Proceedings of the Canadian Symposium XIV

Issues and Directions for Home Economics/Family Studies/ Human Ecology Education

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About the Canadian Symposium: Issues and Directions in Home Economics / Family Studies / Human Ecology

(summarized from Colleen Grover, HEIE News, June, 1997, p.2)

The impetus for the Canadian Symposium began in the spring of 1990 when Dr. Linda Peterat invited me to come to the University of British Columbia and share what was happening in home economics education in Alberta with home economics educators in Vancouver. Feedback from those in attendance was very positive and they recommended that we meet on a yearly basis and invite other home economics educators to join us. Both Linda and I liked the suggestion and began to formulate plans for the next meeting. We decided on the symposium format because we believed that if we were to meet again that we needed some guiding questions for the talks and that we should provide an opportunity for others by making available proceedings after the Symposium.

We decided that we should invite to our next meeting home economics educators from the universities, the ministries of education, school system supervisors, and presidents of home economics councils of teachers associations. While discussing our plans, we decided that in addition to British Columbia and Alberta, perhaps Manitoba and Saskatchewan would like to join us, and then, we got the idea that if we held the Symposium in Manitoba we could invite all the people we had targeted from every province. Linda then contacted Joyce McMartin in Winnipeg to see what she thought of our plan and to see if she would be willing to assist by looking after the arrangements for the meeting rooms, hotel, and food. Joyce agreed and the first Canadian Symposium: Issues and Directions for Home Economics/Family Studies Education was held in March, 1991 in Winnipeg with approximately 40 home economists in attendance. Several beliefs guided this symposium from the beginning: 1) that all in positions of leadership, including teachers, should be invited to attend; 2) that most attending will also present so the symposium will consist of talking and listening to each other, not outside experts; 3) that the cost of attending and registration be kept minimal by seeking sponsors for the Symposium and using medium priced accommodation; 4) while the numbers of those in attendance may be low, proceedings should be published soon after the Symposium and made available to all for discussion; 5) that action planning to address issues be part of the Symposium so there is some follow through from the discussions.

Symposium I, March, 1991, Winnipeg
Symposium II, March, 1993, Calgary
Symposium III, March 1995, Toronto
Symposium IV, March, 1997, Edmonton
Symposium V, March, 1999, Ottawa
Symposium VI, February, 2001, Winnipeg
Symposium VII, March, 2003, Vancouver
Symposium VIII, March, 2005, Halifax
Symposium IX, March 2007, Toronto
Symposium X, March, 2009, Saskatoon
Symposium XI, March 2011, Winnipeg
Symposium XII, February 2013, Vancouver
Symposium XIII, February 2015, Winnipeg
Symposium XIV, February 2017, London

Following each Symposium, each registrant has received a copy of the Proceedings. The symposia continue to be organized as long as people feel the need to meet and believe that good things happen as a result of the meetings.

Summing Up Canadian Symposium XIV

Looking Back and Looking Ahead: Contemplating Our Approaches to the Advocacy of Home Economics

Joe Tong

The recurring topic of conversation at the symposium this year had to do with the complexities of advocating for home economics and family studies in Canada. As a way of unpacking participants' intentions and crystallizing a collective approach to making home economics visible, we took time to share where we have come from and where we see ourselves going. Participants were invited to "look back" and "look forward" using the major themes of the symposium as guides and prompts for reflection.

Below is a record of participants' recollections (transcribed off post-it notes). Rather than placing post-it notes on a chart, which may confine ideas to fit under "backward" or "forward" thoughts, reflections were placed on a continuum. The gradient of the chart below reflects the continuum between "looking back" and "looking forward" continuum.

LOOKING BACK		
- Great background knowledge of FS – food, child development - Good hands-on projects - Had a good understanding of many courses & curriculum - Had "excellent" organized lesson plans and course content	- Skills focus with limited connection, relevance - May have required more context	- I think I was one of those teachers that have so wanted to "give" my knowledge, expertise…
- "Snow plow teacher" caught just trying to make it through the semester - So focused on the content I often miss the process	- In the past, teaching was skill focused	- A consumerist, managerial framing of Home Economics/Human Ecology - Very specialized, little sense of generalist lens
- Lots of notes, traditional tests - More scientific "experiments" in cooking	- Acknowledging the true diversity and complexity of a home economics educator and the important role we can play in our communities helping one another and families be better	- Traditional model: teach…copy… do… - Passive learning - Classroom confined students
- Role of the teacher as the one with the knowledge and skills	- Content knowledge - Not well versed in other cultures and not completely sure of community contacts to	- Using retired teachers' work they left behind - Choosing recipes students didn't always like because I

	make to help with this. I've started, but it's a process	didn't communicate well enough with them - Assuming that if a recipe worked for me, it would be fine for them (i.e. pineapple muffins)
- Discovering my love of family studies and deciding to teach it	- I have been doing well as a FS teacher over 10 years - My passion for my subject and personal experiences (life!) have led to success delivering content	- Teachers <u>need</u> pedagogical content knowledge (PCK) - They need to be able to teach about something!
- Never to be lined up with worst test scores ever again as a student	- Hiring the most qualified teacher for the job – having supply teachers who did not know course content	- Expected student to have a greater knowledge and skill base with respect to FS
- Be more aware/become more aware of what I don't know	- Isolated provincially from the dynamic and diverse world of home economics in Canada	- Feel provincially isolated versus rest of home economics collective
- PowerPoints and textbooks (still have a place but not the only medium)	- Began to be involved by joining a professional organization	- By incorporating new concepts and ideas and thoughts using teacher inquiry to shape views of pedagogy
- Keep - Educataing - Yourself	- See through learning inquiry - Feel it - Live it | Practice it	- Remember to keep to the roots of family – the "people" - Involve the whole community/storytelling in the sharing of skills
- Joining together disciplines - Opening doors - Youth empowerment	- Always remain relevant, creative, and current with content knowledge	- Network - Educator candidates! - Unlimited possibilities - Reflection
- Not one sizes fits all	- Using what I have learned about inclusion in my special ed course and future classrooms	- Pedagogical consideration with respect to content delivery that engages and increases practical skills and knowledge and competency
- Incorporating family studies values into more courses and introducing more students to the discipline	- Collaboration and learning from others	- New curriculum often means money and time for teachers to get together to plan and share
- Allows for many choices…but in today's world of having so many choices… this is overwhelming for some of our students	- Get connected to the politicians and people who are making policy	- Waking up and raising awareness that "community" in Canada includes a growing gap between "rich and poor" = "connecting to community" i.e. Indigenous and non-Indigenous
- Knowing our history enables our social justice stand	- Past→Present→Future	- Project-based learning - Active learning - Community Connections - Less notes, handouts, etc…

- Will not remain timid when explaining pedagogical changes to administrators when meta-assessment requires the review of all education program	- All voices heard and acknowledged - Valuing multiple ways of knowing, perspectives, paradigms	- Our home ec curriculum is SO rich because it includes skills and social sciences!
- Teacher as guide to steer/nudge students – never a "free for all"	- Incorporate more student first learning, where student choose their learning	- Utilizing technology to connect to our students and encourage inquiry style learning
- New curriculum requires everyone to consider a new perspective	- Develop more independent thinking for kids – what is their prior knowledge - More deeper thinking/inquiry - Need more familiarity with new curriculum and apply what I know…do I need to know more? - Differentiated instruction – more engaging lesson	- "We are already doing it" so how do we do it differently looking ahead
- "If in doubt throw it out" - Lessons - Units - Pedagogy	- Engaging (not just talking at) students with home economics skills and knowledge (including historical social justice, ecological etc…)	- Giving students more power to lead their own learning journey with the teacher as the facilitator
- Incorporation of new knowledge (fabric content) inclusion within class/labs	- Update of curriculum that includes social justice issues - Future of home ec programs at post-secondary level	- Focus on inquiry process for pedagogy
- Take more risks in education - Keep students first - Beg for forgiveness later - Use student interests to fuel facilitation	- Considering my perspective/lived experience (white, upper-middle class, married mom) and looking at the world from other people's perspectives	- No quick fixes, but we need to redefine how we advocate for home economics
- Makes them think, investigate themselves, their past understanding and interpretation	- Value of family time and skill building as a family	- Teaching the whole child - Reaching all aged children - Cross-curricular
- Education is not just about getting a job - Students also need to know about practical skills	- We need to ask our students to self-reflect more so that we understand their frames of reference before we as teacher/scholars design and convey the concepts, ideas, and schemas regarding home economic disciplines. How do our students learn best?	- Stop trying to be an expert in everything - Allow students to be the learners
- Building public - Critical mass support	- Keeping family first in our fast-paced society	- Need/want time to collaborate - More opportunities and funding to network

		- Ways to connect our provinces home economist to the national home ec community
- Helped us do our own professional critique to think about what we do with our student, how to contextualize	- Support inter-provincially - Presenting a united front - Learning from each other's success - Build on this momentum	- Building learning activities my students request - Develop cooking activities more utilizing the produce from the greenhouse and garden project
- Embrace the environmental revolution	- Trust takes time - Does technology allow for this bridge building	- Excited about the new "leads" for community or cultural groups to encourage a partnership or relationship with to better expand my knowledge of other cultures
- How can I turn more of the "content' in my courses into "doing" activities	- My students doing more of the "doing it"	- Where does content take expression in a learner's world
- Increase links between "inclusion" students and regular stream students	- Connect - Connect - Connect - Connect	- Collaborative network creates PR campaign for HE/FS to be used to promote compulsory courses for students
- A holistic, transformative lens/framing of human ecology/home economics as a way to support citizen engagement regarding - Respect for nature - Universal human rights - Economics & social justice - Culture of peace	- I think I need to be much more quiet and let more unfold and go with the flow of the students and their interests, but - I struggle with the assessment/evaluation piece and my obligation to report in numbers - Also, sometimes direction instruction is necessary	- Exposed to new resources and networking opportunities - Hope to follow connections in future and become someone else's connection
- Increase the variety in my teaching strategies	- What is meaningful work that matters?	- Innovative community connections - Students as designers
- Growth mindset as a teacher (not feeling I have to be the expert) - Letting students become the experts	- Creating community involvement in future classes	- The power of professional critique: the practice of how our teaching inspires our students to empower themselves
LOOKING AHEAD		

Dr. Marlene Atleo of the University of Manitoba tweeted "…home ec teachers … have to start writing about what they do." These proceedings are an example of the kind of writing she is talking about. We hope they will inspire you to write and present the work you do. Please note that the final papers prepared by the presenters for publication in the proceedings are in alphabetical order by author.

Analysis of Home Economics Student Learning Outcomes: A case of Saudi Arabian Elementary School Curriculum

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Educators have often used the term "learning-outcomes" synonymously with "curriculum goals" making it difficult to draw a symmetrical divide between the two. Although both student learning outcomes and curriculum goals point to some form of outcome, they differ based on levels of specificity. In other words, while curriculum goals express intended learning outcomes in general terms, learning outcomes are more specific. This is what Anderson and Krathwohl (2001) referred to in their assertion that learning outcomes can be articulated at several levels, including lesson, course, program, degree, and so on. According to Hartel and Foegeding (2004) curriculum goals prescribe the key elements that must be taught in order to achieve the desired learning outcomes. In this way, curriculum goals are viewed as broad, general statements of what the program, course, or activity intends to accomplish (Hartel & Foegeding, 2004; Ministry of Education, 2017). They provide a framework for determining the more specific educational objectives of a program, and describe the intended purposes and expected results of teaching activities and establish the foundation for assessment (Hartel & Foegeding, 2006).

Alternatively, "learning-outcomes" focus on student learning rather than instructor teaching. They are direct statements that describe the knowledge, skills and attitudes that students should reliably demonstrate as a result of undertaking an educational experience (Anderson & Krathwohl, 2001; Hartel & Foegeding, 2006). Very often, they include a verb and an impact that denote what students will do, be able to do and how they will apply the particular skill or knowledge they will have acquired. In other words, learning-outcomes include an active verb + an object + a qualifying phrase. In this paper I intend to analyze the "active verb" in the Saudi Arabian home economics curriculum student learning outcomes to determine whether higher order thinking is a broad or specific curriculum goal. Measurable student learning outcomes are specific, demonstrable and include knowledge, skills, values, attitudes and interests, which allow us to evaluate the extent to which course goals have been met.

Thus, effective learning is highly dependent on the extent to which student learning outcomes are aligned with learning taxonomies, the most well-known of which is Bloom's

Taxonomy's objectives for the cognitive domain (Bloom et al., 1956). In the context of Saudi Arabia, home economics curriculum has general and specific goals for all levels of schooling. This is indicative that each school level's home economics curriculum in Saudi Arabia has precise curriculum goals, and specific prescribed learning outcomes. In this paper, I analyze home economics student learning-outcomes embedded in the Saudi Arabian elementary school national curriculum.

Home Economics in Saudi Arabian curriculum

Home economics, also known as family education, is divided into three categories that include home economics, sewing, health education, and food and nutrition (Ministry of Education, 2017). Home economics includes food and feeding, childcare, family relations, housing and home management. Sewing is very basic and involves flat pattern work and tailoring (Ministry of Education, 2017).

In the Saudi Arabian school system, Home Economics is a required course for girls in grades one through six at elementary school level, grades seven through nine at intermediate school level, and grades ten and eleven at the secondary school level (Ministry of Education, 2017). While all girls' schools (government or private), are directly under the General Presidency for Girls' Education, the Saudi Government prescribes the standard curricula for all schools. It is also important to note that in Saudi Arabia, boys do not study home economics and to date, schools continue to be strictly segregated as boys only or girls only schools (Ministry of Education, 2017).

Bloom's Taxonomy

Bloom's Taxonomy is a multi-tiered scale used to express the level of expertise required to achieve measurable student learning outcomes. Naomee and Tithi (2013) suggest that Bloom's Taxonomy is a convenient way to describe the degree to which we want our students to understand and use concepts, to demonstrate particular skills, and to have their values, attitudes, and interests affected (Forehand, 2010). Thus, it is essential that student learning outcomes be achieved for proper learning and overall cognitive development of the students (Naomee & Tithi, 2013). In this way, Bloom's Taxonomy (Bloom, et al., 1956) is viewed as a framework by which the ways in which students act, think or feel as a result of participating in a learning experience are measured. Krathwohl (2002) refers Bloom's Taxonomy as a framework for classifying educational objectives (Krathwohl, 2002).

The original Bloom's Taxonomy was developed by Bloom and his team in 1956. It aimed at designing a logical framework for teaching and learning with a focus to promote higher forms of thinking in education. It was intended to help educators to understand the fundamental ways in which people acquire and develop new knowledge, skills and understandings (Bloom et al., 1956). Since then, Bloom's Taxonomy continued to expand until as recently as 2001 by various contributors, most notable of whom are Anderson and Krathwohl (2001).

Anderson and Krathwohl (2001), along with their colleagues, reviewed the original version of Bloom's Taxonomy of the cognitive domain. Different researchers present different reasons for which Blooms taxonomy was revised. For example, Sarmiento Sierra (2010) and Forehand (2010) assert that the revision aimed at adding relevance for the 21st century students and educators. The revision was also motivated by the need to address the many criticisms of Blooms original taxonomy (Anderson & Krathwohl, 2001). Figure 1 below shows the original and revised versions of Bloom's Taxonomy.

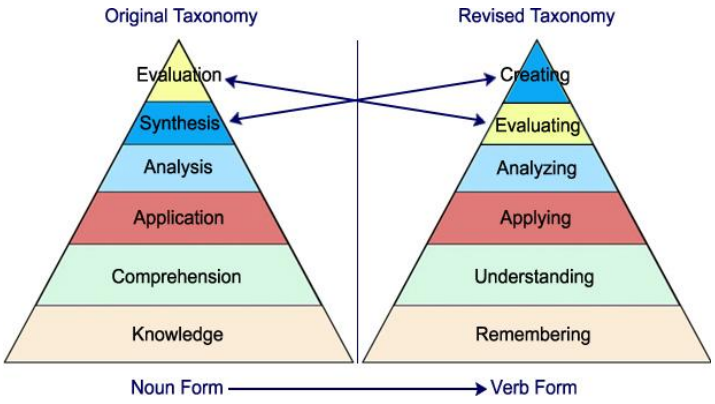

Figure 1: Original and Revised Versions of Bloom's Taxonomy (Adopted from: Anderson and Krathwohl, 2001)

Research Design

The intent of this research was to determine the extent to which the student learning outcomes of Saudi Arabian elementary school home economics curriculum reflect the six cognitive levels of the revised Bloom's Taxonomy, and the extent to which the initial learning outcomes of the 1978 and 2003 version are different or similar. This study uses an interpretive content analysis (Baxter, 1991) and is presented as a case study (Merriam, 1998). The primary questions to be addressed were:

1) To what degree do the 1978 student learning outcomes of elementary school home economics meet the six cognitive levels Bloom's Taxonomy?
2) To what degree do the 2003 student learning outcomes of elementary school home economics meet Bloom's Taxonomy six cognitive levels? And
3) According to Bloom's Taxonomy to what degree are the learning outcomes of the Saudi Arabian elementary home economics 1973 and 2002 curricula similar or different?

Sources of Data

The text used in this study was the Saudi Arabian National Curriculum Elementary School Curriculum for Home Economics, with a specific focus on the student learning outcomes. The analysis draws from two sets of student learning outcomes contained in the 1978 and 2003 versions of the Saudi Arabian National Curriculum.

Method of Analysis

The procedure involved reviewing the curriculum, reviewing the two sets of student learning outcomes (1978 and 2003), preparing the analysis table, categorizing student learning outcomes and analyzing them based on the six categories of the cognitive domain of Bloom's Taxonomy. Finally, the interpretation of the underlying context was followed by comparison of the two sets of student learning outcomes to determine differences and similarities.

Table1: Analysis of Student Learning Outcomes within the 1978 Curriculum

Category	**Student Learning Outcome (SLO)**	**No. of SLO**	**%**
Remembering	-	0	0
Understanding	2. To prepare students to acquire certain skills that fit their natural process of life. 6. To improve students' standard of living. 9. To know the difference among fashions, the fashion's suitability for the seasons, and how to select and care for their clothing. 10.To acquire the habit of taking responsibility as well as helping their families.	4	28.58
Applying	3. To help students apply their experiences and express their different tendencies.	8	57.14

	4. To expose students to the different materials that exist in their environment which they can use in their daily life. 5. To manage their time and money wisely. 7. To apply creativity in completing a decorative project. 8. To practice selected manipulative skills such as hooking and needlework. 12. To use their kitchen equipment properly and avoid misusing them. 13. To learn how to use the various materials skillfully at home, particularly those, which are available in their local environment. 14. To acquire Islamic values and avoid those which are in contradiction with the Islamic ideology such as being extravagant in dressing.		
Analyzing	-	0	0
Evaluating	-	0	0
Creating	1. To develop the students' ability physically, mentally, morally, psychologically and socially. 11. To train students in handicrafts as well as help them develop their own skills.	2	14.28
	Total	14	100

Table 2: Analysis of Student Learning Outcomes within the 2003 Curriculum

Category	**Student Learning Outcome (SLO)**	**No. of SLO**	**%**
Remembering		0	
Understanding	1. To introduce students to natural God-given life-giving resources. 2. To inculcate in students respect for Islamic values and Arab customs. 3. To highlight the importance of family education through content material activities and applications. 4. To introduce students to noble goals that family education seeks to achieve in the community. 5. To provide students with the knowledge and skills that will enable them to deal with the facts of modern technology.	14	53.84

	7. To help students by appreciate health and nutrition rules that facilitate healthy and balanced body growth. 10. To acquire positive attitudes towards social services provided by the state to all citizens. 12. To raise students' awareness about family life requirements and its health, economic and social dimensions. 13. To enable students to form positive attitude toward and appreciation for manual work and respect for workers. 15. To introduce students to physical changes that occur at different developmental life stages of adolescence. 17. To familiarize the students with the need for hygiene and respect in all aspects of life. 20. To educate students about the close relationship between clothing, appearance, customs and Islamic values. 21. To raise students' awareness about health and nutrition for all family members. 23. To instill in students the need to maintain public health and safety.		
Applying	6. To acquire scientific and practical skills of social and economic dimensions of beneficent. 9. To provide opportunity for students to practice professional skills that enable them to invest the time in beneficial activities. 11. To acquire teamwork skills. 14. To train students to draw on the correct scientific method relevant to different situations they are faced with. 16. To encourage students to employ appropriate interactional approaches. 18. To encourage students to practice activities necessary for ensuring security and safety in homes. 19. To introduce students to first aid skills. 25. Encourage in students a positive attitude to participate in local campaigns for cleaning the environment. 26. To acquire communicative skills through drawings, symbols and language.	9	34.61
Analyzing	24. To develop consciousness based on scientific thinking.	1	3.85
Evaluating	22. To develop in students' a sense of economic use of resources in all aspects of family life.	1	3.85

Creating	8. To develop a sense of responsibility in students towards the nation, environment and local community.	1	3.85
	Total	26	100

Result and Discussion

Findings of Question One

As shown in Table 1, there were fourteen Student Learning Outcomes in the 1978 set. The analysis revealed that the 1978 learning outcomes were associated with only three categories, which included *Understanding, Applying* and *Creating*. Student learning outcomes in the *Applying* category appeared at a frequency of 8 out of 14 and a percentage of 57.14% more than *Understanding* and *Creating* categories. Student learning outcomes included were 3, 4, 5, 7, 8, 12, 13 and 14 (Table 1). Learning outcomes associated with the *Understanding* category appeared at a frequency of 4 out of 14 and a percentage of 28.58%. Student learning outcomes included 2, 6, 9 and 10 (Table 1). Student learning outcomes associated with the *Creating* category appeared at a frequency of only 2 out of 14 and a percentage of 14.28%. These learning-outcomes included 1 and 11. Analysis revealed that there were no student learning outcomes associated with *Remembering*, *Analyzing* and *Evaluating* categories. Any absence of learning outcomes associated with these categories may be explained by the prevailing sociocultural societal needs of Saudi Arabia at the time, which emphasized teaching girls' skills that could make good mothers and wives. This is consistent with Bahrani's (1981) view that since elementary school was the first and last level for girls' education in Saudi Arabia, in order to graduate students that could make good wives and mothers, more emphasis was on teaching girls' skills. However, I infer that given the proximity between *Remembering* and *Understanding* categories, learning outcomes associated with recalling information without necessarily explaining it were inferred in the *Understanding* category since one cannot understand what they do not remember.

