sense of belonging for others as well. Fox and Wilson (2015) concur, emphasising that “bonding across the school” (p. 99) is important in developing a sense of belonging for pre-service teachers on their placements. Again, the connection between pre-service teacher learning and having a sense of belonging is evident.

In some instances, pre-service teachers expected to be accepted immediately as part of the teacher community in their placement school “as equal partners” (Timoštšuk & Ugaste, 2010, p. 1567). When this did not occur the pre-service teachers felt somewhat disillusioned. This qualitative study of 45 pre-service teachers conducted in Estonia explored the development of pre-service teachers’ teacher identity (Timoštšuk & Ugaste, 2010), and one of the main findings related to pre-service teachers’ sense of belonging to the teacher community. However, only some of the participants saw themselves as belonging to the teacher community, the researchers found that for some it was the opposite—when pre-service teachers’ “motives for becoming a teacher were questioned, [they] felt as if teachers had no faith in them” (Timoštšuk & Ugaste, 2010, p.1567) and took this personally, rather than as part of a developmental process and as an evolving part of belonging to the teacher community. One of the participants noted that if they were not supported in engaging with the wider teacher community by the supervising teacher then they “were treated like a stranger” (p. 1567). Timoštšuk and Ugaste concluded that more emphasis should be placed on the social aspects of learning to teach in ITE, instead of the current emphasis on self-reflection, questioning the productiveness of focusing on the self as a developing teacher in many ITE programs.

Fitting-in

Along with establishing professional relationships as part of belonging to a teacher community, a number of studies highlighted the importance of fitting-in during professional experience. For example, a qualitative study (Passy, 2013) exploring the characteristics of highly successful pre-service teachers conducted in the United Kingdom (UK), with 18 primary school pre-service teachers, found that these students needed to feel that they *fitted-in* with the fundamental values of their school. This reinforces the importance of the schooling context in developing and supporting the commitment of pre-service teachers to the teaching profession (Passy, 2013) and in developing their sense of belonging, not only to their placement school, but also to a teacher community.

In Passy’s (2013) study the pre-service teachers proactively engaged a range of strategies in endeavouring to fit-in with the school, and consequently actively established opportunities for learning. Passy identified three such strategies that highly successful pre-service teachers were employing to increase their sense of belonging:

1. Being highly aware of the way in which they were presenting themselves in school (e.g., thinking about what they said; being careful in offering opinions);
2. Giving a practical demonstration of their desire to learn and to contribute (e.g., always doing what was asked; being ready to help in any way);
3. Proactive management of their relationships within the classroom and school (e.g., “getting staff on your side”, “getting on with everyone” (p. 1069) and avoiding confrontation to earn the trust and confidence of staff members).

Other studies discussed ways that pre-service teachers endeavoured to fit-in with the prevailing values in their placement schools (Caires et al., 2010; Fajardo Castañeda, 2014; Roberts & Graham, 2008), seeking to “win approval and acceptance” and “walking on eggshells” (Roberts & Graham, 2008, p. 1405). Roberts and Graham’s (2008) qualitative study investigated 32 pre-service teachers’ capabilities in using proactive social strategies while on placement. Findings from the study suggest that pre-service teachers use such strategies as “fitting in as tactical compliance” (p. 1405) during the early period of their placements in order to gain acceptance and approval. Tactical compliance as fitting in is a “prerequisite” to gaining more independence (Roberts & Graham, 2008, p. 1405). There was an immense need for pre-service teachers to be careful at the beginning of their placement in working out “how to behave to best personal advantage” (p. 1405). The need to fit-in was viewed as both “an unfortunate necessity when dealing with a very controlling mentor” (p. 1406), and as a way of gaining more autonomy in the long term, constituting “a period of watchfulness, the avoidance of *faux pas* [emphasis in original]” (p. 1408); seen as an indispensable approach for individuals entering an existing group as a prospective group member (Roberts & Graham, 2008). This early period of tactical compliance varied in duration in relation to differences in individuals. Pre-service teachers then sought more opportunities to exercise control and try-out teaching practices (Roberts & Graham, 2008). Therefore, fitting-in can be seen as an early approach to assimilating into the placement classroom and prevailing culture of both class, staff and wider school community; all vital elements in creating a sense of belonging on placement.