Overall, findings of question one revealed that in the analyzed sets of student learning outcomes, low level cognitive skills were more evident than higher level cognitive skills therefore, student learning outcomes in lower cognitive categories in 1978 were at 85.72%, compared to student learning outcomes in higher cognitive categories at 14.28%.

Findings of Question Two

As indicated in Table 2, student learning outcomes of 2003 comprised of 26 items. Analysis of student learning outcomes of 2003 revealed that as in the learning outcomes of 1978, there were no learning outcomes in the *Remembering* category. I inferred that absence of student learning outcomes associated with the *Remembering* category in the 2003 set as well could mean that the student learning outcomes in both sets aimed more at developing students' higher order thinking skills rather than merely recalling the information learned. Alternatively, I also infer that *Remembering* category could have been tacitly implied in the *Understanding* category since ordinarily, one cannot understand without recalling. This is consistent with Horner, Zavodska and Rushing's (2011) view that given the hierarchical nature of the cognitive taxonomy, each higher category subsumes the lower category that precedes it.

Student learning outcomes in the *Understanding* category appeared at a frequency of 14 out of 26 and a percentage of 53.84%, more than *Applying, Analyzing, Evaluating* and *Creating* categories. These included student learning outcomes 1, 2, 3, 4, 5, 7, 10, 12, 13, 15, 17, 20, 21 and 23 (Table 2) and that this indicates that student learning outcomes of the 2003 curriculum mostly emphasized the need for students to grasp the information being taught and the ability to explain it. In this way, understanding the facts in the information would enable students explain and interpret, and thereby going beyond the level of just remembering.

Student learning outcomes in the *Applying* category were also ranked second with a frequency of 9 out of 26 and a percentage of 34.61%. These included student learning outcomes 6, 9, 11, 14, 16, 18, 19, 25 and 25 (Table 2). These learning outcomes emphasized students' ability to use the information learned and to be able to apply it to new situations. In this way, students would be able to draw on ideas and concepts to solve particular problems.

Learning outcomes in *Analyzing, Evaluating* and *Creating* categories were rated third. The outstanding finding was that student learning outcomes associated with *Analyzing*, *Evaluating* and *Creating* categories appeared at a frequency of 1 each, denoting one student learning outcome associated with each category at a percentage of 3.85% each. These student learning outcomes included 24, 22 and 8 (Table 2) respectively. Student learning outcomes associated with the *Analyzing* category would enable students to break down ideas into components and clarify reasons for doing so. Student learning outcomes associated with the *Evaluating* category would enable students to appreciate ideas and concepts using appropriate criteria. Yet student learning outcomes associated with the *Creating* category would enable

students to generate ideas, processes or designs and to put them on either written or oral form for dissemination. These three categories facilitate higher thinking order and help students to develop critical thinking and ability to question the information they learn. The low percentage of *Analyzing, Evaluating* and *Creating* related student learning outcomes implies an oversight for the much-needed ability to think critically and to be able to solve one's own problems early in life. Note that even when taken together, student learning outcomes in the higher order cognitive levels presented the lowest percentage of 11.55%.

Findings of research Question Three

For effective presentations of comparisons between student learning outcomes of 1978 and those of 2003, I employed the use of pie charts. Pie charts are easy to present the relative contribution that different categories contribute to an overall total. Harris (1999) suggests that two or more pie charts can be used to compare two sets of data where the categories are the same or similar but there is a change in another variable, such frequencies. In other words, pie charts are visual way of displaying data that might otherwise be given in a small table. Also, given that pie charts are generally easy to show percentage or proportional data, normally presented by category, I found it appropriate to use them.

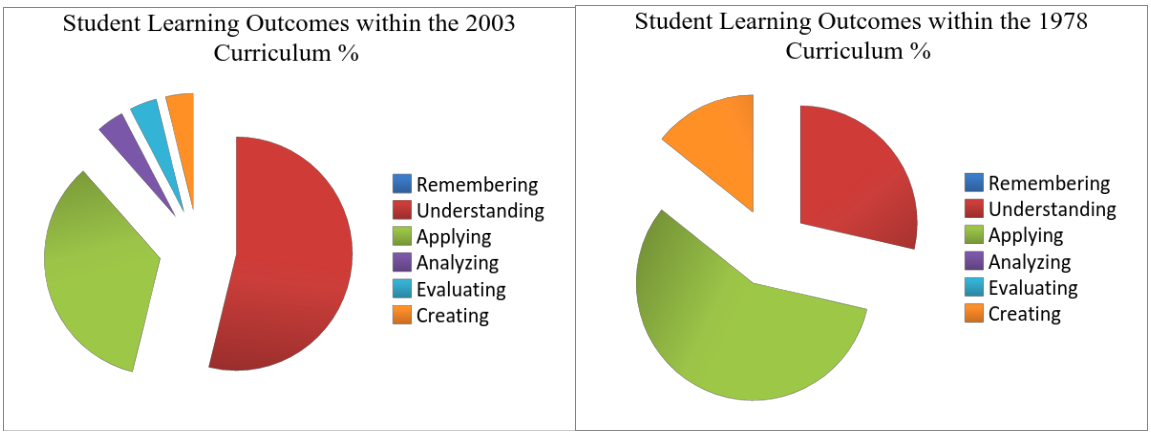

Figure 2: Comparison between Student Learning Outcomes of the 1978 and 2003 curricula

In response to question three, results indicated that both student learning outcomes of 1978 and 2003 displayed an imbalance of student learning outcomes associated with all categories. While student learning outcomes associated with the *Understanding* and the

Analyzing categories were over emphasized in both 1978 and 2003, student learning outcomes associated with *Remembering* category were not given attention in either 1978 or 2003.

Also, findings revealed that unlike student learning outcomes of 1978 that had no learning outcomes associated with *Analyzing and Evaluating* categories, student learning outcomes of 2003 had at least one learning outcome associated with each category except one, which is *Remembering*.

While student learning outcomes associated with the *Analyzing* and *Evaluating* categories were not considered in 1978, they were given some minimal attention in 2003 to an extent of 3.85% each. However, student learning outcomes in the *Creating* category were given more attention in 1978 than 2003 to an extent of 14.28% and 3.85% respectively.

Conclusion

The emphasis of home economics in Saudi Arabia is preparing future mother and wives to respond to the social necessities and adapt the essential skills in today challenging and rapidly changing world. The analysis of Student Learning Outcomes of Home Economics National Curriculum at elementary level showed that the extent to which lower level thinking orders are emphasized greatly surpass the extent to which the higher order thinking categories are emphasized. In the 1978 home economics curriculum student learning outcomes in the lower order thinking categories were evident to an extent of 85.72%, those in the 2003 curriculum were evident at an extent of 88.45%, which was higher by 2.73%. Also, a decline in emphasis on higher order thinking skills in 2003 was noted, which had implications for curricula reform and the development of student learning outcomes in Saudi Arabia. Thus, less emphasis on higher order skills results in Saudi Arabian home economics students leaving the elementary school education system lacking the critical thinking skills that are necessary to succeed not only in higher education, but also in their own communities and home environments. The study calls for the need for curriculum developers to diversify student learning outcomes by incorporating more learning outcomes in higher order thinking categories so that deeper understanding can enable students to better analyze circumstances surrounding various occurrences in their environment and differing viewpoints.

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Design Thinking, Home Economics, and the Revised British Columbia Curriculum

Paula Aquino

Teachers of Home Economics Specialist Association

Design thinking has been selected as a theme for courses offered by the Ministry of Education in British Columbia that fall under the designation of applied design, skills, and technologies (ADST). Formerly called "applied skills", these courses include subject areas such as home economics, computers, and technology education. The design thinking approach raises a number of questions for educators in home economics, including what is meant by the term "design thinking", how it is incorporated into home economics curriculum documents, whether the goals of design thinking and the ways in which is used in curriculum support the goals of home economics education in the K-12 system, and the implications for classroom practice.

What is design thinking?

Morrison (2013) explains the concept of design thinking as being first introduced by Peter Rowe in his 1987 book entitled *Design Thinking.* Rowe was writing specifically in the context of architecture and urban planning challenges, and described design thinking as a process and a method. Since that time it has been applied to various disciplines, including business and education.

However, "process" and "method" do not convey much meaning in and of themselves, and so the definition has remained somewhat vague with various interpretations. Lewis (2008) indicates that design always involved the conception and realization of artifacts, but that with design thinking there is more of a focus on "an intellectual approach through problem solving in which students puzzle over open-ended technological challenges". (p. 257)

Carroll, et al. (2010) describes design thinking as an approach that focuses on developing children's creative confidence. The authors also describe the process as one that encourages students to develop empathy (by considering the end user).

Beamer (2013) writes that design thinking is about applying the typical design cycle to new domains, with an accompanying description of the design cycle which moves from research and creative thinking to prototyping, testing, and implementing, or possibly starting back at the beginning to rework the design. She also points out that various advocates of design thinking typically use their own version of the cycle, and may vary the vocabulary or put more emphasis on one stage or another of the cycle.

Morrison (2013) also admits to the vagueness and proliferation of definitions, including some that are contradictory. Her definition describes it as "a way of thinking that follows a loose framework where insights are collected from a variety of sources that ultimately guide activities toward a solution" (History of Design Thinking section, para. 1).

Lahey (2017) defines it as a bundle of mindsets and philosophies all wrapped up in one term, and continues by saying that the lack of a clear definition makes "explaining, evaluating, and studying design thinking a challenge" (para. 16). However, in consolidating many of the ideas incorporated in design thinking across the literature, he sums it up with a comprehensive description that does provide insight into what is meant by design thinking:

> "At its best, design thinking incorporates proven-effective teaching techniques such as self-directed inquiry and collaborative problem-solving, and dovetails nicely with social-emotional learning curricula that emphasize interpersonal skills such as collaboration and empathy. And the end result of a design-thinking project is often a tangible product, such as a model city, a robot, or a better mousetrap." (Lahey, 2017, para. 13)

Representing Design Thinking

There are a number of graphic representations of the design cycle, which is at the core of design thinking. Figure 1 depicts the International Baccalaureate Middle Years Program Model, which illustrates four main components with sub-sections for each (International Baccalaureate, n.d.). A number of other models illustrate a five-step process, identifying the steps as investigating, designing, planning, creating, and evaluating.

Figure 1. IBMYP design cycle model. This model outlines a four-step design model with sub-categories.

Some design cycle models are referenced as STEM or STEAM models. STEM means science, technology, engineering, and mathematics; STEAM adds arts to the mix. STEM proponents say that art is already an aspect of design, but arts proponents want to see it more obviously

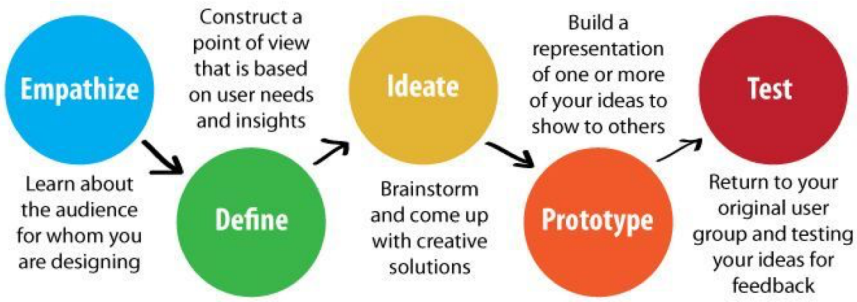

Figure 2. Engineering Design Thinking Process derived from Stanford d.school.

represented (Jolly, 2014). The IB model in Figure 1 tends to use the language seen more often in STEAM models. Stanford D-School and IDEO, both high-profile proponents of design thinking,

use a STEM-based model, similar to that represented in Figure 2 (Standford d.school, n.d.). Note the use of vocabulary with more of a technology or engineering approach—ideating, prototyping, and testing, as opposed to designing, planning, and creating.

Figure 3 reflects the model used in the revised British Columbia ADST curriculum. (This particular model is based on the design competencies in the curriculum, but a graphic representation is not part of the curriculum documents.) A simplified version of this model that includes three components is used in the K to 3 curriculum document (ideating, making, sharing), but all the steps are present from Grades 4 to 12, with increasing complexity approximately every two years (Grades 4-5, Grades 6-7, Grade 8, Grades 9-10, and Grades 11-12). The language and sequence is based on the STEM design approach used by the Stanford and IDEO models.

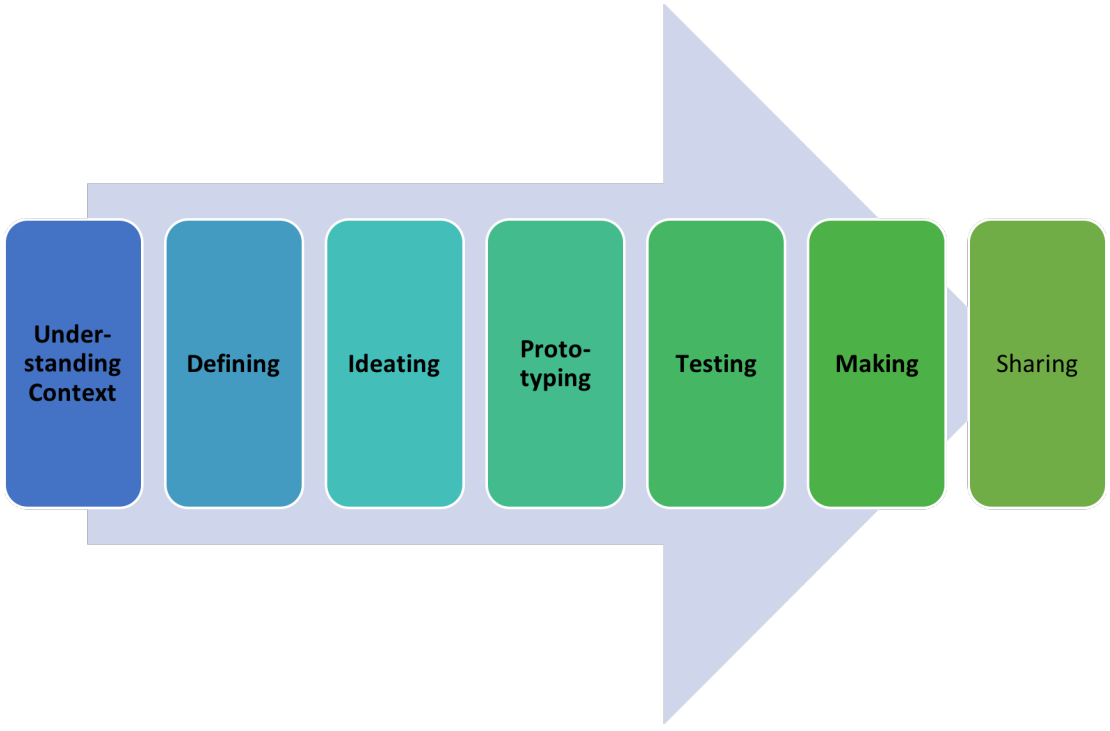

Figure 3. Graphic representation of the design model used in the British Columbia ADST

The Goals of Design Thinking in Education

A number of goals of design thinking are outlined in literature, with creativity coming to the forefront for many authors. Most design thinking proponents believe that traditional schooling has stifled creativity. By engaging in the design thinking process, students are encouraged and given the freedom to explore divergent ways of thinking, with creativity being enhanced in the process (Carroll, et al., 2010; Lewis, 2008; Lahey, 2017). In the design process, students often work on projects in teams, and so are provided opportunities to develop a number of skills including problem-solving, collaboration, interpersonal communication, and presentation (Carroll, et al., 2010; Doppelt, Mehalik, Schunn, Silk, & Krysinski, 2008; Lewis, 2008; Schwartz, 2013). As students explore their design problems and the potential end-users, the process also provides for the fostering of empathy (Carroll, et al., 2010; Lahey, 2017; Wise, 2016). Other goals include providing an atmosphere that fosters student engagement (Doppelt, et al., 2008; Lewis, 2008) and improved academic achievement (Doppelt, et al., 2008).

Looking more specifically at the STEM approach to design, goals appear to be related to specific school subjects. Jolly (2014) states the STEM purpose as follows, "…to integrate and apply knowledge of math and science in order to create technologies and solutions for real-world problems, using an engineering design approach" (STEM section, para. 3). In many schools in the United States, students are able to take a cross-curricular course that incorporates all these subjects and uses a design thinking approach to instruction.

There is not as much information about the goals of STEAM-based approaches. STEM proponents would argue that arts are naturally a part of the creative process in a STEM-based design thinking approach. Jolly (2014) says, "The purpose of STEAM should not be so much to teach art but to apply art in real situations. Applied knowledge leads to deeper learning" (How do

we solve the STEM vs. STEAM conundrum? section, para. 8). This statement reflects that design thinking is not necessarily limited to STEM-based programs, but that it can be applied in many areas.

Responses to Design Thinking

Design thinking is cited as having many positive benefits for students, although there is also acknowledgement that teachers need to have a clear understanding of the purpose and the method in order to foster the empathy, creativity, and innovation the process is meant to encourage. Beamer (2013) and Lahey (2017) both point out that when design thinking is used properly it can be a powerful tool, contributing to learning and change.

Students working with the design process have the opportunity to express multiple intelligences, different learning styles and skills, and personal choice, because it involves open-ended activities with many possible solutions (Doppelt, et al., 2008; Lewis, 2008). Doppelt, et al. (2008) recognize it as a student-centred and active learning approach that recognizes and provides for variation among learning styles. Richmond (as referenced in Schwartz, 2013) describes it as empowering students to explore their interests and passions. Additionally, students are motivated because they are able to learn and apply knowledge to real life situations, while developing interpersonal communication, problem-solving, and presentation skills (Doppelt, et al., 2008).

With design thinking, students who traditionally do not perform well on pen and paper tests of content, can produce highly creative projects and demonstrate knowledge and understanding in alternate ways (Atkinson in Lewis, 2008; Doppelt, et al., 2008). This may include verbal or written explanations of how a prototype or model may be constructed and why it might work, analyzing and critiquing prototypes, and working on improvements. Design

thinking has been described as a natural and meaningful venue for learning both content and design skills (Doppelt, et al., 2008). The collaborative approach to learning which is integral to a design thinking approach allows for a greater number and variety of ideas than when students work alone, and contributes to success in academic and non-academic achievements (Doppelt et al., 2008). Schartz (2013) comments,

> In design thinking students solve real problems, think for themselves, discover knowledge and continually revise and change their models and prototypes, just like they might if working on a project at work. With design thinking, students can learn how to interpret information they've learned, and continue to iterate and experiment different solutions and ideas. In the process, students gain the confidence that everyone can be part of designing a better future. (para. 9)

Another benefit of the design thinking approach is that it reframes failure in terms of learning. The process allows for students to make mistakes and learn from them (Lewis, 2008; Walters, 2011). Richardson (in Schartz, 2013) says that students will become less afraid of failure, because they are constantly figuring out what is or is not working, revising, and improving.

However, there are also questions about the efficacy of design in education. While proponents of design thinking point to the opportunity to build knowledge and skills in the process of designing, others question the ability to design well without knowledge and breadth of understanding across multiple disciplines (Amabile in Adams, 2005; Adams, 2005; Morrison, 2013). Webster (in Lewis, 2008) found that students with a broad knowledge in a subject-area produced more creative results.

Adams (2005) referenced Howard Gardner's description of two types of knowledge that may be necessary for creativity. Gardner suggested that in-depth experience and a long-term focus in one specific area allowed for the building of technical expertise that could serve as a foundation for creativity. He posed that because creativity involved combining possibly disparate elements in new ways, there was a need for a broader focus and varied interests.

According to Morrison (2013), "[i]t is educated, mature students that will be ready to apply Design Thinking – to develop insights from multiple perspectives and solve real-world problems with critical thinking and analytical skills" (Conclusion section, para. 1). She suggests that the design approach is unnecessary and limiting, and that time would be better spent teaching and facilitating learning across a breadth of subjects, rather than teaching what she described as a "cookie-cutter problem-solving process" (Morrison, 2013, When Design Thinking Isn't Applicable section, para. 1).

Like Morrison, others also suggest that design thinking is too much of a "formulaic" or structured approach. Lewis (2008) posed that moving toward an engineering perspective in the design process has introduced more of a mathematical requirement in terms of analysis and prediction. He suggests this may reduce the enthusiasm of children who are drawn to technology education because of its concreteness. He also observes that students do not necessarily always use a linear or standard problem-solving model in their approach to design, and adherence to a strict sequence might stifle creativity. Nussbaum (2011), formerly an advocate of design thinking, now says that it has offered all the benefits it can, and is actually beginning to do harm. He feels that packaging the model into a linear, structured approach took away the "mess, the conflict, failure, emotions, and looping circularity that is part and parcel of the creative process" (para. 6).

While some point to academic achievements and learning through the design process, others have concerns. Lewis (2008) feels that it is difficult to assess student design efforts. Others suggest that it is difficult for students and even teachers to learn how to use, and the open-ended nature of the design process is challenging for low-achieving students (Doppelt, et al., 2008). Doppelt, et al. suggest that the task of navigating content, the design process, and teamwork skills may be too much for some students. One study found that middle-school students, who began the process without a strong foundation in either design or content, came away with a fairly good understanding of the design cycle, but little content learning (Carroll, et al., 2010). The researchers theorized that perhaps design thinking skills should be taught separately from content learning.

Several authors suggest that standard teaching tools of evaluation, reward, competition, and restriction of choice stifle or even destroy creativity (Adams, 2005; Atkinson in Lewis, 2008). Adams (2005) quotes from Amabile's book, *Growing Up Creative*, saying:

> The standard tools we've relied on for so long in parenting and teaching—evaluation, reward, competition, and restriction of choice—can in fact destroy creativity…we must perform a balancing act. We must use enough constraint to give children a sense of predictability, but not so much that children feel the only reason they're doing something is because they have to….The trick is to set limits in a way that maintain their intrinsic motivation. (Amabile in Adams (2005), page 15)

Design in the British Columbia Revised Home Economics Curriculum

In British Columbia, home economics is contained under an umbrella of subjects formerly called applied skills and now called applied design, skills, and technologies (ADST). The curriculum is composed of:

- big ideas or general understandings students should gain in ADST courses
- curricular competencies, which indicate what students should do
- content, or what students are supposed to know

A team from multiple disciplines (technology, computers, business education, hospitality tourism, home economics, and media arts) worked on the big ideas and curricular competencies, which are the same for all courses categorized as ADST courses. The design element in the competencies was introduced by consultants hired by the Ministry of Education and adapted by teachers on the curriculum team. Teams from the various subject areas, such as technology or home economics, worked on the content for their specific courses.

Six goals are stated in the introduction to the ADST curriculum. They indicate that "students are expected to:

- acquire practical skills and knowledge that they can use to bring their ideas from conception to fruition
- develop a sense of efficacy and personal agency about their ability to participate as inventors, innovators, and agents of change to solve practical problems in a rapidly changing world
- explore how the values and beliefs of cultures, including local Aboriginal cultures, affect the development of products, services, and processes
- understand the environmental implications of the products they are designing and constructing
- investigate and actively explore a variety of areas, including aspects of Business Education, Home Economics, Information Technology, and Technology Education, and

new and emerging fields, in order to develop practical hands-on skills and make informed decisions about pursuing specialized interests for personal enjoyment or careers

- develop a lifelong interest in designing, making, and evaluating products, services, and processes, and contributing through informed citizenship, volunteer work, or their careers, to finding and solving practical problems" (Province of BC, Goals section, para. 1)

In examining these goals, it is apparent how much emphasis is placed on the design process and what it is expected that students will be doing in classrooms (bring ideas to fruition, participate as inventors, development of products, designing and constructing, develop an interest in designing). Skills and use of technologies (including tools or equipment) appear to be of secondary importance (acquire practical skills and knowledge, develop practical hands-on skills).

This impression is further reinforced when looking at the curriculum document. (See the appendix for a copy of the ADST learning standards for Grade 9, adapted to show the Grade 9 big ideas, curricular competencies and only some of the content areas, including Food Studies.) The big ideas, which would be the same for all Grade 9 and 10 ADST courses, include:

1) "Social, ethical, and sustainability considerations impact design.
2) Complex tasks require the sequencing of skills.
3) Complex tasks require different technologies and tools at different stages."

(BC Ministry of Education, 2016, p. 1)

The curricular competencies are also the same for all Grade 9 and 10 ADST courses, while the content is specific to the various subject areas. In the Appendix document, the impact of the design thinking approach can be visualized with most of the three-page document detailing

that aspect of the curriculum. A word count of the various sections of the curriculum reflects that approximately 67 percent of the curriculum is devoted to design thinking, with skills, technologies and content sharing the remaining 33 percent.

The design model in the revised BC curriculum, as pointed out earlier, is a STEM-based model using the language of prototyping, iterating, and testing. It also contains a number of marketing-based references, referencing the "end-user" and how students might advertise or sell their products.

Design Thinking and Home Economics

While the use of a design thinking approach appears to have potential for enhancing student engagement and achievement, other questions arise from the home economics curriculum documents. Only about twelve percent (the content) of the curriculum appears to specifically address Home Economics skills and knowledge. The remainder, which applies to design and skill development, is written in a more general fashion, because it applies to all ADST courses. Consideration then needs to be given to whether this curriculum supports the goals of Home Economics and what we in Home Economics want for our students.

The International Federation of Home Economics (IFHE) iterates that as a curriculum area, home economics "facilitates students to discover and further develop their own resources and capabilities to be used in their personal life" (IFHE, 2008, Home economics section, para. 3). Smith and deZwart (2010) provide a more comprehensive description:

> "Home economics . . . helps young people to optimize living in their current familial and personal relationships and to plan well for their future relationships and families. It aspires to increase the resourcefulness of people and help them to live satisfying, sustainable and quality lives caring for themselves and others. Home economics provides

> young people with the opportunity to consider daily living problems beforehand, contributing to development of self-reliant attitudes and abilities and a sense of social responsibility. The skills and knowledge developed in home economics are useful to students not only in their personal and family lives, but also in securing and holding employment in business, industry, and the professions, and participating as active citizens in a democratic society." (p. 21-22)

In the ADST rationale, Home Economics is described as focusing on

> ". . . fundamental needs and practical concerns of individuals and families in a changing and challenging world. It integrates knowledge, processes, and practical skills from multiple areas, including foods, textiles, and family studies, and provides opportunities for creative applications and critical examination from global citizenship perspectives." (Province of BC, 2016, Rationale section, para. 4)

Are these descriptions and goals of home economics in education supported in the revised ADST home economics curriculum? The stated goals of the curriculum do reference skills and practical problem-solving, both of which are important in home economics. However, there is also an intensive focus on designing and creating in the revised curriculum. While this focus is not necessarily excluded in the goals of home economics, it does not appear to be a priority. The revised home economics curriculum does seem to prioritize design over other aspects, and I have some concerns about this in the context of home economics.

I tend to agree with writers such as Morrison and Nussbaum who say foundational skills and knowledge are needed for good design. I believe part of my responsibility as a Home Economics teacher is to provide opportunities for students to acquire that foundational knowledge and skills, rather than to teach them how to follow a system to design products. I

have taught the International Baccalaureate Middle Years Program (IBMYP) in technology (now called "design") which uses a version of the design cycle (see Figure 1, page 4). It was challenging to encourage and build design skills with students who were still learning how to thread a machine and sew a straight line. In more senior textiles classes, when exploring pattern drafting and design, students were challenged with the lack of foundational knowledge or experiences (e.g., how to sew a garment together with no written instructions). Certainly some students were interested in designing, and we worked together to achieve a positive experience, but I found that to be truly successful in these endeavors took significant one-on-one time that was not always possible, given typical class sizes. Students in foods may struggle with recipe development without first developing some practical skills, along with an understanding of the functions of ingredients and a sense of how flavours work together.

Another challenge in the classroom is that not all students are interested in being "designers"; some just want to learn the skills and follow a recipe or pattern. In foods classes when students are provided opportunities to vary or create their own recipe, many still choose to search out a recipe online or bring one from home rather than creating their own.

The intention of the revised ADST home economics curriculum is that the "content" is to be presented through the lens of the "competencies" and the design approach. This method is promoted as being well-suited to personalization and adaption to individual learning styles (Doppelt et al., 2008; Lewis, 2008). However, most design thinking projects are presented with an emphasis on collaborative activity rather than individual. Additionally, any methodology used in the classroom may become boring and repetitive if overused, and the structured, step-by-step model in the curriculum may interfere with the ways students want to approach a project, and stifle creativity rather than encourage it (Nussbaum, 2011). Another consideration here is that

recent research has refuted the idea that individuals learn best if using their optimal learning style, and in fact everyone learns better if multiple approaches to learning are used (Kirschner, 2017). Does design thinking involve multiple approaches, or does it focus on a particular instructional approach?

My final concern relates to the structure of the revised curriculum. In creating a design model that is meant to speak to many subject areas, there are few specific references within the model to the types of activities and learning that take place in a home economics classroom. As such, the design thinking approach begins to look more like a pedagogy than an actual curriculum document that will guide teachers in preparing for their courses. Additionally, the STEM model and vocabulary selected speak more to the type of project-work that might be done in science, technology, or engineering. This creates a lack of connections that would provide stronger links to the goals and objectives of home economics.

Conclusion

The design thinking approach and the format of the revised curriculum is a significant change from previous curriculum documents. Whether this new format will support teachers as they develop instructional strategies and guide students in their learning remains to be seen. Based on the research presented in this paper, certainly the opportunities are there. As a hands-on, experiential approach, design thinking may provide increased opportunities for student motivation, engagement, and the development of creativity. When students work in teams, it can allow for pooling of skills, knowledge, and abilities, as well as the potential to build skills in teamwork, collaboration, interpersonal communication, and presentation.

The goals of design thinking align with the goals of home economics to some extent. Certainly home economics teachers want their students to develop critical thinking and

collaborative skills, and to be creative in their approach to projects and assignments. What may be lacking in the revised curriculum is more of an emphasis on skill development and foundational knowledge as a base for creative activities. The document also lacks direct connections that link design thinking to the content and skills of home economics, for example use of vocabulary such as "creating" rather than "prototyping" would be more subject-appropriate. Whether this approach to curriculum design and instruction enables and empowers teachers as they prepare for their classes and how it will contribute to increased achievement and student engagement remains to be seen. Research will need to be conducted to determine how teachers and students perceive these changes to curriculum, the ways in which teachers approach the use of the curriculum and classroom instruction, and the impact upon student engagement and achievement.

Curriculum is a tool for teachers. It provides information about what is meant to be taught and perhaps some guidelines about how to approach instruction, but in reality it is just a document—some words on paper. No matter what form or approach a curriculum takes, ultimately it resides with the home economics teacher to incorporate the heart of home economics, to bring passion and breathe life into the subject, and to provide learning opportunities that will engage students. The format and approach of this revised curriculum may be somewhat different from previous revisions and design thinking may be unfamiliar, but appropriate professional development, resources, and support will enable teachers to develop proficiency in its use. Ultimately, the goals of home economics will remain—to provide home economics students opportunities to think critically and creatively and to build foundational skills and knowledge that will empower them to be able to lead successful and productive lives, as individuals and members of their family and society.

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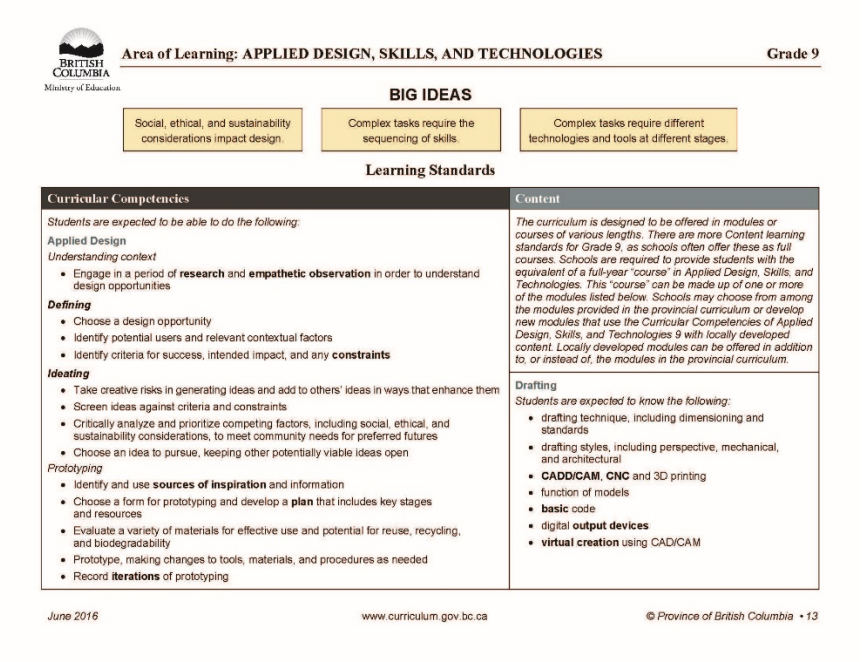
APPENDIX

Adapted ADST Learning Standards for Grade 9 with Big Ideas, Curricular Competencies and Some of the Content Areas, Including Food Studies

(BC Ministry of Education, 2016)



BRITISH COLUMBIA
Ministry of Education

Area of Learning: APPLIED DESIGN, SKILLS, AND TECHNOLOGIES — **Grade 9**

BIG IDEAS

- Social, ethical, and sustainability considerations impact design.
- Complex tasks require the sequencing of skills.
- Complex tasks require different technologies and tools at different stages.

Learning Standards

Curricular Competencies

Students are expected to be able to do the following:

Applied Design

Understanding context

- Engage in a period of **research** and **empathetic observation** in order to understand design opportunities

Defining

- Choose a design opportunity
- Identify potential users and relevant contextual factors
- Identify criteria for success, intended impact, and any **constraints**

Ideating

- Take creative risks in generating ideas and add to others' ideas in ways that enhance them
- Screen ideas against criteria and constraints
- Critically analyze and prioritize competing factors, including social, ethical, and sustainability considerations, to meet community needs for preferred futures
- Choose an idea to pursue, keeping other potentially viable ideas open

Prototyping

- Identify and use **sources of inspiration** and information
- Choose a form for prototyping and develop a **plan** that includes key stages and resources
- Evaluate a variety of materials for effective use and potential for reuse, recycling, and biodegradability
- Prototype, making changes to tools, materials, and procedures as needed
- Record **iterations** of prototyping

Content

The curriculum is designed to be offered in modules or courses of various lengths. There are more Content learning standards for Grade 9, as schools often offer these as full courses. Schools are required to provide students with the equivalent of a full-year "course" in Applied Design, Skills, and Technologies. This "course" can be made up of one or more of the modules listed below. Schools may choose from among the modules provided in the provincial curriculum or develop new modules that use the Curricular Competencies of Applied Design, Skills, and Technologies 9 with locally developed content. Locally developed modules can be offered in addition to, or instead of, the modules in the provincial curriculum.

Drafting

Students are expected to know the following:

- drafting technique, including dimensioning and standards
- drafting styles, including perspective, mechanical, and architectural
- **CADD/CAM**, **CNC** and 3D printing
- function of models
- **basic** code
- digital **output devices**
- **virtual creation** using CAD/CAM

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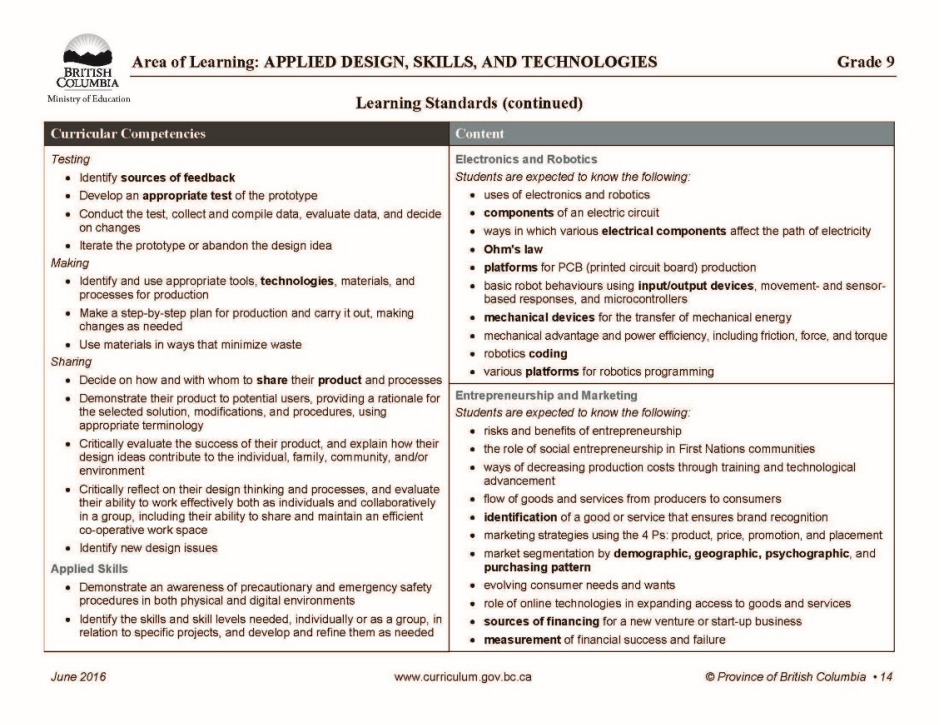
Figure 3. ADST Learning Standards for Grade 9, page 1.



BRITISH COLUMBIA
Ministry of Education

Area of Learning: APPLIED DESIGN, SKILLS, AND TECHNOLOGIES **Grade 9**

Learning Standards (continued)

Curricular Competencies	Content
Testing • Identify **sources of feedback** • Develop an **appropriate test** of the prototype • Conduct the test, collect and compile data, evaluate data, and decide on changes • Iterate the prototype or abandon the design idea *Making* • Identify and use appropriate tools, **technologies**, materials, and processes for production • Make a step-by-step plan for production and carry it out, making changes as needed • Use materials in ways that minimize waste *Sharing* • Decide on how and with whom to **share** their **product** and processes • Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures, using appropriate terminology • Critically evaluate the success of their product, and explain how their design ideas contribute to the individual, family, community, and/or environment • Critically reflect on their design thinking and processes, and evaluate their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain an efficient co-operative work space • Identify new design issues **Applied Skills** • Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments • Identify the skills and skill levels needed, individually or as a group, in relation to specific projects, and develop and refine them as needed	**Electronics and Robotics** *Students are expected to know the following:* • uses of electronics and robotics • **components** of an electric circuit • ways in which various **electrical components** affect the path of electricity • **Ohm's law** • **platforms** for PCB (printed circuit board) production • basic robot behaviours using **input/output devices**, movement- and sensor-based responses, and microcontrollers • **mechanical devices** for the transfer of mechanical energy • mechanical advantage and power efficiency, including friction, force, and torque • robotics **coding** • various **platforms** for robotics programming **Entrepreneurship and Marketing** *Students are expected to know the following:* • risks and benefits of entrepreneurship • the role of social entrepreneurship in First Nations communities • ways of decreasing production costs through training and technological advancement • flow of goods and services from producers to consumers • **identification** of a good or service that ensures brand recognition • marketing strategies using the 4 Ps: product, price, promotion, and placement • market segmentation by **demographic, geographic, psychographic**, and **purchasing pattern** • evolving consumer needs and wants • role of online technologies in expanding access to goods and services • **sources of financing** for a new venture or start-up business • **measurement** of financial success and failure

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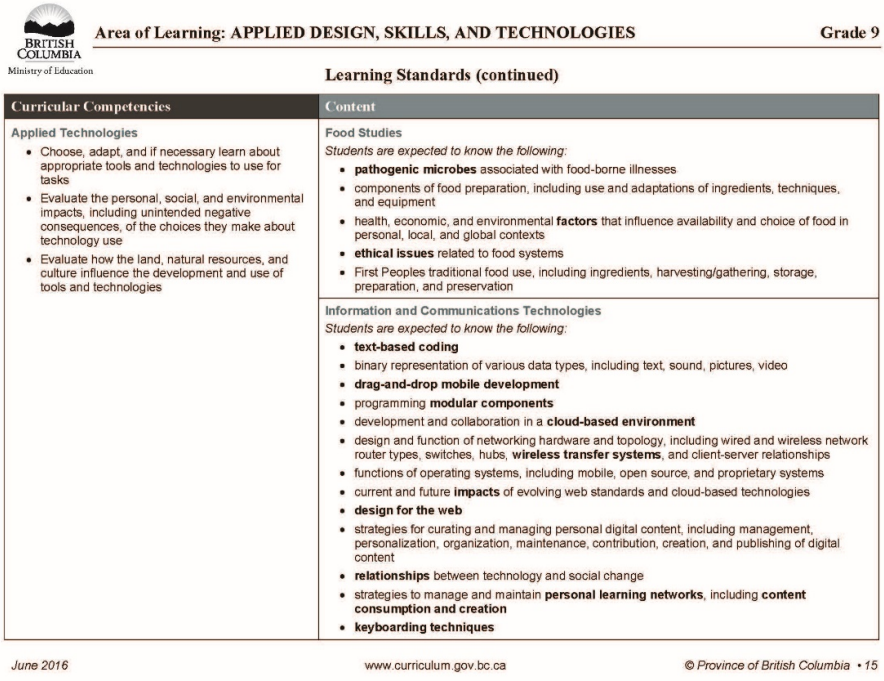
Figure 4. ADST Learning Standards for Grade 9, page 2.