Conclusion

This systematic quantitative literature review set out to explore empirical studies that had a focus on pre-service teachers’ sense of belonging on professional experience. Specifically, it aimed to address the following research question: *What does contemporary research reveal about pre-service teachers’ sense of belonging during their school-based experience?*

Of the initial 44 studies identified, only 16 were found to have some relation to sense of belonging, with 11 studies having some relevant findings connected to the aims of this review, and four of these having a relatively tentative connection. Our review has clearly demonstrated a significant gap in the field in relation to research that specifically focuses on this area, with only one study identified that had a direct focus on pre-service teachers’ sense of belonging on professional experience—that of Ussher (2010). We have attempted to draw from the studies concepts that present a preliminary review of this area from the limited research available. We are left with no doubt that there is a need for quality research in the area of pre-service teachers’ sense of belonging whilst on professional experience, especially given the expectations placed on this aspect of development of ITE students as they form their identity as a teacher.

The literature examined in this review establishes that two key factors need to be in place in order for pre-service teachers to have a strong sense of belonging to their professional experience school and to their supervising teacher, and indeed their pupils and the classroom(s) where they teach: *quality of relationship with their supervising teacher* and with the school community (e.g., other staff and students); having a strong sense of *belonging to a teacher community* (e.g., schools acting as a “village of learning”, Ussher, 2010, p. 103). When conditions such as being welcomed, relatedness, connecting, supportive relationships and trust are developed between the supervising teacher and the pre-service teacher, there is considerable growth in the pre-service teacher’s identity development as a teacher and their learning to become a teacher. Warmth, acceptance and satisfactory conditions determine their growing sense of belonging (Caires et al., 2012) where pre-service teachers feel motivated (Ussher, 2010) to do well through this sense of belonging and involvement in teaching duties (Yuan, 2016) that have a degree of responsibility, and support basic psychological needs of competence, relatedness and autonomy (Evelein et al., 2008).

An important observation from the literature relates to the term *feeling*, pre-service teachers *feeling* that they had a sense of belonging on placement, which is a relatively subjective term. Given the literature review findings, although *feeling* a sense of belonging during professional experience is subjective, the key actions taken by the school, the school staff, the supervising teacher, and the pre-service teacher can enhance or deny this *feeling* of belonging. Findings from Izadinia (2015) suggest that ITE programs should evaluate supervising teachers in relation to their character, attitudes, beliefs, teaching competence, experience, interpersonal skills and communication, and specifically train supervising teachers for their roles.

We have revealed from the literature the importance of developing a sense of belonging during professional experience for pre-service teachers, and we have emphasised the significance of having a sense of belonging for learning and success. Moreover, we have outlined some ways that demonstrate how pre-service teachers can be supported to feel that they belong, and are a valued part of their professional experience classrooms and school communities. However, as only one study was identified that specifically focused on this phenomenon, it must be recognised that there is a paucity of research in this area. Hence, this review reveals an imperative for further quality research to explore pre-service teachers' sense of belonging on professional experience as an important contribution to the evolving field of initial teacher education.

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Clarifying Food Technology teachers' professional identity

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Abstract

If a teacher of food technology (FT) within technology education (TE) uses a holistic approach to teaching secondary students, the advancement of their professional identity as a FT teacher is reliant upon the implementation of essential problem solving concepts. During the period of 2012-2017 FT underwent major curriculum changes as it was challenged as a secondary course by hospitality and this succession of curriculum change generated high levels of tension and confusion), resulting in a change in identity for secondary technology teachers and a resistance to further curriculum changes.

This study, focused on the professional identity changes required to support the modifications to the TE curriculum, particularly food technology and identifies a way to promote professional identity transition. It demonstrates how the developing professional teacher identity is impacted and identifies the factors causing the greatest change. The focal lens is on the coursework and how authentic activity, including the Technology Day, held at a local secondary school, leads to a solid understanding of Technology Education. It uses personal folios, online reflective journaling and interviews as a way to trace the professional identity change and the results are presented using the Logic Framework Model.

This research makes an important contribution to the field of Food Technology by identifying the factors that promote professional identity change in preservice TE students. The research findings inform higher education ITE programmes, whose aim is to promote a transition of a preservice student's professional identity.

KEYWORDS: FOOD TECHNOLOGY EDUCATION, PROFESSIONAL IDENTITY CHANGE, HIGHER EDUCATION, PRE-SERVICE TEACHER

Introduction

This study researches and identifies the factors that shape the professional identity of preservice Food Technology (FT) education students who transition to university in order to become secondary FT teachers.