BRITISH COLUMBIA
Ministry of Education

Area of Learning: APPLIED DESIGN, SKILLS, AND TECHNOLOGIES **Grade 9**

Learning Standards (continued)

Curricular Competencies	Content
Applied Technologies • Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks • Evaluate the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use • Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies	**Food Studies** *Students are expected to know the following:* • **pathogenic microbes** associated with food-borne illnesses • components of food preparation, including use and adaptations of ingredients, techniques, and equipment • health, economic, and environmental **factors** that influence availability and choice of food in personal, local, and global contexts • **ethical issues** related to food systems • First Peoples traditional food use, including ingredients, harvesting/gathering, storage, preparation, and preservation **Information and Communications Technologies** *Students are expected to know the following:* • **text-based coding** • binary representation of various data types, including text, sound, pictures, video • **drag-and-drop mobile development** • programming **modular components** • development and collaboration in a **cloud-based environment** • design and function of networking hardware and topology, including wired and wireless network router types, switches, hubs, **wireless transfer systems**, and client-server relationships • functions of operating systems, including mobile, open source, and proprietary systems • current and future **impacts** of evolving web standards and cloud-based technologies • **design for the web** • strategies for curating and managing personal digital content, including management, personalization, organization, maintenance, contribution, creation, and publishing of digital content • **relationships** between technology and social change • strategies to manage and maintain **personal learning networks**, including **content consumption and creation** • **keyboarding techniques**

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Figure 5. ADST Learning Standards for Grade 9, page 3.

Ease and Use of SureQuest™ software to teach FCS and Dietetic Students Menu Development and how food is used to manage chronic disease using traditional heritage food menus

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Abstract

The centenarian tips are in. Family first, having lifelong friends, staying in touch with your spirituality, being a lifelong learner, optimistic, keeping up with current events and maintaining a sense of independence makes up the foundation for living longer. However, in America, moving naturally and keeping the Plant Slant rule of 80% plant sources and 20% animal sources in the menu is a stretch for healthier menu choices for an improved nutritional status and longevity. The use of SureQuest™ foodservice software program has allowed courses which include menu development to assist students in inventory control, food production scheduling and menu planning to develop user friendly skill sets to manage any acute, long time care or wellness facility which produces meals for the healing and prevention of disease to go back to heritage food procurement and production. Course strategies will be shared that can be used in secondary FCS food courses and university FCS and Dietetic food related courses. Fiscal responsibility of capital investment in food procurement in foodservice operations is critical to its success along with promoting healthier choices for disease management and longevity.

Introduction

No Elder in America or worldwide wants to become ill. Elders in most countries want to live productive lives and be of service to others according to longevity studies. The Mediterranean coasts and in particular, Italy, show noticeably lower rates of chronic disease than many other places in the world. Evidence based research has shown that factors affecting longevity include: diet quality, lifestyle choices and exercise throughout the day. The Mediterranean diet and lifestyle choices have been positively associated with better health and

longevity and are based on nutritional choices, which appear to prevent or limit the progression of chronic disease development and management. The Mediterranean way of life and the diet have been studied more than any other culture or meal plan (Sophi et al., 2008 & 2012).

The Native American longs to return to traditional or heritage foods and refers to their *Slow Heritage Food Movement for Community Food Security.* An elaboration of how to embrace healthy aging and promotelongevity through the consumption of the Mediterranean diet or returning to the Native American heritage foods will be explored through a review of the literature. This paper will explore the similarities of the Mediterranean habits of slow cooking, regionalization of food, freshness, small portions and organic ingredients also encouraged in the Native American cultures of America and who need to eliminate or reduce their reliance on the USDA food commodities'. The use of the SureQuest™ software program will be encouraged to use in menu management of heritage foods.

Italian families and Native American families have a lot in common when it comes to a lack of understanding of social exclusion and cause of disease as well as management of disease for longevity. Teaching these concepts in Family and Consumer Sciences courses are possible but is eating the Mediterranean Way possible in America in rural areas as well as feasible inmenu planning? Residents or patrons who are sometimes removed from their families for assisted nursing care often request comfort foods, familiar foods and traditional cooking that are culturally specific to connect with the memory of foods and days gone by. Longevity may have also left them with a disease that requires a specific diet order requiring menu management. Prior to leaving their homes, if they become residents versus patrons often choices may have to be made between having to make financial decisions of purchasing adequate food, medications or paying for housing.

Very few comparisons, if any, have been reviewed in the literature between the similarities and differences between the Native American foods of America and the Mediterranean foods of Italy. During my exploration of Italy several years ago, I realized that the Native American heritage foods and the Community Food Security Slow Food Movement of America and the Slow Food Movement of Italy (Schneider, 2008) had a lot in common. In the

United States, communities are advocating and identify in creative ways to provide nutritious foods that link consumers with local farmers through community based food businesses, community gardens in inner cities and supporting local sustainable food production and distribution. This is not a new concept. In fact, the Native Americans tried to teach this as is evident from the Anasazi, Aztec and Pueblo Native American tribes of the United States (Nabhan, 2010; Dahl; 2006). In numerous attempts to eliminate Native American cultures, exploration and food anthropology has revealed many heritage foods quite a variety of whole foods and were confiscated by the US government at time Indian War and conflicts erupted in America according to Thomas and colleagues (1993). Centuries later, this concept of food production procurement, distribution and security appears to be catching on in the name of healthy aging, longevity and the slow food movement which began in Italy and continues to grow in the United States today from the influence of the Mediterranean slow food movement but also from the American Community Food Security Slow Food Movement (Azzini et al, 2001; Pothukuchi et al, 2002). In order to empower families, individuals and communities to intercept the dangers of food environments with a cheap food model that promotes obesity and diabetes, being mindful regarding food selection is necessary for health at every size even during the trends of prosperity, individualization, abundance, and commercialization for healthy aging of the food secure and the food insecure (Pendergast, McGregor & Turkki, 2012). These ideas must be included in our FCS secondary culinary courses on menu development as well as our university quantity foods and systems management in the dietetic programs.

America's Food System and Disease Promotion

As in the United States decades before, the Italian Slow Food Manifesto caught on in the 1970s when the manifesto stated that a fast life disrupts the habits, pervades the privacy of the home and attempts to force a way of eating known as fast foods (Azzini et al, 2011). This is a belief of America's Native American tribes and clans (Nabhan et al., 2008). The goal of both the Italian Manifesto Slow Food Movement as well as the Native American tribes who are revisiting their traditional or heritage foods and continues to gain momentum in the United States is to rediscover the flavors and savors of regional cooking and banish the degrading effects of fast food establishments (Rood et al., 2008). The slow food idea encouraged an international focus to

return to developing the taste and the pleasure of food and to view food as Hippocrates creed suggests: "let food be thy medicine and let medicine be thy food" (Zesiewicz, 2005). The connection between foods, health, illness defined is similar between the Italian culture and the Native Americans. Being mindful in our food selection, transforming our hospitals and wellness centers, considering design elements of the fashion industry for health at every size, healthy aging, and aging in place must all be considered to empower the individual and family.

Recent years continue to develop more globalization of the food industry in structure. Every year, the United States continues to import and export hundreds of billions of dollars' worth of food. The US per capita food consumption grew from 1800 pounds per year to 2000 pounds per year between the years 1980 and 2000 (Jerardo, 2002). Production, procurement, distribution and consumption of foods remains a concern of our healthy aging population as well as our unhealthy aging population even though the abundant life has been apparent with the super saturation of our supermarkets with unique cultural food experiences which have included the Mediterranean Diet (Doll et al., 1981 & Allison et al., 1999). The highest rates of obesity and diabetes are among people who live in close proximity to unhealthy food choices (UCLA, 2008). Lawmakers need to enact public policies to provide healthy food choices and to make more readily available food choices. Research suggests that foods available in lower-income communities influence dietary behaviors and related health outcomes (UCLA, 2008). Individuals of color, which include the Native Americans, are among the highest for obesity and diabetes in the nation (HHS, 2002; Deitel, 2002).

Currently, 23.5 million Americans live in low-income communities without supermarket access. The convenience store or C-stores appear to be growing in rural America and may or may not provide consistent whole foods. The likelihood of children from poor families becoming overweight is twice as likely as children from middle income and higher income families. Thirty percent of children between the ages of 10-17 are either overweight or obese currently. There is a higher prevalence of obesity in neighborhoods with only convenience stores versus only supermarkets by 52% (UCLA, 2008).

Factors that determine what we eat include where we live regionally, the climate, soil and actual geography. Globalization and commerce, trade routes, appetite cues and hunger all affect

our food selection. Food traditions within a region as well as from the oldest cultures are beginning a renewal. Seven partners have evolved in America that are a result of food enthusiasts attempting to assist us to renew our heritage foods or at least appreciate that these foods exist right here in America (Nabhan et al., 2008). The traditional Native American Food Nations have begun to promote the necessity to encourage choosing foods from the ecological regions, appreciate the agricultural production zones, observe the culinary conventions and embrace the historical food traditions. Information sources for the healthy aging consumer can be identified at: Ecotrust, Salmon Nation, Southern Food ways, Cornbread Nation and Old ways all of which promote heritage Native American Foods (Nabhan et al., 2008). The encouragement is to go back to the native lands, native seeds, seed savers and the slow food movement in America in order to combat disease in an age that anticipates that acceleration will lead to possibly more changes in health and environmental needs of the aging (Nabhan et al., 2008). Individuals and families typically will resort to higher calorie, and lower nutrient dense foods sold at convenience stores and or fast food establishments when grocery stores, food coops, and farmers markets are not available or accessible and when residents do not have access to reliable transportation or public transportation or when grocery stores or food markets are not located within walking distances.

Potential life lost is due to the disparities in food accessibility. Chronic medical conditions which often stems from obesity initially include certain forms of cancer, diabetes, cardiovascular disease and an overall higher mortality rate (Liese et al, 2013; Liu et al., 2007). All of these diseases can shorten the longevity of our Elders and can limit the harmony among families due to their absence from a premature death.

It is the premise of this author that while the Mediterranean diet holds promise, the move away from embracing regional foods of America's Native American foods needs to be revisited as possibly the focus of a variable that could contribute to healthy aging in America. Reviewing the similarities between Italy and the Native Americans definition of illness could be beneficial considering the changing health care system and the focus on prevention as well as chronic disease management in future studies through proper menu design.

Longevity in America and Italy: Why does healthy aging matter?

According to Dan Buettner's book, *The Blue Zones*, centenarians have the following ten attributes in common: relationships with family and friends, being a lifelong learner and keeping your mind active, laughing and having a sense of humor, staying in touch with your spirituality, being optimistic and looking forward to each new day, staying active and exercising naturally, maintaining a sense of independence naturally, making a conscious effort to choose plant sources, keeping up on current events, and making new friends (Buettner, 2008). In both the Italian and Native American cultures, the healing remedies and healing arts are prominent in chronic disease management (Kavasch & Baar, 1999). Both cultures embrace many of Buettner's findings in his longevity observations (2008). While the built environment for active lifestyles is obvious in Italy, the built environment for many Native Americans was interrupted with relegating and challenging their way of life and eventual reservation living (Thomas et al., 1993). They used to be some of the most active people on the earth. Some of their heritage dance, activities and routines are coming back in the younger generations who want to know their history.

Aging drives disease. The likelihood of being diagnosed with a disease doubles every five years after the age of 65 and has been noted in the following disease states: Alzheimer's, cancer, heart disease, diabetes, kidney disease and numerous others (Kaeberlein, 2013). The question in biology, chemistry, nutritional sciences and the longevity studies has been: can we intervene in this process to do something about it? The question of whether there are common molecular changes that cause an organism to switch from youthful and healthy aging to aged and infirmed is the focus of many longevity studies.

Studies conducted in Italy, Greece, Australia and Britain have revealed that (1) a choice to adhere to the Mediterranean diet, mid-day naps and smoking cessation are characteristics of the elders who live long lives and that (2) diet quality is an important predictor of mortality risk among older adults (Naughton et al., 2012; Bach et al., 2011). Studies conducted in Sicily of adults living over 100 have supported the relationship between adherence to the Mediterranean diet and longevity (Vasto et al., 2012). Other than diet, the Swedish study utilizing the influence of the Mediterranean diet on cardiovascular disease also noted that alcohol

consumption and lifestyle factors also played key roles in longevity (Bach et al., 2011 & Tognon et al., 2012). In Dr. Francesco Sofi's meta-analysis investigation of 2008, the adherence to the Mediterranean diet, longevity and the incidence of chronic disease was investigated (Vasto et al., 2012). Adherence to the Mediterranean diet was defined as scores that estimated the conformity of the dietary pattern of the studied population with the traditional Mediterranean dietary pattern. The meta analysis evaluated nine studies including a total of 514, 816 subjects and 33, 576 deaths. The research found a two point increase in adherence score was significantly related to a 9% reduction of all-cause mortality, 9% reduction of mortality related to cardiovascular disease, and 6% reduction in mortality from cancer (Sofi et al., 2008). Of all ingredients noted in the Mediterranean diet regimen, researchers attribute the longevity providing effects of olive oil to monounsaturated fatty acids, vitamin E, diverse phenolic compounds and other antioxidants present in olive oil as having beneficial effects (Sofi et al., 2008). With these studies in mind however, can healthy elders, food insecure elders, Native American elders and urban dwellers afford to purchase the Mediterranean foods for a healthier menu design and selection?

The Mediterranean Diet: Food, Culture and Policies of Nutrition and Health, Tuscany style Study Abroad observations and comparisons to the Native American culture

For two weeks, instructors, chefs, graduate students, registered dietitians, lawyers, and professors embarked on an adventure in Italy which began either in Florence or in Rome with an eventual introduction of Palazzi, Florence Association for International Education. Various components of the two week study abroad course for this group included conference seminars, workshops on the Mediterranean diet and tours of various places in Italy which influenced the dietary habits. We first enjoyed getting to know each other at the Ganzo which is a student run cultural organization which provided a typical Tuscan menu. We visited the San Lorenzo Fresh Food Market along with a tour of the central produce market where the freshest of produce, fish, cheese, breads and wine were being procured. For many of us, what was so striking was the built environment assessment on the Renaissance Florence walking tour with an art historian who produced the idea of why so many Italians are svelte and healthy. Hands-on approach to the benefits of the Mediterranean diet with a specific focus on the Italian lifestyle was apparent in all seminars and workshops. It was obvious extended families were essential to longevity and

healthy lifestyles with family and friends contributing to the meals with various dishes and ingredients. Another built environment assessment was provided at the medieval town of Lucca and the museum dedicated to the history and traditions of the Mediterranean diet and the contributions of Ancel Keys was provided at the Museum of Castagnori.

The most telling of all communities was the day trip to Cinque Terre, a series of five small hilltop villages in one of the most picturesque uncontaminated areas of the Mediterranean Sea villages. It provided the essential aspect of how a built environment made all the difference for routines, activities, exercise habits, aerobic and strength training opportunities on a daily basis. Dry laid stonewalls, winding paths, beaches with breathtaking cliffs, clear blue green water and walks, hikes or riding trains or boats to embrace all five villages were available. At the school facilities, every day, 12, 000 meals are prepared for local Florentine schools using almost 70% organic produce and products for children with special dietary needs. Tastings of famous wines, cheeses, meats and specific meals for specific clientele were evident from balsamic vinegars to sheep milk pecorino cheese, Parma cheese and prosciutto. Day trips to Tuscan country sides' provinces of Siena to the Renaissance towns of Pienza and Montepulciano to the Bindella wineries all allowed opportunities to understand that it is not about just specific ingredients necessary all the time but heritage, family, home, meals, and togetherness are equally important.

An active life and healthy food choices that are specific to the Mediterranean foods and beliefs for healthy aging are similar to the heritage ways of many Native American tribes. Diets of Native Americans varied with the locality and climate but were typically based on wild game. The active lives, absence of tooth decay and dental deformities, svelte figures, and routines of many Native cultures mimic our Mediterranean counterparts accept with styles of dance, music and specific regional foods. Early explorers consistently described the Native Americans as tall and well formed. Newcomb (2010) quoted an early explorer, Cabeza de Vaca who wrote the following of the Native Americans of Texas, "the men could run after a deer or buffalo for an entire day without resting and without apparent fatigue". While many Native cultures ate diets rich in protein, high in fiber and a variety of plant foods, fat types were unique depending on the region of the Native American and is the one unique feature that varies from the Mediterranean

Italian culture who typically uses olive oil. Family, home, meals, and togetherness are equally important in the Native American cultures just like the Italian family. With mobility of jobs and job security however, this appears to be changing somewhat (Cordain & Eaton, 1997; Price, 2001).

Community Food Security Movement versus Slow Food Movement

Diet related health problems are on the rise due to the obesity rates in America and a growing number of cases in particular in southern Italy (Gallus et al., 2013). In 2003-2004, the prevalence of overweight or obesity in America was 70.8% and 61.8% for men and women over age 20 (Ogden et al., 2006). According to CDC, 68% of adults are overweight and 70% of Native Americans are overweight. The increasing prevalence of obesity has been noted in children as well with recent data showing obesity prevalence rates of 16.3 percent among children aged 2-19 and 30.5% in 10-17 year olds (Ogden et al., 2004). Obesity rates are costly to all societies considering the condition is associated with chronic diseases which include: cardiovascular, Type 2 diabetes, hypertension, stroke, dyslipidemia, osteoarthritis, selected cancers, gallbladder disease, sleep apnea, musculoskeletal disorders and all-cause mortality (Sturm & Wells, 2001).

An estimated 300,000 deaths per year are attributed to obesity (Allison et al., 1999). According to the National Cancer Institute, one-third of all cancer deaths are linked to diet (Doll & Peto, 1981). Eighty billion in medical costs are as a result of seven diet-related health conditions according to the Economic Research Service (USDA, 2002). The Mediterranean diet is of interest to epidemiologists due to the fact that populations lying in the Mediterranean coastline reveal lower rates of chronic disease than many other places in the world.

As early as 1997, it was estimated that seven billion dollars in advertising was spent on mostly processed and packaged foods (Pothukuchi et al., 2002). Thirty-two percent of the best quality farmland in the US has already been lost to development and 70% of the prime farmland is threatened by urban development. Family farms have declined which have gone from 6.8 million in 1935 to 1.9 million in 1997 (Pothukuchi et al., 2002). Conventional agricultural production contributes to pollution of air, water, soil and biodiversity however, the American

public has resisted the production and support of GMO enhanced crops and food selection options in bulk (Pothukuchi et al.,2002).

In the United States, the phrase community food security is similar to the slow food movement of Italy in that both are rediscovering the flavors of regional cooking and banishing the effects of globalization and glamorization of the effects of fast foods (Jerardo, 2002). In its full definition though, community food security is a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice (America's Second Harvest, 2001). Some Native American cultures are attempting to move away from the use of much of the commodity food system routinely (Price, 2001).

Traditional Health Beliefs and Practices affecting the Megatrend of Health and Environment

Illness in the Italian culture as well as the Native American culture is considered a result of imbalance with spiritual or supernatural unresolved issues and can lead to serious social implications (Kavasch & Baar, 1999; Kittler et al., 2012). Treatment intervention focuses on the cause of the imbalance which has led to the disease and is more holistic in its interpretation, assessment and intervention. Just as in the belief of many Italians, it is the belief in many Native American cultures historically that the ill or sick individual is at some sort of odds with the universe and therefore the role of the family and the community in which they live should be to assist them with restoring the imbalance and not in curing the disease (Kavasch & Baar, 1999). This can be linked to food selection out of proportion.

First-generation Italian immigrants are likely to retain traditional health-related beliefs from Italy which may include the fact that illness is due to wind currents that may carry disease, contamination, heredity, supernatural, human causes and psychosomatic interactions. It is believed that supernatural causes of illness include the "evil eye" and potential curses. Severity of illness is related to the causes with potential curses as a result of serious or even fatal medical problems (Kittler et al,2012). The curses are either sent from God or may be from an evil person as a punishment for bad behaviors or a punishment from sin. Some Native American cultures have these beliefs as well.

Illness is kept very private within the traditional Italian family so that the family member will not be perceived differently by outsiders or within the community and therefore extremely protected unless the ill family member chooses to make it known. While non-traditional Italian families may use public hospital facilities or long-term care facilities if needed for assistance, it is rare (Kittler et al., 2012). The relationship between the family caregivers in Italian families and the relationship between the medical team caregivers has been explored (Vellone et al., 2002). The study demonstrated Italian caregivers' profound sense of family obligation and duty (Vellone et al., 2002). Traditional medical intervention is expected to include physical, mental and spiritual renewal.

Traditional Native American medicine is also concerned with physical, mental and spiritual renewal for restoration of health, health maintenance and prevention of illness and disease (Kittler et al., 2012). Some Native American tribes believe that witchcraft, through wind, lightning, whirlwinds and animals contribute to disease just like first generation Italian immigrants as well as transgressions committed or evil spirits contributing to disease. Some Native Americans reject that poor nutrition or infections caused by a virus or bacteria can cause sickness. Just as with the Italians, an evil external source is often identified. In the Navajo culture, the Hanta virus was explained by the Navajo healers as being due to rejection of traditional ways and adoption of convenience foods. Rituals to prevent disharmony in the body include: sweat baths to promote peace, stargazing or listening, singers and healers. Singers sing sacred chants and healers use traditional sand panting ceremonies. Herbalists assist in treatment of illness through application of wild plant remedies (Kavasch, 1999). Emotions are released that are thought to possibly contribute to some of the disease source.

Just as in the Native American culture, Italians are also attempting to manage emotions. It is believed that keeping emotions bottled up inside is unhealthy. It is believed emotions must be released to eliminate any connection to illness. Italians use a "horn" as protection against the evil eye or *malocchio*. The severity of the illness is related to the cause and is still believed by some Italian generations.

The primary and extended family is everything to both Native American and Italian immigrants. Children are highly valued and there is great respect for elders. Women are typically

in charge of domestic matters and disease management. Both paternal and maternal positions in both cultures have specific duties which lead to harmony in the family unit as well as the extended family.

With the megatrend of acceleration predicted to change to an evolution of more knowledge, more produce, more consumption, more communication and change itself creating more stress in the basics of clean water, food, clothing and shelter, can we assume that the megatrend of health and environment changes be a result of acceleration leading to more allergies in children, more mental illness, more age- related illness, more obesity and stress and a need for higher quality services for health of the whole family versus just the healthy elder of the Native American and the Italian immigrants in America (Pendergast, McGregor & Turkki, 2012)? The affordable care act and the protocols of medicine today must answer these questions before proceeding with interventions that may be leaving out age old remedies related to wholesome food, patterns and types of activity, stress reduction and family relationships as well as how illness is defined.

Model for Menu Decision Making in Families

Rewriting, writing for the first time, or having no experience in writing menus can be overwhelming. There are numerous USDA approved software programs for standardizing menu planning and nutrient comparisons along with various companies offering long term care menu programs (McCaffree, 2000). As pointed out by Roberts and Marra (Peregrin, 2008), the Modified MyPyramid for elders is a great starting place for menu management. The modified version is a more graphic version of MyPyramid and can be used to help educate older adults on the types of nutrient-dense foods to include in their diets. The Modified MyPyramid for elders specifically emphasizes fluids, variety and the fact that some elders need fortified foods or dietary supplements to meet requirements of calcium, Vitamins D, E and B-12. The actual written menu is the soul of every food service operation and should create enthusiasm for the resident or patron. As the industry is moving toward a person centered or resident centered care, buffet, open-dining, restaurant style, 24/7 open kitchens, and other eating venues such as bistros, internet cafes, pubs and the ice cream parlors continue to build momentum (McCaffree, 2000).

Menus are classified according to the regularity with which the food will be offered in the facility. The following should be a reminder of the types available for suggested use: static or fixed menu; cycle menu; market menu, hybrid menu; California menu; a la carte menu; and table d'hote or prix fixe menu (Chesser,1992).

Offering Healthy and Appealing Menus

How are residents or patrons defining a food, snack or meal pattern? Is their definition the same as the Food service operator's definition? There is no universally agreed upon definition of a meal or snack.

Menus should be designed to reflect all eating occasions and be offered throughout the day. A meal to one resident may be a snack or eating occasion to another particularly considering our mobile and culturally diverse work force and society. Some residents are considered "wanderers" due to their disease process. Others may have lived and worked on different shifts where their internal clock still acknowledges those alarms. Major meals are still breakfast, lunch and dinner. Mid-afternoon, early evening and late night snacks should also be available. The restaurant work force in the United States has had an influence on eating occasions, snacks or a defined meal. This has influenced the patron or resident's expectation for defined meals and menu options (McCaffee, 2000).

Proper menu engineering or development involves numerous factors. The menu determines the image of the establishment, the equipment needed, the necessary capabilities and functional literacy of the production crew, food availability, type of production and service style, the regulations to be followed and of course the guest (McCaffee, 2000). A true menu lists items that complement each other and gives the resident or patron a complete sensory experience and is nutritionally balanced. The menu planner, chef, foodservice director, caterer or dietary manager must work with the dietitian to achieve this nutritional balance. Flavor profiles, color, texture, shape and numerous ingredients must be explored in order to provide home care communities with both appealing meals and nutrient density. Taste panels made up of residents, staff and advocates for residents or repeat patrons need to attend regularly scheduled meetings to assess environment which stimulates joy, reflection and encourages healing and peace through food selection. (Harrold, 2001 & Mojet et al., 2002).

Recommendations for change in Menu Options used in the HCC

Industry trends and current research issues in hospitality management continue to monitor similar needs as does the dietetic community in the global foodservice/restaurant industry. This industry continues to identify issues of healthy eating promotions, technology adaptation, menu engineering, product development and labor management while achieving regulatory requirements (Oh et al., 2004). Cuisine of any foodservice establishment is defined as: food and the manner and style in which it is prepared. When a style of food is labeled, it represents a particular geographic region, religion, culture or all of these factors. American cuisine continues to be developed based on multi-cultural communities.

Appreciation of this aspect of menu engineering assists in creating complementary blends of menu options for residents and patrons who may have arrived from a different part of the nation or globe (Stein, 2010). Residents and extended family members as well as patrons need to be asked relevant questions about their food habits and traditions during the initial assessment or visit to the patron's table.

While types of menus can be decision tools for management and give the residents a heads up on various foods offered, the tasting menu (Young & Brewer, 2001) used in many establishments may be a way to introduce, encourage, remind and educate the aged of favorite foods. Tasting menus allow residents and patrons the opportunity to sample a wider range of dishes than would be normally eaten in one meal. Tasting menus offer smaller portions served in 4-5 courses and are ordered by all residents at the same table. Allowing this choice, the resident has a voice; the staff begins to document favorite foods which might enhance weight goals, nutrient density, and socialization that inevitably improve nutritional status. Creating an environment for celebrating everything can begin with providing an environment which stimulates joy, reflection and encourages healing and peace through food selection. (Harrold, 2001 & Mojet et al., 2002). By using the SureQuest™ '" foodservice software, Canadian developed foodservice products, on demand costing can assist with menus, inventory control, stock items database, vendor management, calculating costs of recipes, various yields and menus, costing reports and keeping costs updated for all residents or patrons (SureQuest™). This program is easy enough to be grasped by secondary students in home economic and culinary

programs as well as dietetic programs in colleges and universities. The superb support and teaching staff to learn the program is tailored to assist with a facilities unique clientele or fictitious case studies for training purposes in educational or academy facilities. Please note the inserts of screen shots reviewing some of the programs capabilities in the appendices[1] (SureQuest™). Menu selection that is properly balanced and recognizes adjusting for individual needs may include decreased calories, increased nutrient dense foods, increased whole foods, increased fluid intake and possible use of fortification and nutritional supplements can also be included in the inventory and design of tailored SureQuest™ programs.

Conclusions

Food habits of Native Americans and Italians are influenced by the region of the geography and the climate in which foods are grown. Initially, in both cultures, procuring food required routine tasks daily. Both cultures have unique and similar indigenous foods, staples, regional variations and acculturation from various societies. Regional foods around North America are similar to the Mediterranean cuisine accept for differences in vegetable fats in particular. The nuts, seeds, berries, fruits, vegetables, grains, wines are all available in both countries. It appears however that olive oil, is the unique feature that sets the dietary cuisines apart even though, in places like Texas, olive oils and vineyards are beginning to be a part of the vegetable fat production and wines of America. The Mediterranean diet is the only diet that has been extensively studied among all diets however, the Native American tribes following their native regional foods seasonally were never plagued with our current chronic diseases until fast foods and US commodity foods were imposed on them. Is globalization, which makes us more alike across the world and expands our trade agreements, appropriate for aging societies and/or our youth? The food science behind the Mediterranean diet and the Native American foods is what is unique and having access to these foods is what can assist with healthy aging and healthy families in both cultures. Fresh, whole, regionally grown foods is what is necessary to improve the immune system to combat chronic disease and a menu can be built around these concepts, heritage foods and foodways.

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[1] available upon request

Disease management beliefs typically includes healthcare managed at home if at all possible between both cultures. Terminal illness may or may not be God's will according to both cultures. It depends on the source of the disease. Illness being caused by suppressed emotions or emotions evoked from unresolved conflict are similar in both cultures. Pain experiences and pain management is resolved initially through home remedies, song, dance, chants, prayers and religious rituals. Curses and the "evil eye" are similar potential experiences that are promoted within each culture. Neither culture trusts the mainstream medical services initially without exploring the traditional ways of the Italian or Native American cultures. A strong sense of family commitment, belonging, and family traditions ripe with activity, meal preparation, menu development and meals together are similar in both cultures while being hospitable to friends and strangers. Enjoyment, hunger, pleasures of the palate, food preparation and storytelling are obvious in both cultures and appears to promote longevity (Purnell & Paulanka, 2008).

More studies that compare the unique nature of both the Mediterranean region to the Native American tribes of the United States are needed in order to preserve heritage foods and food biodiversity and reveal precise links between longevity, healthy aging and disease management once the source of the disease has been identified for more appropriate menu management.

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Exploring beliefs about initial learning activities and learning expectations prior to and during Junior Kindergarten (JK): Comparing parents and teachers

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A positive relationship between parents and teachers prior to a child entering formal schooling is important as this is one of the key factors to ensuring a child has a successful transition to school and future school success (Galindo & Sheldon, 2012; Xu & Gulosino, 2006). Encouraging an established connection among parents and teachers can help diminish the mismatch between parents and teachers regarding what skills teachers expect children to have prior to Kindergarten entry and what parents believe are the essential skills required. Clear communication of such expectations between parents and teachers will ensure that children will have stronger results for a successful school transition (Barbarin et al., 2008). It is apparent that interactions and conversations between parents and teachers are an essential component to school readiness even though there is variation in terms of how it might take place. Such communication will "ensure the child's needs are being met both emotionally and academically, which helps ensure the child will be ready for Kindergarten" (Lara-Cinisomo, Sidle Fuligni, Ritchie, Howes, & Karoly, 2008, p. 347).

This presentation outlined a recent study completed in Ontario, Canada which investigated parents' and teachers' views of the completion and importance of social and cognitive early learning activities and learning outcomes by the end of Junior Kindergarten (JK). A mixed methods approach based on Bronfenbrenner's Ecological Systems Model was used and findings in this study demonstrated statistical and individual differences between parents and teachers about the importance and relevance of early learning activities prior to and during JK and the types of learning expectations that a child should achieve by the end of JK. For example, differences existed about early learning activities such as computer and workbook use, the development of self-regulation, socialization, reading books, and encouraging independence. Activities that were valued included promotion of socialization, reading, and independence. Finally, differences among learning outcomes involving academic skills, independence, and self-

regulation also existed between parents and teachers. Recommendations and implications for future practice for parents, teachers, school boards, and ministries of education were included in the presentation to assist individuals during the transition to JK for parents, teachers, and children. For additional information about this research study, please contact the researcher directly at tceccato@uoguelph.ca.

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Ecological 'Self as Tool': Learning about Human Ecology amid the Environmental Revolution

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Thank you for the opportunity to speak during this Symposium. I am grateful to be here in the lands of the Anishinaabe, Haudenosaunee, Attawandaron, and Wendat peoples. I have travelled from my home on the banks of the North Saskatchewan River in ᐊᒥᐢᑿᒌᐚᐢᑲᐦᐃᑲᐣ (Amiskwacîwâskahikan) in Treaty 6 lands, the ancestral lands of the Papaschase, and the homeland of the Métis Nation, a place also known as Edmonton. My settler family's roots are intertwined with the place now known as Toronto where I was born. My life's journey is characterized by a desire to make meaning, whether as a museum educator in Calgary in the 1990s, or as an artisan academic and facilitator of group dialogue currently in Edmonton.

Facilitating dialogue about human ecology in the 2000s is full of opportunity. Some say that we live amid the Great Unraveling, a time characterized by such crisis indicators as "an economy based on the depletion of non-renewable natural resources"; "extreme weather events"; and increasingly frequent and destructive terrorist attacks (Korten, 2006, pp. 358-359). However, that is only one way to think about these intense times. I identify with changes in thinking that have been underway since the 1960s, with the publication of such works as Rachel Carson's (1962) *Silent Spring* (as cited by Nickols & Collier, 2015); Wendell Berry's work (e.g., 1972, as cited by Vaines, 1994); and more recently, the Earth Charter (2000, see: http://earthcharter.org/). The Charter is an ethical framework developed through the 1990s in a global, civil-society effort in support of just, sustainable, and peaceful living. With each day that passes, I feel a sense of urgency to contribute to this change in thinking, known as the Environmental or Ecological Revolution and also as the Great Turning (Korten, 2006; Landry, 2014; Macy & Johnstone, 2012). Awareness raising is critical for understanding that humanity can make life-sustaining choices. Opportunities exist for humanity, in all its diversity and conflict, to enhance

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understanding about not only local interdependence among humans but also global interdependence with all living systems and resources on Earth. Changes are needed particularly in terms of western, Eurocentric, societal thinking, so focused on the Industrial Growth Society. To shift to a life-sustaining society (Landry, 2014), I perceive that people need to reflect and create in ever more critical ways in support of transformative learning as individuals, families, groups, and communities in relationship with the planet and with each other as part of Earth.

I think that human ecology as a field has depths of resources to contribute to the Ecological Revolution and a responsibility to recall early ecological thinking in our field. In this paper, I will share some ways in which I strive to facilitate introductory, transformative learning about human ecology. In 2015 and 2016, I facilitated HECOL 100, "Introduction to Principles and Practice in Human Ecology," a course that is required for students registered in Human Ecology programs at the University of Alberta. With encouragement from past instructors, I have explored ways to update and reframe the course. I am re-connecting with some long-established thinking about ecology from our profession's first century. Contributing to the Ecological Revolution does not mean disregarding all that has come before (Landry, 2014); rather, we are invited to critique what is not working, be part of an awakening to a new sense of consciousness of interdependence, and invite learners into action with various relational skills including an "ecological self as tool". I describe how I have pulled this concept together, building on past scholarship (e.g., Badir, 1978; Drengson, 1999; O'Sullivan, 2012), as a way to invite students into the field of human ecology. Then, I consider how this concept requires an enhancement of course content regarding skills (i.e., not only professional, practice skills but also inner and relational skills). To conclude, I offer glimpses into student reflections about HECOL 100 and how it is contributing to their learning.

I frame these thoughts in terms of a reflective lens about my own journey in local and global citizenship (Chapman, 2012). When creating learning spaces, I value first-hand experience. I strive to integrate various meaning-making tools. As I accompany learners, I strive to remember that I am a learner, too, and am in relationship with learners, as we 'unpack' meaning with each moment.

I was inspired to design HECOL 100 for not only human ecology students but also students from arts and from sciences who were permitted to register, as of 2015; I wondered if they registered because "human ecology", as a term, caught their attention as they searched the university's calendar of courses. I immersed myself in recent publications regarding conceptualizations of human ecology, looking for integration not only of the various specializations that characterize our field but also of generalists' concerns with pressing, complex, systemic issues in our world. I came across exciting instances in which this integration was happening (e.g., Peterat, Mayer-Smith, Lee, Sinkinson, & Tsepa, 2004). I noticed how such human ecologists and educators traced their philosophical stances to scholars' work within and beyond the field. I tried to reconceptualise HECOL 100 as a story, in keeping with Dr. Eleanore Vaines' (personal communication, June 8, 2015) suggestion for framing the course as: "What home economics [human ecology] was; What it is; and What it should be" with respect to beliefs, knowledge, and action. I redesigned the course, dreaming of the potential that participants would have opportunities to experience transformative learning, which may be understood as:

> …a shift of consciousness that dramatically alters our way of being in the world. Such a shift involves our understanding of ourselves and our self-locations; our relationships with other humans and with the natural world; our understanding of relations of power in interlocking structures of class, race, and gender; our body awareness, our visions of alternative approaches to living; and our sense of possibilities for social justice and peace and personal joy (O'Sullivan, Morrell & O'Connor, 2002, p. 11; O'Sullivan, 2012, p. 164)

I sought to move away from the mid- and late-20th century focus in human ecology on how to be productive consumers in financial markets for the "benefit of self and family" (Apple, 2015, p. 59; Nickols & Collier, 2015). I considered the effects of unethical consumption and unsustainable practices on individuals, families, and environments. I wondered how I might introduce HECOL-100 students to the potential for human ecologists to live with a creative tension between generalism and specialism, as professionals with ethical responsibility to support quality of life on and with Earth.

One point of reference became Korten's (2006) conceptual work in support of "a living democracy [that] finds expression in living economies, living politics, and living cultures" (pp. 341-342). In a recent keynote address, Korten (2017) described that we are "on a cusp of a fundamental civilization shift, like a second Enlightenment", in the midst of crisis. He perceives three types of crises:

1. A growing environmental crisis which is characterized by climate change, collapsing fisheries, and destruction of soil, water, and forests. Humans are consuming Earth's resources faster than Earth can regenerate (Global Footprint Network, 2017).
2. A growing social crisis of extreme inequality, characterized by violence as people fight for access to resources and by a massive movement of refugees. Increasingly, wealth is held by fewer and fewer people.
3. A crisis of governance (e.g., globally and close to home). This crisis is interlinked to the other types of crises and to some degree self-imposed; humans that are the least likely to make change in support of well-being are sitting in critical positions of great power (Korten, 2017).

I have asked myself: How might I situate HECOL 100 relative not only to these systemic crises (i.e., the Great Unraveling) but also to the potential of the Ecological Revolution (i.e., the Great Turning)?