Curriculum change is a constant in The Technologies and with a succession of curriculum change teacher's experience high stress levels and turmoil resulting in a resistance to further curriculum change (Howard & Mozejko, 2016) and a change in teachers identity (Harfield, 2017; Williams, 2018). This study focuses on the professional identity changes required to support the modifications to the NSW FT curriculum that now includes hospitality—a Vocational Education Training (VET) course, as an essential component. It makes an important contribution to the field of teaching Food Technology in secondary schooling by identifying the factors that promote professional identity change in preservice FT students. The findings will inform higher education TE programmes, whose aim is to promote a transition of a preservice student's professional identity.

Overview

The FT curriculum in Australia has undergone much change. The offering of Hospitality, a popular VET course, has challenged the offering of Food Technology in its content and nature, the pedagogies used, and its offering in schools. These changes and an inability of teachers and students to differentiate between Hospitality and Food Technology have resulted in internal conflict and a lack of understanding about the FT curriculum. This has resulted in the fragmentation of groups of FT teachers.

Many preservice, FT students, enter the Initial Teacher Education (ITE) university programme believing that they will teach their professional skills using a didactic, lockstep, master-and-apprentice approach. The impact of the current and future curriculum, based on a contemporary, design-thinking approach leaves them in conflict, wondering exactly what and how they will teach the critical thinking required and instead teach the food preparation techniques found in the hospitality syllabus. The reconciliation of these internal tensions and conflicts is required to enable the effective transition of a preservice student to a FT teacher.

This confusion between hospitality and FT has resulted in a fragmented schema of FT in schools whereby preservice TE students and new graduates find it difficult to clearly define what FT entails, to locate their situational professional identity (Hamilton, & Pinnegar, 2017), and implement the expected curriculum changes (O'Connor, & Scanlon, 2015).

Technology Curriculum Change, Tensions and Resistance

Change and reform occur frequently in the TE curriculum. Technological advancements and changes in teaching pedagogies have affected the TE curriculum, workplace activities and employment opportunities for current and future generations. These impacts have resulted in growing support for both curriculum change and school reform (Lynch, Madden, & Doe, 2017). Throughout Australia, changes occur as governments impose technological, political, cultural, welfare and educational changes upon teachers (Bell, 2016). Design thinking and project-based learning are promoted in the Australian Curriculum: The Technologies, and are supplemented with contemporary changes, including the introduction of: blended classrooms wherein integrating technology-based activities are used as a method of teaching (Banas, & York, 2016); flipped classrooms (Howitt, & Pegrum, 2016); and integrated subject learning as STEM or STEAM (Boy, 2017; Doe, 2016; McAuliffe, 2016b). These continue to add change imperatives to the curriculum.

The disconnect in teaching technology as perceived by the profession of technology has posed a significant problem in linking the subject to possible careers, the popularity of this course is in decline. These changes in the TE syllabus has ensured debate between conservative curriculum values and the contemporary demands of a syllabus (Turner, 2012). If secondary students were to study both subjects, Food Technology with food science being taught from a strong perspective, and Hospitality, a syllabus is which is gleaned from Nationally accredited TAFE content, they would graduate with an excellent understanding of all food areas. The great chefs of the world do not use their amazing skills to emulate food production; they research, test, experiment and use their highly developed skills to create products that distinguish them from the norm. Some Australian teachers who suffer from a fragmented professional identity choose to focus on cooking skills in both courses, ensuring that their students do not see a difference and only elect to study one of these subjects, leaving them to flounder in food mediocrity as opposed to excelling in the creations of their chosen area of understanding.

Professional Identity Transition

In the study, the participants enrolled in a TE Foundation course embedded within a Bachelor of Education–TE programme. This research, based on the ontology of experience (Clandinin, 2012) used reflective narratives to capture the preservice TE students' life stories. It is these stories that provide insight into the preservice TE students' professional identity (Woolfolk, 2007; Zare-ee, & Ghasedi, 2017). Identity is shaped by a lifetime of activity and interactions including past and present personal and professional life experiences (Day, Kington,

Stobart, & Sammons, 2016; Furlong, 2016), prior university courses (Smith, 2017) and school and community based encounters and collaborations (Rodríguez-Sabiote, & Gallego-Arrufa, 2015; Woo, 2015).