Concern about ecology, in terms of the study of human interrelationships with various environments, is not new. Home economists in the early 1900s at the Lake Placid Conferences were organizing the field in response, in part, to the effects of the Industrial Revolution on individual and family well-being (Nickols & Collier, 2015). I decided to ground the course in terms of not only the past but also the present, amid the Ecological Revolution. Joanna Macy (Landry, 2014), a general-systems scholar, characterizes this revolution in terms of knowledge of: (i) cyclical, iterative systems; (ii) relational, cooperative, mutually influencing holism; and (iii) awareness of capacities which can be nurtured through responsible use of resources, toward balance and sustainability. Macy observes that the Ecological Revolution is happening much more quickly than the Industrial Revolution (over hundreds of years) and the Agricultural

Revolution (over thousands of years). She describes the active roles that humans have to play now and suggests that our roles may be conceptualized in three dimensions:

1. "**Holding actions** in defense of life on earth" (O'Sullivan, 2012, p. 165) to slow down damage (e.g., demonstrations; activism in support of various types of justice) (Landry, 2014). These actions are a step into saving some dimensions of life as we know it but they are "not enough to create a sustainable society" (O'Sullivan, p. 165).
2. **Life-sustaining systems and practices** – This dimension is characterized by the questioning and redesign of old approaches; for example, "Is 'free trade' actually free?" Structural causes of current crises must be analysed, and new patterns of organizing and new types of institutions are required (O'Sullivan, p. 165).
3. **A shift in consciousness** is the third dimension with "new" ways of seeing "cognitively and spiritually" (O'Sullivan, p. 165), grounded in values (e.g., compassion; Macy & Johnstone, 2012) and based on how humans understand their interdependence with each other and Earth. The re-awakening of understanding of and appreciation for Indigenous wisdoms is critical for this shift in consciousness. Such re-awakening does not require discarding science but rather adopting a care-filled use of such knowledge.

With this in mind, I have asked, on the one hand: How might HECOL 100 be an introduction not only to professionalism, generally and specifically in terms of clothing, textiles, and material culture, family and consumer sciences, and/or foods and nutrition? But also, on the other hand: How might HECOL 100 be an introduction to a professional value orientation, with century-old roots, that aligns well with the three conceptual dimensions of the Ecological Revolution?

As a scholar of education, O'Sullivan (2012) describes how he applies the three dimensions of the Ecological Revolution in terms of three "distinct but interdependent" (p. 166) modes of transformative learning. The modes support the nurturing of "a deep personal planetary consciousness that one can identify, at a personal level, as ecological selfhood" (O'Sullivan, 2012, p. 170).

The first mode is "survival education" (O'Sullivan, 2012, p. 166) which responds to Korten's (2017) three crises, including "environmental devastation, human rights violations, the hierarchies of race, the prevalence of violence, the idea of technological progress, and the

problem of failing economies" (O'Sullivan, p. 166). To contribute to transformation requires learning about "the dynamics of denial, despair, and grief" (p. 166). We need to learn how to accept the reality of these crises, acknowledge our fears, and lament what is already destroyed (Macy & Johnstone, 2012).

O'Sullivan's (2012) second mode of transformative learning is "critical resistance education" which requires "cultural criticism" (p. 167) of ourselves as humans in relationship with other natural systems and with each other. This requires critical awareness of hierarchical, imperial, patriarchal power structures and understanding of structural violence in so many areas including "race, class, gender, and sexual orientation" (p. 168). From my perspective, this mode is an invitation to ramp up the well-established, human ecological, professional skill of critical reflection to enhance awareness of injustices and how injustices, too, are interrelated (e.g., economic, social, and environmental).

The third mode is "visionary transformation education" (O'Sullivan, 2012, p. 168) which taps into creativity. I perceive this mode as an invitation to design human-ecology philosophy courses in terms that are structured not by market capitalism but rather in terms of "create[ing] and sustain[ing] an environmentally viable world" (p. 168). I see opportunities for human ecologists and home economists in Canada to practice, study, and learn about human interdependence with not only near and various other human-focused environments but also our "planetary context" (p. 169), beyond global commercialization.

These modes of transformative learning can enable the development of "ecological selfhood" (O'Sullivan, 2012, p. 170) and "ecological consciousness" (O'Sullivan & Taylor, 2004, p. 13). Consciousness is understood as "the 'frames' or mental structures through which we interpret our world, understand ourselves, and find meaning" (O'Sullivan & Taylor, 2004, p. 6). O'Sullivan and Taylor (2004) reflect on "ecological self" as discussed by Fox (1990). It is a concept that describes understanding self as part of a larger system of relationships and behaving with a caring interest for the continuity of that system. "Ecological self" has a familiar ring to me in a few ways. First, ecological consciousness is not new to human ecology. It is deep in our roots, evident in Ellen Swallow Richards' "conceptualization of oekology" (Nickols & Collier, 2015, p. 15) in the 1890s and during the Lake Placid Conferences. Another early scholar of

environment-human interrelationships was Abby Marlatt who attended the 1903 Lake Placid Conference. Apple (2015) observes that Marlatt advocated for teaching that "to be a 'wise consumer' meant more than finding a good buy; it meant recognizing the quality of the goods and the conditions of their production and sale" (p. 58). For example, Marlatt sought to raise awareness of sweatshop-labor injustices (Apple, p. 58). Yet, as Apple (2015) also laments:

> Over the decades, however, the sense of social responsibility disappeared [from home economics]. The objective continued to be to educate girls and women, and more recently boys and men, to be good consumers, but it was consumerism for the benefit of self and family. (pp. 58-59)

I perceive that Vaines' (1994) advocacy for the use of "ecology as a unifying theme for home economics / human ecology" (p. 59) was in part a response to such a shift away from a professional responsibility to the whole of life, not just consumer well-being.

This unifying potential of the concept of ecology is a second way in which I reflect on "ecological selfhood" (O'Sullivan, 2012). As Vaines (1994) notes, an ecological lens is necessary for an "understanding of complex social patterns … the survival needs of families and individuals and those with limited economic power" (p. 60). I have explored Naess' "ecological Self [capital S in original]" (Drengson, 1999, para. 16), as characterized by "extending our care and affection" beyond self to "a wider sphere of relationships" (para. 18); this links with existing content in HECOL 100 and an eco-centred philosophy (Vaines, 2004, Map/Chart I, p. 152). In a diagram, Vaines describes a Reflective Practice journey as "new territory" such that as a professional:

> I am a pilgrim on a journey that is complex, uncertain, unstable unique and rich in value conflicts … *MY CALLING* … Leading an examined life … Always in relation to others … Actively choosing to participate in / I am choosing to live … Our cooperating[,] choosing[,] shaping … New stories … about nurturing Webs of Life … The World is Our Home … Moral Vision (for our common good). (Vaines, 2004, Map/Chart I, p. 152).

This awareness of relationality is part of "ecological consciousness" as "a co-consciousness that emerges out of differences and in interrelation and interaction with others" (Morris, 2002, as cited by Peterat et al., 2004, p. 36).

A third response to "ecological selfhood" (O'Sullivan, 2012) is my reflection on Dr. Doris Badir's concept of the "self as tool" (1978; published in 1983). This is a concept that has been integral in HECOL 100 through the years. In my explorations, I have learned that Badir spoke in 1978 to the concept of "professional tools" as a way to put abstract content into service (p. 31). In addition, she invited home economists to consider themselves as a tool by:

> gain[ing] an understanding of herself [*sic*], and herself in relation to others so that she can effectively present ideas, can build meaningful relationships with the people with whom she works, and can present herself as a person with integrity, i.e. her beliefs and behaviour complement one another. (Badir, 1983)

And here is a link that I am making not only between "ecological selfhood" (O'Sullivan, 2012) and Badir's concept of the "self as tool" (1978), but also with the study of deep ecology (Naess & Sessions, 1984, as cited by Drengson, 1999). In reflecting on deep ecology, Macy (2014) invites people to consider "self as metaphor"; she describes "extend[ing] our self-interest as large as we want… extend it to include all of life". She speaks about choosing to identify with Earth as "we draw from and are interdependent with all the others of the whole earth…." in "inter-existence" (Macy, 2014). Vaines (1994) discuss the "deep ecology of HMEC [home economics/human ecology]" (i.e., studying human "participation in these complexities [of interdependence with environments]") (pp. 59, 62). This pattern of scholarship, inside and beyond the field of human ecology (i.e., in the wider world's awareness of the Ecological Revolution), prompts me to ask: How might HECOL 100 be designed in such a way as to introduce students to research and practice which is concerned with near environments, quality of life, and a professional perception of "self as tool" (Badir, 1978) as part of "all of life" (Macy, 2014)?

Upon reflection on "ecological consciousness" (O'Sullivan & Taylor, 2004; Peterat et al., 2004), "ecological selfhood" (O'Sullivan, 2012), and "self as tool" (Badir, 1978), I arrived at integrating these concepts as "ecological self as tool." This is a contemporary response to what being a professional in the field of human ecology in Canada can mean. For example, regarding the professional skill of decision making, not only can students be introduced to the importance of problem solving and decision making to support individuals and families but we might also

introduce Straus' (1990) concept of "ecologically sound" decision making (p. 14). In keeping with systems thinking, this requires human ecologists not only to develop skill in analysing an issue for informed decision making, but also to understand how they are positioned in the situation, as a part of the whole. Such decision making requires an ability to "zoom" (Straus, p. 15) in and out of holistic, generalist knowledge and detailed, specialized knowledge of a situation. This ecological orientation also requires analysis of power and privilege and effort to check if everyone who may be affected by a potential decision has opportunities to voice needs and hopes (Straus, pp. 13-14, 15). Understanding the power and privilege held by human ecologists, themselves, in such a situation is also part of applying "ecological self as tool".

Another example of integrating the meaning of "ecological self as tool" is situating HECOL 100 amid the national healing process as re-initiated by the Truth and Reconciliation Commission of Canada (TRC). I am determined in HECOL 100 to acknowledge Canada's history of active destruction of Indigenous educational modes. As a result of opening space for such acknowledgement, one HECOL-100 student in 2016 noted human ecology's professional complicity in contributing to curriculum dominated by Eurocentric conceptualizations of family and home. My friend and colleague, Sarah Auger, self-identifies as an Indigenous person and joined us in HECOL 100 in 2015 and 2016. She is doing her doctoral work in Educational Policy Studies, with a specialization in Indigenous Peoples Education, in the Faculty of Education, University of Alberta. With her, we consider how Indigenous knowledge and human ecology are similar and different. This is, in part, one way to respond to McGregor's (1993) encouragement to the field to consider how Indigenous and human-ecological philosophies compare and contrast. I see the need for deepening such dialogue as a responsible application of "ecological self as tool" as human ecologists in response to the TRC's Calls to Action (Truth & Reconciliation Commission of Canada, 2015).

Ecology is a common thread between Indigenous knowledge and human ecology. Being aware of how one is related in interdependent ways to other living organisms and various environments or contexts reflects ecological consciousness. And ecology is a conceptual portal into the concept of diversity. I perceive that Canadian society is just beginning to awaken to the multi-generational "systemic discrimination" (Choudhury, 2015, pp. 102, 172) of Indigenous

peoples; non-Indigenous peoples have much to learn from and with Indigenous peoples as this society looks to the future. In addition, Canadian society is evolving as one in which the majority of people will be multi-racial/racialized/people of colour and the minority will be white. As increasing numbers of people are forced to flee globally, the numbers will grow of immigrant and refugee families who make Canada their home. Human ecologists are living and working amid ever-growing societal diversity amid crises (e.g., environmental, social, and governance; Korten, 2017). We have opportunities to use personal and social power to change the behaviour of systems (e.g., in which injustice occurs). How might HECOL-100 students be introduced to that potential?

In past offerings of HECOL 100, particular focus was on professional competencies of human ecologists as we strive to support quality of life. To invite HECOL-100 students to consider the meaning of "ecological self as tool" in Canadian society, we turned in 2016 to Choudhury's (2015) book, *Deep Diversity*. He invites readers to consider how helping others or 'tending the world' requires that we "tend our inner world" (p. xiv), too. I invited HECOL-100 students to consider his invitation to develop eight inner skills "to enhance positive relationships with ourselves and others" as "micro-abilities that help us stay centred and balanced when things get emotionally heated" (p. 17). The inner skills include: self-awareness; mindfulness meditation; self-regulation; empathy; self-education; relationship management; conflict skills; and making meaning. These skills enable awareness of our own social identities and how we relate to people who may be similar to and different from one's self. I echo Choudhury's call that such awareness is not enough; understanding how some groups dominate other groups is just as critical. I perceive this dimension of understanding as part of ecological consciousness and critical for appreciating that a person's ability to meet their own, their family's, and community's needs will be more and less difficult relative to their access to power. As I imagine current human-ecology students graduating into the profession in the late 2010s, I perceive that they and established human ecologists will need to enhance awareness about living and working in increasingly diverse societies (e.g., in terms of culture, race, sexual orientation, age, religion). Seeking to help a diversity of people to live into full potential, we have a responsibility to engage in lifelong learning about not only our practice skills but also our inner skills.

As I prepare to accompany a new group of HECOL-100 students, I continue to consider how to integrate "ecological self as tool" into the course as a way to explore a philosophically-informed lens and explicit value orientation. I am reflecting on insights shared by students from 2015 and 2016. For example, in seeking student input for this paper, I received these reflections:

- The reason that I love human ecology so much is because the classes discuss topics that are actually relevant to everyday life, instead of just numbers and equations. I find that the material I learn, I can actually apply to my life and help the people around me. (Student L)
- HECOL 100 has given me a basis to form my own perspective as well as a basis for understanding my other courses in my degree program. I often find myself sitting in psychology or another HECOL course and seeing something, then immediately creating a link back to HECOL 100. It has been tremendously useful in the goal of better understanding what I'm learning. I'm sure it will continue to be as well. (Student Ryan)
- The fact that [the Bronfenbrenner ecological model] takes into account all the potential outside influences on the family and/or individual in their development, it's taking an approach that is quite uncommon. But looking into the effect all those influences can have is essential, in my opinion. (Student S)
- Honestly, HECOL 100 came in at the right time in my trajectory of philosophical and academic development for human ecology. Coming from a natural science background, it truly felt like a warm embrace, but equally shocking touch of cold water. I attribute my critical thinking … to HECOL 100. (Student Y)[3]
- Eco-centred vs. ego-centred lenses: These concepts were meaningful to me because I often reflect on the ways in which I am looking at a situation and think, "which lens am I choosing," or, "which lenses are the other people involved choosing? (Student H)

[3] The student refers to an in-class discussion in response to the question, "Is what you are learning about life as a human ecologist a surprise? Perhaps, like the ice-bucket challenge or cold water, splashed on your face? And/Or is what you are learning more like a welcome affirmation? Perhaps, like a kiss" (inspired by Gingras, 2004, p. 67, citing Shange, n.d.).

These insights encourage me to continue to frame HECOL 100 in terms of the Ecological Revolution or Great Turning.

In conclusion, I recall my guiding questions in exploring the potential for HECOL 100:

- How might HECOL 100 be situated relative to not only systemic crises [e.g., environmental, social, governance, (Korten, 2017)] but also the potential of the Ecological Revolution?
- How might HECOL 100 be an introduction not only to professionalism but also to a professional value orientation that can align well with the three conceptual dimensions of the Ecological Revolution [i.e., holding actions; life-sustaining systems and practices; a shift in consciousness (Landry, 2014; O'Sullivan, 2012)]?
- How might HECOL 100 be designed in such a way as to introduce students to research and practice which is concerned with near environments, quality of life, and a professional perception of "self as tool" (Badir, 1978) yet also as part of "all of life" (Macy, 2014)?

To engage the hopeful potential of the Ecological Revolution, how might HECOL 100 philosophically prepare students to develop professional ecological, self-awareness of their interdependence with other living systems and to apply "ecological self as tool"?

Through HECOL 100, I have sought to introduce students to human ecology as a critically reflective, 'helping' profession (Badir, 1978) in which cultivating an ecological consciousness honours our historical roots and also prepares students for constructive, compassionate contributions in the future. I perceive that some transformative learning is occurring in HECOL 100 as we have, in effect, explored aspects of "survival education", "critical resistance education", and "visionary transformation education" (O'Sullivan, 2012, pp. 166-168), framed in terms of human ecology. I thank students for their willingness to co-create what "ecological self as tool" means in the mid-2010s in western Canada. I look forward to practicing human ecology with them. Together, across generations, we will need each other in this field, amid the Ecological Revolution.

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Food, Colonialism and Identity

Mary Anna Cimbaro

Introduction

Food is an integral part of any culture or society. Not only does it sustain human life, but it can be an expression of familial traditions, religious beliefs, seasonal celebrations or even a sharing of neighbourly good will. When one lives in a multicultural society, such as Canada, food can also become an expression of cultural diversity and personal identity - who **we** are, who **I** am.

As the cultural landscape is so diverse in Canada, inclusivity can be important in helping to maintain harmony in communities. Schools can play an important role in developing knowledge, attitudes and behaviours that foster respectful interactions with students who are different from themselves. Food, an integral part of every culture, can be a vital tool for teaching Canadian students about diversity and inclusiveness (Pazzaglio & Williams, 2012).

Culture can also be an expression of personal and community choices - what we eat, what we wear, where we live. Historical events can have an impact on these choices. Food is common across all cultures and teachers can use food to tie historical events, such as colonialism, to personal and community food choices. Students can be asked to critically evaluate food decisions that on the surface can seem to be free individual choices but rather are the result of much wider influences such as politics, economics and even geography (Resor, 2012).

As a Home Economics teacher who teaches in a predominantly Caucasian school, teaching students authentically about culture, cultural diversity and inclusivity can be challenging at times. My presentation today describes my journey in creating a learning plan to help my grade 9 students make connections between historical events, personal and collective choices, cultural diversity and cultural inclusivity by using food as a connective theme.

Background

My cultural food journey began a year ago. I had informally asked my grade 8 students to answer the following question: If a foreign visitor came to Canada and asked you for some examples of Canadian cultural foods, what would you tell him/her? To my surprise, the students

struggled to answer the question. I overheard snippets of conversation "pizza - nah that's Italian" or "sushi - but that's Japanese." After fifteen minutes, I had the students turn in their group discussion papers and found the lists to be short but fairly consistent. Top answers included: maple syrup, poutine, back bacon and pancakes. To my surprise there also was no mention of First Nations foods, although maple syrup was mentioned indirectly. I wondered at their struggle and whether my question was too broad and perhaps, before we attempted to answer the visitor's question, we needed to discuss what is meant by culture. What is Canadian? Is Canadian culture defined only by the present or does it include the past? Is Canadian food culture strictly that which we see in the media or on a restaurant menu?

I had a second cultural encounter with my students a few months later but this time with my grade 7s as I was demonstrating how to cook fried rice. As we were discussing the culturally diverse ingredients that could be included in this recipe, the only Asian student in the class excitedly began to share with us the different kinds of soy sauce his family uses, the different types of rice they buy at the store and what ingredients his mom uses in their fried rice recipe. Because he was normally quiet, I was pleased to see his engagement with the lesson, how he readily identified himself culturally with the food being prepared, and also his willingness to share with his classmates his food heritage, which in turn increased their interest in what was being cooked. This little encounter demonstrated both the power that food can have as a tie to who we are and its ability to demonstrate inclusivity by the sharing of food and normalizing that which may appear different. I wondered if I might be able to duplicate this personal connection with food with students in my other classes.

Also at this time, the home economics department at my school decided to offer a new course entitled "Cultural Cooking 9". I would be teaching this course and I was excited to have a venue to begin addressing some of the questions I had begun to ask myself when teaching my grade 7s and 8s about what Canadian food culture meant and the impact that cultural cooking can have on student engagement and also their personal connection to food.

Lastly, in early spring of last year, the BC government released the new home economics curriculum document. The new learning outcomes provide teachers with exciting opportunities to introduce cultural foods into their teaching and more specifically, the inclusion of First

Nations traditional foods. This inclusion of First Nations traditional foods would provide my students with the opportunity to explore Canadian cultural food history and to better understand the reciprocity of food sharing that occurred between the First Nations peoples, the first European settlers and other cultures.

These four events, plus the reading of the articles by Pazzaglio and William (2012) and Resor (2010) paved the way for me to develop an introductory unit for my grade 9 Cultural Cooking class that not only explores what is meant by Canadian cultural foods, but also helps students to find personal connections to their cultural food heritage and to further cultural diversity and inclusivity.

Unit Theme: Food, Colonialism and Identity

Grade Level: These activities are designed for students in grade 9.

Guiding Questions:

1. What does it mean to eat Canadian cultural foods?
2. How has colonization influenced the cultural food heritage of the First Nations peoples?

Provincial Learning Outcome

Students are expected to know about

First peoples traditional foods, including ingredients, as well as, harvesting and gathering.

Activity #1: Exploring Culture

a. Working in small groups and using collaborative/cooperative learning strategies, have students discuss the following question: What is culture?
b. Read the story entitled ***Same, Same but Different*** by Jenny Sue Kostecki-Shaw.
c. Returning to their small discussion groups, have students discuss how the story defines culture. Does this discussion lead them to make any changes to their definition of culture? Groups should be prepared to share their definition to the class. Teacher should point out similarities and differences. Can the class reach consensus on one definition of culture?

d. Working independently, students identify their own cultural heritage by answering the following journal questions: What is your cultural heritage/Where do your ancestors come from? Do you eat foods that are traditional to your culture? Provide some examples. What are some traditional foods that you eat on holidays, birthdays, Christmas, Canada Day, etc. Students share their answers with their small groups.
e. Having defined culture and having reflected on their own cultural food heritage, have the small groups define Canadian Cultural Foods. Guiding discussion questions could include: How are foods and culture related? What factors influence the food choices we make? Groups should be prepared to share their definition to the class. Teacher should point out similarities and differences. Can the class reach consensus on one definition of Canadian cultural foods?
f. Using this definition, have students generate a class list of Canadian cultural foods.
g. For assessment, have students complete an exit slip describing two things they learned about food, culture and Canada.
h. An extension activity could include having students bring a traditional/cultural family recipe to class and in small groups share the significance of this food for their family - when this food is eaten and why.