The term 'social constructivism' (Lev Vygotsky, 1978), argues that cognitive functions originate in, and are products of, social interactions. Learning is not just the assimilation of new knowledge; it is the process used to integrate learning into a knowledge community (Creswell, 2009; Lincoln, & Guba, 2000). Constructing meaning is an active and continuous process, and as a result the students' understanding changed as they progressed through the coursework, completed activities and experiences that challenged and expanded their thinking.

The preservice students' transitioning of professional identity evolves through social constructivism, such as, social group membership (Hooley, 2017). Here the preservice TE students share a common goal of becoming a teacher and share characteristics such as dignity, pride, respect, shared values and beliefs. As they work together to achieve their goal, their professional identity was impacted upon through social constructivism. It is these 'stories' that provide insight into the preservice TE students' professional identity.

Framing Identity Through the Foundation Course

The study examined how preservice FT students' professional identity adapts during the TE Foundation course in the first semester at university and explored how aspects of the course context shaped the professional identity of the preservice FT students and the TE Foundation coursework is underpinned by research. The goal was to create a course that would clarify issues, reduce tensions and assist in the transitioning of the professional identity of preservice TE students. The intervention coursework includes sharing life histories and builds trust and rapport to unify the students so that these connections encourage identity evolution.

An overview of the TE Foundation course is provided in Table 1.

Table 1: Technology Education Foundation Course Content #Note: * Refers to authentic experiences

Week	Weekly Activity
1	What is Technology Education? <ul style="list-style-type: none"> • Rapport and team building—link existing skills and current and future identities. • Recognition of identities/ shift in professional identity (Kennedy, & King, 2018). • Development of entry concept map (Von Glasersfeld, 1991).
2	All About Design! <ul style="list-style-type: none"> • Building a unified cohort that helps participants to come together. • Develop professional identity
3**	Design and Technology—A Contradiction of Terms. <ul style="list-style-type: none"> • Secondary school visits, observing traditional and holistic approaches. • Discourse on school community, classroom teacher, lesson and students. • Authentic experiences-professional identity (Flores & Day, 2016). • Authentic images of self in the position of teacher (Beauchamp, & Thomas, 2019).
4	Critical Thinking for All <ul style="list-style-type: none"> • TE learning imperatives, especially problem solving and critical thinking. • Creation of classroom resources that support the learning imperatives. • Journal reflections about school visits, critical thinking and TE. • Professional identity—synthesis, integration and action (Sachs, 2011).
5*	Design Thinking <ul style="list-style-type: none"> • Interactive visit to a special needs school. • Design Brief: Promoting literacy in students with low reading motivation.
6*	Problem-based Learning and Authentic Activity <ul style="list-style-type: none"> • Implement solutions. Authentic activity promotes critical thinking, (Loepp, 2014). • Connecting academic learning with school experiences promotes deep understandings, which influence the developing professional identity (Zuga, 2014).

Week	Weekly Activity
7 & 8	Food and Technology Education Curriculum <ul style="list-style-type: none"> NSW Technology Mandatory Syllabus; activities and lesson planning for The Technology Day. Students write a design brief and prepare lessons and resources. The lessons are cost effective and used for The Technology Day.
9	Creativity <ul style="list-style-type: none"> Peers teach a 20-minute lesson segment of a lesson with subsequent feedback suggesting how to support teaching (Jones, 2012).
10*	The Technology Day <ul style="list-style-type: none"> Teach and observe peers teaching TE using contemporary practice Lessons taught in pairs; one teaches, the other writes an observation. Unified schema of TE resulting in improved classroom practice (Williams, 2018). Reflective journaling promotes understanding of social identity complexity and, when combined with interactive contexts, they evolve professional identity (Monrouxe, 2009).
11	Sustainable Design <ul style="list-style-type: none"> Adapting lessons to ensure a sustainability lesson focus.
12	Issues in the Classroom <ul style="list-style-type: none"> Discussion: issues about TE to eases identity tensions. Shared reflections provide pedagogical space from the authentic learning activities. This space is necessary to synergise evolving identities (Atkinson, 2019), to encourage reflection and avoid projective identification with stereotypes (Mitchell et al., 2019).
Exam Week	Case Study Participant Interviews

Table 1 describes, and contextualises, the course content, strategies and experiences that are included in the TE Foundation course. The listed course inclusions provide information that, along with the time series analysis make it possible to identify which factors impacted on the preservice TE students' professional identity. Through the reflections documented in the electronic journals, this study scrutinises the factors impacting professional identity and how it empowers preservice TE students to move toward the teacher that they want to become.