Activity #2: Bannock: A Traditional Food in a Modern World

a. Invite one or two First Nations elders to share their family stories about the preparation and eating of bannock. (My school's two First Nations Advocates came and shared their family bannock stories with my class. Their bannock stories were rooted in two different historical events: residential schools and First Nations reservations. These events impacted their family's honored traditions of inheritance and the right of choice to gather and hunt traditional foods for their families).
b. Teacher demonstrates a recipe for Bannock Tacos. (Recipe can be found in Appendix A). During the demonstration, the following topics can be presented and discussed:
    i. How colonization affected the daily food supply for the First Nations

peoples.

ii. History of bannock.

iii. Differing ingredients and preparation techniques for making bannock.

iv. First Nations sustainable agricultural practices.

v. Cultural profile of a taco.

vi. Nutritional profile of bannock taco.

vii. Define food fusion and discuss how a bannock taco meets the criteria.

viii. Notable First Nations chefs and cookbooks.

c. Students complete the recipe sheet and hand into the teacher.

Activity #3: Bannock Tacos in the Making

a. Students prepare and serve the bannock tacos.

b. Students' tacos are assessed according to established criteria set out by the teacher during the demonstration.

Activity #4: What does it mean to eat Canadian?

a. In small groups, have students complete the Bannock Mind Map (Mind map can be found in Appendix B). Hand in to the teacher.

b. Working independently, students are to complete a journal entry that may addresses some of the following questions: What did you enjoy learning the most in this unit on Canadian Cultural Foods? What impact did Europeans and other cultures have on the food choices of the First Nations peoples? Now that you have learned a little about Canadian Cultural Foods, how would you answer the foreign visitor's request for some examples of Canadian cultural foods? Which of the stories, that were told or read to you during this unit, did you feel spoke to you the most about Canadian culture and explain why?

Student Assessment

Formative Assessment

Activity #1 - feedback from class discussions, journal entry regarding family cultural/traditional recipe and exit slip.

Activity #2 - completed recipe sheet.

Activity #3 - teacher/student conference on meeting established recipe criteria.

Summative Assessment

Activity #4 - bannock mind map and individual journal entry.

Journey's End

The unit on Food, Colonialism and Identity had come to a conclusion and I was time to reflect on what has been learned, both by my students and also by me. The students indicated that they really enjoyed learning about Canadian cultural foods and where thrilled to be making a First Nations cultural twist on one of their favourite foods - tacos. My non-aboriginal students expressed excitement at using bison meat and found the different ways of cooking bannock, especially on a stick over a fire, very interesting. My First Nations students were excited about cooking the bannock tacos because we had never included a First Nations food in our school cooking repertoire before and they felt a sense of pride at this inclusion. Also, although many had eaten bannock before, or had made it with grandparents or aunties, some had never made their own bannock and were excited to have that personal experience. Both groups of students demonstrated some understanding of the complex relationship between how dominant political groups can affect the availability of food and the limiting of food choices for the minority cultural group. But there was also an awareness of how positive cultural contacts can alter food choices and can create new and interesting foods.

Overall, I felt the unit was a success. I felt that students began to understand the complex and diverse nature of Canadian food culture. Students had the opportunity to make personal connections to their own cultural food heritage and identity. Also, students were able to demonstrate inclusivity by being inspired by and accepting of the food stories shared by the First Nations Advocates, as well as, by showing a willingness to try a new food/ingredient.

From developing and implementing this unit, I learned that it is important to consider the following when teaching a unit on colonialism and First Nations culture: have an awareness of our assumptions and beliefs about colonialism versus colonization; First Nations people are not one cultural group but rather they encompass many diverse nations with their own cultural practices, customs and languages; bannock is not a universal First Nations food but it is a great example of a fusion food; and finally, whenever possible use primary sources of information, such as elders, so as to make learning authentic.

Looking to the future, I would like to be able to collaborate with the Social Studies 9 teachers and see if we can tie First Nations studies, colonialism and food more strongly together and therefore make learning cross-curricular and more meaningful.

Acknowledgment

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Appendix A

NAME: _____
BLOCK: _____ UNIT: _____
DATE: _____
OVEN TEMP: _____'C _____'F
TIME _____

PRODUCT # ___ ***Bannock Tacos***

COOKERY PRINCIPLES ***NUTRITION***

EQUIPMENT

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

INGREDIENTS

200	g.	ground bison
2	mL	chili powder
2	*mL*	*oregano*
2	*mL*	*paprika*
1	mL	cumin
1	mL	onion powder
1	*mL*	*garlic powder*
1	mL	pepper
0.5	mL	salt
200	mL	diced tomatoes
80	mL	frozen corn
80	mL	black beans
1		piece raw squash
50	mL	water
2		lettuce leaves
1		block of cheese
60	mL	margarine
500	mL	flour
15	mL	baking powder
2	mL	salt
200	mL	water

METHOD

____ *1. Prepare for lab. _____.*
____ *2. Preheat the oven.*

Taco meat

____ *3. Wash the squash, peel it and then cut into 1 cm dice.*
____ *4. Wash and shred the lettuce.*
____ *5. Grate the cheese on a paper towel.*
____ *6. In a non-stick frying pan, brown the meat on medium heat. Use a wooden spoon to break up the meat.*
____ *7. Add the spices when the meat is browned and cook for 1 minute.*

____ *8.* *Add the diced tomatoes, squash, corn, beans and water and cook for 5 minutes or until squash is tender and liquid is mostly absorbed.*
____ *9.* *Place the toppings on top of the bannock as follows: meat mixture, lettuce and cheese*
____ *10.* *Serve with sour cream and salsa if desired.*

Bannock

____ *11.* *In a large bowl, combine flour, baking powder and salt.*
____ *12* *Cut in the margarine until it resembles coarse meal.*
____ *13* *Make a well and slowly add water.*
____ *14.* *Using a fork, push the flour through the liquid to form lumps of dough. Using your hands, bring together the lumps of dough.*
____ *15.* *Place dough on the counter and knead 10 times.*
____ *16.* *Shape the dough into a ball and cut into 4 even sized pieces.*
____ *17.* *Shape each piece into 6 cm ovals about 2 cm thick.*
____ *18.* *Place on an ungreased baking sheet and bake until golden.*

TEST FOR DONENESS

1. *Meat is cooked through and completely browned.*
2. *Bannock is cooked through and golden brown.*

STANDARDS:

1. *Meat is thoroughly cooked, thick and well spiced.*
2. *Bannock is golden and cooked through.*
3. *Vegetables are evenly diced and lettuce is shredded.*
4. *Pleasing in flavor.*
5. *Attractively presented.*

TRAY

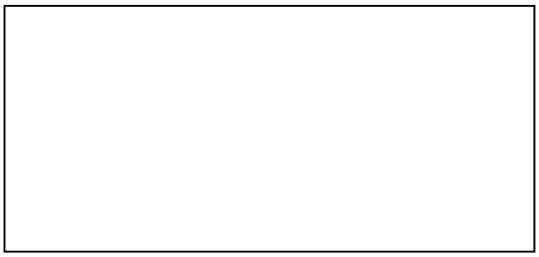
Small c. c.- _____
Small c. c.- _____
Sm. bowl.- _____
Sm. Bowl - _____
*Liq. Meas. -*_____

Duty _____

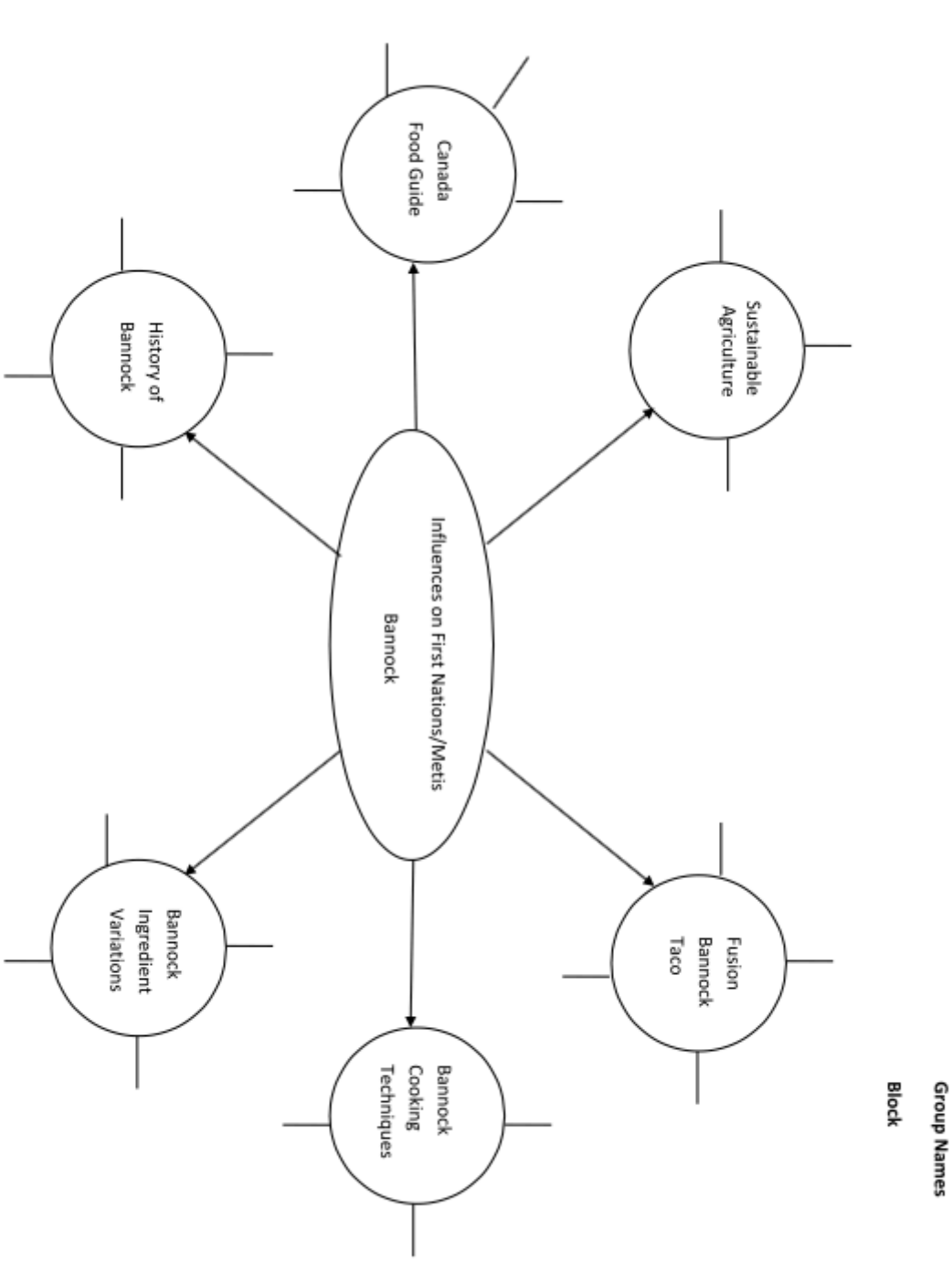
Mis en place _____
Clean up check _____

1. What are the 3 food safety rules you must follow in this lab? _____
   _____
2. What are 3 protein substitutions we can make for this recipe? _____
   _____
3. What is the cultural food history of bannock? _____
   _____
   _____
4. What makes Bannock Tacos a "fusion' food?_____
   _____
   _____
5. Which traditional First Nations agricultural practices would make some of the ingredients in this recipe sustainable?_____
   _____
   _____

Table Setting



Appendix B



Adapted from: Smith, M.G, and deZwart, M. (2013) *Food in Society: An introduction.* Toronto: McGraw-Hill Ryerson, p. 35.

Stirring the Pot: Reimagining a Pedagogy for the Teaching of Home Economics

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A Dwindling Discipline: What is Lost?

Home economics is at a critical juncture: evolve or become a relic of the past. The discipline of home economics is in decline around the world as programs are closed, reduced, and/or restructured, and shortages of trained home economics teachers are reported in many locales around the globe (Apple, 2015; Smith and de Zwart, 2010). Smith and de Zwart (2010) point towards the restructuring and dismantling of home economics programs as having influenced the shortage of home economics teachers where the subject area is taught including Asia, Africa, Europe, the United States, South America, Central America, and Canada. Apple (2015) describes the process of restructuring home economics programs as the dismantling of cohesive programs where selected courses valued by industry are absorbed into other colleges. For example, many universities have restructured nutrition and dietetics courses within pharmacy and health sciences colleges and skills-based courses such as clothing and textiles, foods preparation, and housing and interior design by teacher education programs (Apple, 2015).

Such is the case at the University of Saskatchewan where the College of Home Economics was disbanded in 1990. Nutrition and dietetics courses were filtered into the College of Pharmacy and Nutrition and skills based courses to the four year, College of Home Economics Teacher Education Program through the College of Education (Lee, 1990). The Home Economics Teacher Education Program was further diminished in 2016, when the four-year Bachelor of Education with a teaching area in home economics was reduced to a 30-credit unit certificate program (College of Home Economics, 2007-2008; Explore: Practical and Applied Arts, 2016). While the reasons driving the restructuring and reduction of home economics programs are convoluted and complex, warranting in depth analysis in future

research, this work will focus of what the discipline of home economics loses when programs are diminished.

Apple (2015) maintains that fundamental pedagogies or theoretical methods of teaching home economics are left by the wayside as time constraints of smaller programs are imposed. My experience as a graduate of the four-year Home Economics Teacher Education Program at the University of Saskatchewan mirrors Apple's estimation that reduced programming results in fewer opportunities to focus on pedagogy in favor of practical skills. Many of my peers and I required hands on training to get our lacking skills up to a level where we could functionally teach students in a classroom setting. The one methods course offered through our four-year program emphasized tangible, hands on methods of instruction including how to conduct a demonstration and how to address controversial and sensitive topics through roleplaying, drama, and puppet shows. Theoretical underpinnings of the discipline and pedagogical approaches to home economics were sidelined in favor of applied skills that we could put directly to use in a classroom setting.

The restructuring of the College of Home Economics to a four-year teacher education program (with only 2 years of home economics instruction) at the University of Saskatchewan is one example of many that illustrate how reductions in programs necessitate reductions in content leaving little time to develop pedagogical approaches to the teaching of the discipline. Thus, home economics teachers are being taught *what* to teach with little time left to learn *how* to teach the subject. Apple charges that home economists have suffered a case of lost identity as pedagogical foundations of the discipline are lost in the restructuring of home economics programs. For Apple, the journey of home economists has come full circle as we have a unique opportunity, informed by the needs of society, to reconnect with the social justice oriented pedagogical roots of the field so that we may find what has been lost.

Reclaiming our Identity

Apple (2015) challenges that the dismantling of home economics colleges in post-secondary institutions disrupts home economics educator's knowledge of and ability to actualize one of the fundamental goals of the profession: to improve the lives of families and individuals through the pursuit of social, ecological, and economic justice. In September 2015, the United

Nations released a document outlining 17 Sustainable Development Goals (SDGs) to accomplish by 2030. Having consultative status with the United Nations, The International Federation for Home Economics (IFHE) responded with a position paper affirming general support for the United Nations SDG's and the role of home economics in transforming societies to achieve sustainable development (n.d.). IFHE admonished that ensuring sustainable consumption and production patterns is essential to eradicate poverty, guarantee green economies, support sustainable development and address pressing issues of climate change by reducing ecological footprints-major tenets towards a more social, economic and ecological just world. IFHE extends insular perceptions of the family by explaining:

> Home economists support holistic approaches while being concerned with the empowerment and well-being of individuals, families and communities. Its historical origins place Home Economics in the context of the home and household, and this is to include the wider living environments as we better understand that the capacities, choices and priorities of individuals and families impact at all levels, ranging from the household, to the local and also the global (glocal) community (International Federation for Home Economics and Associated & Associated Country Women of the World, p. 5).

From a historical standpoint Nickols and Collier (2015) look to Ellen Swallow Richards, one of the American founders of home economics, who saw home economics as the interplay between people within family units and their environment. Similarly, Crowley (1986) notes that Adelaide Hoodless, a founder of home economics development in Canada, viewed the discipline as a response to the inequities created by industrialization. Many researchers agree that while the aims of home economics may have shifted over time, in the present, home economists share a vision for a more humane world and have a desire to work towards issues of social, ecological, and economic justice with the purpose of improving the human condition (Apple, 2015; Peterat, 2001; Smith & de Zwart, 2010; Smith & Peterat, 2000).

As we face very real and serious ecological, societal, and economic dangers brought on by our consumption driven way of life, home economics pedagogies can be utilized to educate citizens beyond the basic skills of home economics, towards a sustainable and just society. IFHE concurs that quality of life for individuals, families, and communities is directly related to

the success of sustainability efforts related to halting the harmful industrial processes of consumption and production (n.d.). Smith and Peterat (2000) argue that mere skills-based programs ignore the rich and complicated history of activism in the field which has traditionally been an essential part of the home economist's collective identity as well as a foundational objective in home economics pedagogy. Kohlstedt (1995) elucidates the importance of understanding the foundations of one's discipline by explaining that "[h]istorical work has become a resource for social activists who believe that understanding the past can help direct current events and future policies" (p. 19). Now more than ever, the discipline of home economics has an essential role to play in changing the trajectory of our society, and the larger environment in which we live. Scholars knowledgeable in the area of citizenship education agree that skill-based approaches to teaching and learning are designs for compliance rather than being the source of radicalization required to inspire people who are properly equipped to challenge the root causes of social injustices and inequities (Davis, 2000; McMurtry, 1998; Westheimer, 2015). Further, Kumashiro (2015) offers that most undergraduate teacher education programs outside of home economics generally focus on skills at the expense of pedagogy. Peterat (1989) argues that in home economics, practice and theory should be equally considered. In order to truly address and remedy issues of ecological, social, and economic disparity, home economics educators and in turn, their students must be given the tools to think critically, challenge the status quo, and identify and act as agents of change. A blend of Kevin Kumashiro's (2015) anti-oppressive education and Joel Westheimer's (2015) citizenship education coalesce to offer a promising foundation towards a social justice oriented pedagogy of home economics education. Foster (2013) demands that society come to recognize"…that the struggles for human equality and for the earth are becoming one. There is only one future: that of sustainable human development" (p. 50).

A Social Justice Pedagogy of Home Economics

An important precursor to situating Kumashiro (2015) and Westheimer's (2015) work within the field of home economics is the post-modern theoretical underpinning that there is no best practice, one size fits all, pedagogical approach to teaching and learning. Specifically, Kumashiro asserts that knowledge is fragmented and incomplete, revealing a multitude of

perspectives when considered through different lenses of analysis. If knowledge is incomplete then learning is an ongoing process that is never finished, unlike skills based courses that are often outcomes based wherelearning is done when the goal is reached. An epistemological approach that views learning as a continuing, life-long journey allows for learning to value the process, possibly exceeding expectation, as opposed to merely reaching an intended destination.

Kumashiro (2015) and Westheimer (2015) contrast through the terminology used to outline their respective approaches to teaching towards social justice through anti-oppressive and citizenship education frameworks. Where Kumashiro leans towards the theoretical, Westheimer's work is complementary by providing practical applications and examples that enhance Kumashiro's concepts. While the basic frameworks of both authors are different, there are many similarities in content and philosophy as the theoretical foundations of both approaches to social justice pedagogies converge.

Kumashiro's (2015) anti-oppressive education engages teachers to instruct towards social justice frameworks by moving through four distinct stages of learning: crisis, uncertainty, healing, and activism. In the crisis stage, students should be presented with information that challenges their perceptions of the world with a goal of impassioning them, helping them confront their own biases, and seeing problems from different perspectives than their own positionality. In the uncertainty stage, the teacher must examine implicit and explicit curriculum to uncover institutional and personal biases within classroom structures (ex: what is being implicitly communicated if a school provides a nutrition program for students without a lunch but refuses to offer options for students with dietary restrictions due to religion, health, and personal choice?). The healing stage occurs as students come to terms with their bias and strengthen their new understanding as they contextualize the problem on micro and macro political levels as well as drawing connections between the past and present and the local and global communities. Davis (2000) adds that history and social studies are a practical method to build student engagement by allowing opportunities to understand the contexts of experience and providing educators with the chance to bridge historical inequities with present inequalities to increase relevancy. The final stage of activism occurs as teachers facilitate students to see themselves as changemakers as they work to addressing the root causes of inequalities.