Methodology

The multiple case studies use qualitative research to explore changing behaviours, perspectives, feelings and experiences of preservice FT students, in order to identify the factors that have affected their professional identity. Case study research assumes that examining the context and other complex conditions related to a case are integral to understanding a case (Yin, & Davis, 2007) To achieve this aim, the research questions guiding the Food Technology component of this study were:

1. What were the preservice Food Technology students' professional identities at the commencement of the course?
2. How do preservice Food Technology students' professional identities change during the semester-long foundation course?
3. What were the preservice Food Technology students' professional identities at the conclusion of the course?
4. Which aspects of the Technology Education Foundation course impact on the professional identities of preservice Food Technology students?

The four research questions guiding this study inform each section of the Logic Framework Model. Research Question 1 informs us of the participants' initial professional identity attributes. The intervention section of the Logic Framework Model is informed by the responses to Research Question 4, asking how the foundation course affected on the transition of the professional identity of preservice Technology Education students. The changes in the Logic Framework Model (Figure 2) are informed by research question two and the outcomes in the Logic Framework Model are informed by

research question 3, which examines preservice Technology Education students' professional identities at the conclusion of the course.

The relevant case study data comes from multiple sources of evidence including entry folios, concept maps, reflective journals and semi-structured interviews that are used to triangulate results. The Logic Framework Model pulls the findings together and present them. This model was applied to all FT cases. The Logic Framework Model was used as a technique for scrutinizing and undertaking an evaluation of the change in a cause and effect process where the participant's identity was analysed. Interventions affected their identity that resulted in initial outcomes followed by ultimate outcomes

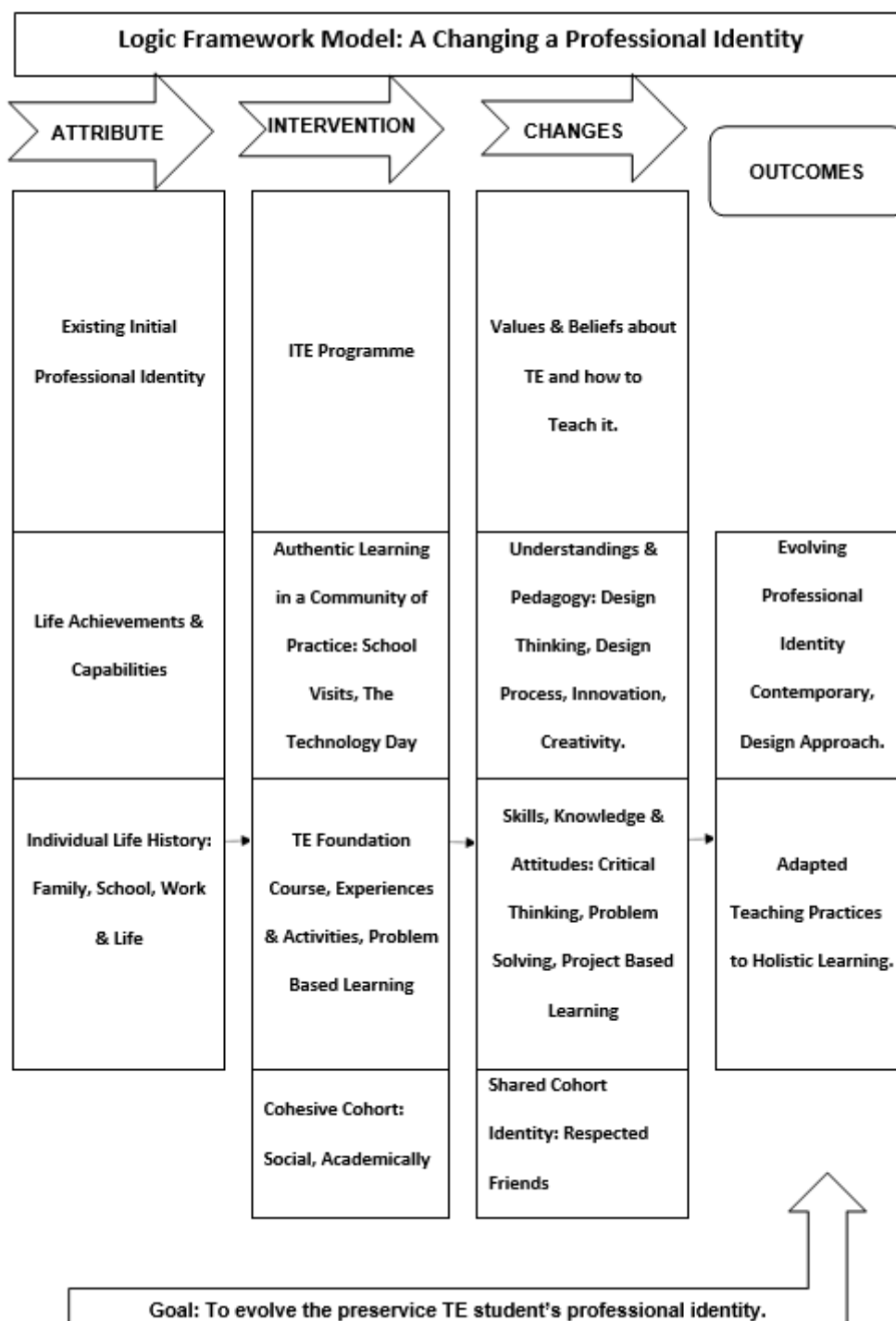


Figure 1 Logic Framework Model

Attributes	Intervention
The attributes refer to the characteristics of the initial professional identity belonging to the participant informed by research question one.	The intervention is the set of activities that the participant experiences that cause a change in their identity informed by research question four.
Changes	Outcomes
The changes occur because of the interventions. They are characterised by changes in identity, beliefs, attitudes, thinking and behaviours informed by research question two.	The ultimate outcomes are the long-term changes that occur after the changes from the intervention informed by research question three.

Figure 2: Logic Framework: Changing Professional Identity (Trevallion, 2018)

The data collected provides extensive evidence to respond to the research questions. This study examined the professional identity transition of preservice TE teachers, including six pre-service Food Technology teachers during a TE foundation course. Through this examination of professional identity transition using a case study approach, this research sought to identify factors that promoted professional identity transition.

Results

The findings show that professional identity is re-formed by the interconnection and the layering of life-influencing factors, such as life histories, university study, activities and interactions within the cohort, working together within communities of practice. Developing preservice Food Technology Education (FTE) students' professional identity is a complex, challenging, relational and multifaceted process. Each of the study's participants successfully combined the influences from their past, their present Technology Education Foundation coursework, the initial Food Technology Education programme and authentic activities within school contexts to develop a powerful social psychology to inform their evolving professional identity.

The Logic Framework Model demonstrates the changing professional identity of each of the Food case study participants. The data for each of the participants was different. The attributes showed that their initial professional identity could be viewed through their individual life histories and their intellectual and social capabilities. Whilst each participant was in the same Food TE programme, the same cohort of students and the same TE Foundation course had similar experiences but different factors within these impacted on their initial identity. This provided a specific list of interventions for each participant. The interventions influenced each participant's initial attributes and causal changes. The Food Technology participants each exhibited individual changes in values and beliefs, understandings and pedagogy, skills, knowledge and attitudes, and in their shared cohort identity. These changes resulted in an outcome for each participant showing an evolving professional identity and adapted teaching practices. This contemporary identity aligns with the holistic approach promoted in the NSW Education Standards Authority's (NESA) 2019 Technology Mandatory and 2019 Stage 5 Food Technology and possibly the 2019 Stage 6 Food Technology Syllabus.

The cross-case comparison of the evidence from the six food case study participants revealed that the Logic Framework Model goal, to evolve the preservice TE student's professional identity, has been achieved in every case. The data in the Logic Framework Model showed that each preservice FTE student entered the FTE programme from a different background with different life experiences, as well as different values, beliefs and goals in life. Whilst different aspects of the intervention affected different students, there were common factors including: the rapport built by the tutor; the close cohesive cohort; and the authentic experiences held in schools, including school observation visits, problem solving with students in schools and The Technology Day. These shared interventions resulted in changes in the participants' thinking, attitudes and values and their teaching and pedagogy, that in turn resulted in a changed identity.

Conclusion

In the world where change is the constant, TE curriculum reform is the norm. Many preservice FT education students and new graduates find it difficult: to clearly define what FT education as opposed to Hospitality education entails, to locate their situational professional identity (Hamilton, &

Pinnegar, 2017) and to implement the expected curriculum changes (O'Connor, & Scanlon, 2015). To overcome this issue, preservice FT education teachers need to embrace change and reconcile internal conflicts in order to evolve their professional identity. The findings from this study provide a pathway for tertiary technology educators to begin this important process.

The study showed that in order to promote a change in professional identity and a willingness to accept and promote curriculum change must be accompanied, in university coursework by:

1. Support of student values and beliefs
2. Building mutual respect
3. Valuing life history and experiences
4. Development of a unified identity within the group
5. Mentoring in group situations
6. Participation in authentic experiences in a community of practice
7. No fear of retribution for opposing views
8. Ongoing, shared opportunities to reflect and evaluate

This study shows the pathway that preservice FT education students follow when facing change that confronts existing values and beliefs. The ontology and support of initial values and beliefs are essential. Those who are facing conflicting values and ideals and undergoing identity challenges because of an altered FT curriculum may resist using the ideas promoted in the new curriculum.

This research supports FT teachers who will need to adapt to the various changes that they will experience throughout their teaching careers. There will be changes to the FT curriculum and syllabus, changes to pedagogies and student centred teaching strategies, changes to the way they will use technological resources in their teaching and learning programs and in the classroom. They will be using e-technologies, m-technologies, virtual reality and apple and android applications in order to provide exciting lessons to stimulate their children. The content that they teach will include new emerging technologies, the problems that arise as the world populations grows, as sustainable food becomes desirable and the production of healthy, sustainable, fast food becomes a must. This can be seen in the rise of vegan foods in restaurants and supermarkets.

The pre-service FT education students must understand that they are responsible for teaching far more than cooking, they will need to use their skills to adapt their thinking, their professional identities as FT teachers to help their own student cope with change. They will need to change their professional identity to accept the change that occurs around them. By learning to take on board change rather than resist or fear it, these preservice teachers will be better prepared to evolve their professional identity.

At the beginning of a foundation course, building a rapport is essential to success. The tutor must understand where the students are coming from, by listening closely to their personal contributions. The tutor responds with positive reinforcement and an explanation of their role in the classroom. This builds an environment that is conducive to a social constructivism situation. When sharing common characteristics, beliefs and values and working together the preservice TE students will come together to build a unified group identity and share developing opinions as they evolve throughout the semester.

In the planned coursework, mentoring evolves professional identity as it allows shared, thoughts and challenges to evolve. Authentic activity is needed in coursework because authentic activity allows the students to relate learning to their community of practice. This ensures students observe and evaluate new concepts, comparing them with traditional approaches. Their reflections challenge their thinking as they connect the observations to their existing understandings. The concepts are presented without fear of retribution and with no marks allocated in order to ensure freedom of speech and opinion development. They are encouraged to risk using new processes and trial them before evaluating their teaching practices. To allow analysis and to promote identity change all preservice students reflect upon their authentic learning activities in their community of practice.

These reflections when shared with their respected mentors and group members who evaluate and synthesise change to professional identity.

When designing a foundation course that is introducing a new concept, or evolving the preservice teacher identity, the sharing of student values and understandings is essential. Observations and reflections on a variety of traditional and contemporary approaches used in classrooms in secondary schools that provide authentic learning opportunities where students trial and evaluate new concepts with change paradigm being implemented, will evolve a preservice teachers professional identity.

FT teachers' each have a different life history, a different background and life experiences. Some will have backgrounds in cooking, as a chef, in home science, in home economics, catering and fast food businesses but this approach to teaching the ITE Foundation course shows that everyone, no matter their background is capable of making changes to their professional identity. The Food curriculum cover a wide spectrum of food topics, it is far more than food technology including industries, product development, cultural impacts, environmental and economic decisions and changes in products through new research and emerging technologies. These are global issues effect FT teachers around the world.

With important changes to FT curriculums being assured, resistance is not going to move you forward. It is for this reason that I recommend this approach to the higher education ITE Foundation course. This way the preservice Technology education students will learn to evaluate change and evolve their professional identity and make appropriate and necessary adaptations.

Author biography

Deborah Trevallion is tenured at The University of Newcastle where she researches, teaches and coordinates under and postgraduate programs and courses in Technology Education. These programs encompass Computing, Food, Textiles, Industrial, Engineering, Design and Technology. Deborah is a globally published author and a Fellow of the Australian Council of Research. She has authored and published best selling textbooks, chapters in books and is regularly published in education journals. She is experienced and passionate about the areas of Creativity, Design, STEM, Problem based learning, Smart textiles and Technology Education.

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Notes for contributors

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