In contrast to Kumashiro's (2015) four stages of anti-oppressive education, Westheimer (2015) outlines three types of citizenship education. Personally, responsible citizens are created by programs that emphasize meritocratic values (success is achieved through hard work and personal responsibility). Westheimer (2015) charges that personally responsible citizens "ignore the fact that government policy, corporate behavior, and systematic structural challenges represent important concerns for citizens who hope to improve society" (p. 48). Participatory citizenship teaches students to contribute to their communities by giving of their time to aid in particular causes related to issues of economic, ecological, and/or social justice (ie: serving meals at a local soup kitchen, sewing quilts for students in community schools etc.). Participatory citizenship is a natural extension of home economics classrooms as there are often opportunities to connect to the community through sewing projects and the bond building that occurs around the preparation and sharing of food. Social justice oriented citizens understand that they can make a difference through involvement in the community, have been equipped with the skills for effective and informed civic participation, recognize and understand the root cause of social injustices, value diverse perspectives and understand and seek to change established systems and structures.

Social justice oriented citizenship mirrors Kumashiro's four stages of anti-oppressive education despite the use of different terminology. Social justice oriented citizenship parallels anti-oppressive education, particularly with regards to unsettling student understandings by confronting alternate perspectives, the need for more background to contextualize and understand new perspectives; a need for opportunities to empower students through activism such as lobbying, demonstrations, protests; and working to enact policy changes. Participatory and social justice oriented citizenship differ as participatory citizenship (while positive and action oriented), does not solve the root causes of inequities and offers temporary solutions. Through an experience that helped me recognize a need for a social justice pedagogy of home economics (as well as serving as a motivating factor in this endeavour), I have come to apply a blend of both Kumashiro and Westheimer's pedagogies that I use with intention as I develop lessons for my own students, that meet curricular objectives while addressing current issues of economic, ecological, and social justice though home economics.

From Theory to Practice

There are many modules in the Saskatchewan Home Economics Evergreen Curriculum that allow for opportunities to teach to issues of social, ecological, and economic justice. These include food additives, protein foods, the Canadian food mosaic, food and health, language of fashion, fashion industry, clothing decisions, redesign, restore, or recycle, housing needs, community housing and development, and energy efficient housing. I have done the most development on a current food issues module which is part of a grade 11 and 12 food studies class at the high school where I teach in Saskatoon, Saskatchewan. My school is located in a blue collar, working class neighborhood with a wide range of student abilities, socio-economic backgrounds, and ethnicities. The school where I teach is culturally diverse with a high population of Indigenous and English as an Additional Language students. Lack of student engagement in the current food issues module as evidenced by high truancy, low exam scores, and few completed assignments, inspired me to find a way to help students connect to a unit steeped in theory when they had signed up for an elective they imagined would be purely practical. How could I engage my students in burgeoning issues of import to society that I couldn't help but notice in documentaries, new stories, and local food movements happening within our city?

Typically, I taught students in my senior level foods class about our global food system through an examination of the social, economic, and ecological benefits and consequences of industrialized agricultural and food production practices. Often, I presented students with counter narratives to dominant industrial food production discourses, stressing the value of eating locally (i.e. organic foods, farmer's markets, local you-picks outside our city etc.). It wasn't until an in-class outburst from a student who was frustrated with the lack of accessibility of counter discourses to the industrial food system (based on cost, and location related to transportation or lack thereof) that I was forced to confront my own privilege and positionality as a white, university educated, middle-class woman and realize that my teaching informed students about the problem but did not empower them to make a change.

As a class, we decided to explore other options such as community gardens, urban agriculture, cooperative yard sharing programs, local low cost cooperative food box programs,

and community markets as viable, sustainable, and affordable options located in core, densely populated areas without other food alternatives. We had discussions that unearthed and explored root causes of food insecurity and began a letter writing campaign to food companies, Health Canada, the Ministry of Agricultures in Saskatchewan, local MLAs, and grocery stores. The learning that occurred in our Current Food Issues Unit was above and beyond the intended learning destination. It captivated students by helping them realize their power as consumers, and engaged citizens. As replies were mailed back to our classroom, our class shared our triumphs and discussed next steps when faced with discouraging replies, all the while addressing the importance of the collective voice of the masses and the need for awareness and activism to perpetuate the battle in order to bring about change. Rather than merely easing the burden of social, economic, and ecological inequities through service learning projects which are common to home economics (ie: serving at local soup kitchens etc.), my students were captivated with their newfound knowledge of how to actively participate in civil society and that they had the power to challenge the root causes of the inequities. Improved exam performance, project quality, and completion, as well as parental observation, and student surveys at the end of the year revealed that my class was riveted by our unit and valued the theory portion of our class every bit as much as the cooking.

Reading the work of Kumashiro (2015) and Westheimer (2015) helped me to revisit and understand the professional growth I had experienced in my Foods 30 class, as I facilitated an authentic learning experience for my students. As I move ahead in my practice, I continue to reflect on ways that I can replicate similar conditions in other courses and subject areas with intention. Consistent with Westheimer and Kumashiro's assertion that there is no grand-narrative or best practice approach, the framework for a home economics social justice pedagogy is flexible, adaptable and should be embarked upon with students at the helm. My experiences have taught me the need to confront students with complicated issues with opposing viewpoints to help students connect with more teacher guidance at the beginning of our unit with a gradual release of control and responsibility for learning destinations as the unit progresses. My students have shown me that learning as a group needs to be complemented with opportunities to explore individual topics of interest, leading me to prepare resources lists of suggested articles and

documentaries to guide student exploration. Likewise, my students have helped me learn the need for time to reflect (for students *and* teachers) and to have opportunities to have cognitive sharing sessions with peers to help process developing feelings, and thoughts.

Reconnecting home economics skills with pedagogy has the potential to help home economics actualize the goals of the profession to better the lives of individuals, families and communities and the environments in which they exist. Home economics practitioners have the opportunity to help create empowered citizens who will seek to address issues of social, economic, and ecological inequalities. The bridge that connects theory to practice can be strengthened despite the restructuring and reduction of home economics education programs which emphasize skills as the battle for physical and intellectual space within higher education rages on. Perhaps, institutions will come to recognize the worth and value of home economics programming as a stand-alone discipline beyond teacher education programs and pharmacy, nutrition and dietetics colleges (a fact that home economics practitioners have known all along), as we follow suit with other disciplines turning their gaze towards the very real and pressing issues of climate change. Without a planet on which to exist, this may well be the home economist's last stand.

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Remodeling a Food Studies Unit Plan: A Wholistic approach to Teaching about Food and Health

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I am currently taking my Masters in Home Economics and Everyday Life through the University of British Columbia. This paper is based on a class I took with Dr. Gale Smith: Curriculum and Instruction in Home Economics. In this class, we examined various lenses through which to view aspects of curriculum and instruction. It opened my eyes to the complexity of creating curriculum, and the importance of being purposeful and reflexive in my practice. The culminating project was to remodel an existing unit plan using the concepts we had learned about throughout the course.

Why remodel a unit plan?

This approach is based on Dr. Smith's concept of lesson plan remodelling, which adds a global perspective to what we teach. According to Smith, "global content in curriculum is often considered an add-on, which leads to a fragmented understanding of its relevance and importance" (Smith, n.d., p. 1). In order to remodel a unit plan, it must be approached critically. It is important to first describe and then conduct a critique of the current plan before moving through the various lenses (Smith, n.d.; Smith 2008).

While curricula are designed to impart information about various subjects, they may be lacking in depth and approach a subject from only one perspective. This underlines the importance of examining them critically. The unit I chose to remodel is Food and Health, from Saskatchewan's Food Studies 10, 30 curriculum (Saskatchewan Ministry of Education, 1999) which is based primarily on teaching healthy eating habits through adherence to Canada's Food Guide standards and an emphasis on nutrition over other aspects of health.

Description of the Standard Approach (Current Unit Plan)

The Food and Health unit mainly focuses on the science of nutrition in regard to health. There is some emphasis on identifying the factors that influence students' current food habits and ways they can improve their diets. Students learn about the four food groups according to Canada's Food Guide as well as the importance of the six nutrient groups. Students analyze the

nutritional value of easily available foods as well as the nutritional content of their and their peers' diets. They learn to plan meals that incorporate properly balanced nutrition. That sounds pretty good, doesn't it? Upon closer examination of the existing unit, I was able to critique it.

Critique

This unit does not address any of the reasons that people may have for having inadequate nutrition, such as poverty. It assumes that poor nutrition is a result of poor choices and that by understanding the role of nutrients and by following the Canada Food Guide that students can improve their health (Smith and Peterat, 2000). There also appears to be an assumption that students are in control of what they eat. Nutrients are the main focus with no mention of whole or minimally processed foods. There is no mention of the social or environmental impact of various food choices.

In this paper I will explain the lenses I used to examine and remodel this curriculum and to represent a more wholistic view of food and health:

1. Vaines's three views of professional practice
2. Vaines' key concepts
3. Curriculum orientations
4. Food literacy
5. Productive pedagogies

Lens 1: Vaines's three views of professional practice

It is not only the content being taught, but the way in which it is delivered that is important. Vaines' (1991, 1997) three views of professional practice: no-choice, technical-rational, and reflective, have very different implications for teaching practices. Although the three views are quite distinct, there is probably some overlap in most teachers' teaching practice.

In the no-choice view, the teacher is ensuring that they are fulfilling the job requirements, no more, as in to "cover the curriculum". I envision covering the curriculum as using a checklist and checking off when an objective has been "covered" or "touched upon". That way, if anyone comes and checks your lesson plan book, they can see that you have done your job. The no-choice teacher may take any available pre-made material that fits with the subject, even if it is somewhat outdated, in order to have something for the students to work on. Often there may be

busy work, so that the students are producing something and going through the motions of learning. This could be the way that the no-choice teacher envisions their role as a teacher – they get to decide what the students will do.

In the technical rational view, if a teacher is an expert in the field, they may have the desire to ensure that everything is done correctly, adhering to proper procedure or protocol. There is not much room for creativity, rather there is a right and a wrong way to go about teaching the material. Time is of the essence: "monochronic and linear" (Vaines, 1996, p. 150), and once a concept is "covered", it's time to move on. The teacher may have perfected their teaching plan, making minor adjustments from year to year, but basically they have a strict schedule to follow with no extra time to linger on any given topic. Disruptions to the schedule are stressful, since the time must be made up, often in the form of homework.

In the reflective practice view, the teacher's role is largely guided by the students. While the teacher may in fact be an expert in their field, they prefer to facilitate the learning and offer guidance for the students to make their own discoveries. In the end, they are preparing their students to be able to make their own informed decisions, rather than simply regurgitating facts that they have learned. The reflective practice teacher shows that there are multiple ways to approach problems. The reflective practice teacher continues to modify and update what they are teaching in order to keep it fresh and relevant, as Vaines would do (Arcus, 2004).

While the existing unit appears to be designed for the technical-rational teacher with the teacher as expert, giving facts and teaching proven truths, more value can be added by teaching through reflective practice. With reflective practice, the teacher acts as facilitator and guide and allows students to come to their own conclusions through inquiry and personal reflection. The technical-rational view would say that Canada's Food Guide is <u>the best</u> way of determining healthy eating practices while a reflective practitioner would say Canada's Food Guide is <u>one</u> way of determining healthy eating practices.

Lens 2: Vaines's key concepts

Vaines developed several key concepts for teaching home economics. These include making teaching practices inclusive of ecology as a unifying theme, including moral questions, and including many ways of knowing within the learning experience.

Ecology as a unifying theme

Vaines was an advocate of ecology as a unifying theme in home economics. According to her, people have become distanced from their surroundings (Vaines, 1988; Vaines, 1990). We must keep the health of the planet we call home and how our actions can impact our surroundings in mind. Some examples of viewing food and health from an ecological perspective would include:

- Identifying that our food habits may have ecological implications for the environment
- Analyzing how personal food choices can affect others
- Understanding and analyzing Canada's Food Guide from an ecological perspective (and not just taking it at face value)

Moral questions

Moral questions refer to the sacred nature of daily life. "Moral questions have to do with how human beings should act in situations that involve the well-being of oneself, of other human beings, of other living things, or of the earth" (M.G. Smith, personal communication, August 2016). Some moral questions to consider when addressing the topic of food and health could include:

- What information should be on the food guide?
- Who should be involved in the construction of a food guide?
- Whose needs does the food guide serve?
- What is my responsibility regarding food?

Many Ways of Knowing

The topic of food and health can involve many ways of knowing (McKinnon Crook, 2004; Mudry, Hayes-Conroy, Chen & Kimura, 2014; Smith, 2009). The terms *conceptual* knowledge and *procedural knowledge* are quite commonly found in curriculum documents, regardless of the subject areas. Conceptual knowledge relates to the understanding of, or knowing about, the subject. Procedural knowledge is more action-based or a how-to approach (Parsons and Beauchamp, 2012). The traditional approach to teaching about food and nutrition is to teach about the nutrient content of food and how to prepare food. Traditional ways of knowing taught in food and nutrition may include:

- practical knowledge, such as how to prepare certain foods
- scientific knowledge, for example micro- and macro-nutrients, calories in various foods, baking chemistry, etc.
- logical/mathematical knowledge, including units of measure, adapting recipes to accommodate various serving amounts, etc.

While these traditional ways of knowing about food and nutrition are useful, there are several other ways of knowing about food and nutrition that would enrich the topic of food and health.

Narrative ways of knowing can be included by using personal stories to create connections among class members, or to use food stories to help teach a concept.

Lifeworld knowing involves personal experience, and can offer students a good starting place for new knowledge.

Embodied knowledge comes from one's own bodily experience, engaging the senses. Engaging in hands-on experiences can help build this way of knowing.

Lens 3: Curriculum Orientations

The same curriculum can be taught in a variety of ways. Smith and Peterat's (2000) four curricular approaches to health education include the factual and transmissive, factual and transactional, interpretive and transactional, and critical and transformational approaches. Each of these approaches has different levels of student/teacher involvement.

Factual and Transmissive

- The purpose of this unit would be to teach students about proper health and nutrition, according to Canada's Food Guide.
- Information is transmitted as truth and learning is linear and logical.
- The teacher is the transmitter of the knowledge.

Factual and Transactional

- The purpose of this unit would be to help students make informed decisions about their health and nutrition.
- Students learn to problem solve, for example planning meals using the Food Guide.
- The teacher acts as a class facilitator.

Interpretive and Transactional

- The purpose of this unit would be to help students see the relationship between health and nutrition from various perspectives.
- Students learn to seek out health information and apply it to their own lives, using what works for them.
- The teacher acts as a facilitator and a resource person, but allows students to direct the content of the course.

Critical and Transformational

- The purpose of this unit would be to engage students in critical thinking about social issues pertaining to food and health.
- Students would critically analyze the Canada Food Guide and question the influence of stakeholder groups: whose needs does the Canada Food Guide serve?
- The teacher is an advocate for social justice, and encourages students to question information and to think critically.

Lens 4: Food Literacy

The fourth lens involves food literacy, as opposed to nutritionism (Pollan, 2008). Whereas food literacy implies an active exploration of food, nutritionism reduces food to individual nutrients, ignoring all other issues that surround food. Smith (2009) outlines various forms of food literacy: **Functional:** re-skilling; teaching basic food skills such as shopping, preparing, growing food

- Explore guidelines for evaluating nutritional information and learn kitchen techniques to prepare simple meals

Interactive: explore meanings and significance of food, seeing the social aspect of food

- Interview friends/family members to learn about their cultural heritage and the role of traditional foods every day and on special occasions (Saskatchewan Ministry of Education, 1999).

Critical: develop critical thinking skills; examine politics of food access and distribution, the commoditization of food

- Examine reasons that people have no access to food, e.g., cost, food deserts etc.

Lifeworld: explore and share their own experiences; empathizing with others; social/cultural/religious significance of food

- Create a healthy eating plan that takes into account the student's food preferences, lifestyle and cooking experience.

Narrative: share food-related stories, find common areas among each other's experiences

- Contribute to a class cookbook that contains background stories about the food/traditions. Food literacy empowers learners.

Lens 5: Productive pedagogies

Productive pedagogies are focused on the students' learning processes (The State of Queensland Department of Education, 2002). Teachers can use the framework of Productive Pedagogies to critically examine their practice. These pedagogies include creating connections, having in-depth objectives and promoting intellectual rigor. In order to interest students in food and health, class examples should be related to their own experiences, such as using social media as a sharing platform and analyzing personal food issues. At times, curricula contain repetitions or inefficient language. Combining outcomes can create more meaningful objectives, which are more process-oriented. These new objectives would emphasize communication, analysis and taking defensible action**.** Promoting intellectual rigor engages students in higher level thinking. For example, students would critically analyze the food guide instead of simply memorizing it.

Conclusion

This assignment of critically examining and reworking a unit plan has opened my eyes to the many ways that a curriculum can be interpreted. It has made me take an honest look at my own teaching practices and has made me a more reflective practitioner who tries to create meaningful learning experiences for my students. I have gained valuable insights not only into how to change my teaching focus – but how to involve students in new ways of thinking. I can now go beyond simply teaching facts about food to teaching about food to inspire students to transform the world.

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Why Eat the Rainbow? – Inviting Students to Voluntarily Eat More Vegetables and Fruit

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Many students grow up hearing, "eat your vegetables," but how many of our Canadian young people do eat their vegetables? Perhaps taking an anonymous informal survey (see Appendix) will highlight how successful the youth in our communities are with respect to this important aspect of nutrition.

The 2004 Canadian Community Health Survey: Nutrition (CCHS) conducted face-to-face interviews with over 35,000 people. This 24-hour dietary recall was the largest, most comprehensive national survey of Canadian eating habits. The data gathered was compared to the recommendations (Statistics Canada, 2006) of Canada's Food Guide to Healthy Eating for People Four Years Old and Over (Minister of Public Works and Government Services Canada, 1992). The findings indicated many Canadians do not have a balanced diet (Statistics Canada, 2006). Of adolescents, ages 14 to 18, 53% of boys and 63% of girls (Statistics Canada, 2007), as well as 50% of adults, did not eat the recommended daily minimum servings of vegetables and fruit. Fat contributed 31% of Canadians' daily calories, with more than 25% of adults aged 31 to 50 ingesting more than 35% of their total calories from fat. Adolescents consumed 33% of their calories from fast-food. Canadians consumed about 18% of their daily calories at breakfast, but almost 10% skipped breakfast. Many got more calories from snacks than breakfast; adolescent boys ate 30% of their calories as snacks. More than 41% of the calories gained from snacks came from Other Foods, the foods and beverages not part of the four major food groups. Other Foods represented about 23% of total calories consumed. The CCHS indicates Canadians face nutritional challenges (Statistics Canada, 2006).

Chronic Diseases of Lifestyle

Paleolithic people had a life expectancy of 33 years at birth (Kaplan, Hill, Lancaster & Hurtado, 2000). They died hunting, from infections due to no antibiotics, and in childbirth. If they escaped these problems, they did not face cardiovascular disease, diabetes, hypertension, or obesity (Sun Media, 2002).

Canadians born in 2015 have the life expectancy of 80 years for boys and 84 years for girls (WHO, 2016). In 2012, the ten ranked most common causes of death in Canada were cancer, heart disease, stroke, respiratory disease, unintentional injuries, diabetes, Alzheimer's disease, influenza and pneumonia, suicide, and kidney disease (Statistics Canada, 2015). Why the difference?

The modern Western diet, consumed by developed countries, including Canada, features high amounts of fat, refined carbohydrates, and salt. Despite enrichment and fortification, this diet provides insufficient micronutrients compared to the traditional diets of non-developed peoples (Bosse, 2009). Due to this poor diet and other lifestyle conditions, many chronic diseases of lifestyle (CDL) have emerged (Cordain et al, 2005). CDL, also named noncommunicable diseases, generally progress slowly with long durations. The four main types are cardiovascular diseases (e.g., heart attack, stroke), cancer, chronic respiratory diseases (e.g., chronic obstructive pulmonary disease, asthma), and diabetes (WHO, 20015). Canada includes metabolic diseases (e.g., obesity, gallbladder disease, kidney disease, osteoporosis), gastro-intestinal disorders (e.g., constipation, hiatus hernia, appendicitis, diverticular disease, hemorrhoids), and dental caries (Bosse, 2009).

Canada's dependence on the modern Western diet (Bosse, 2009) has lead to nutritional challenges (Statistics Canada, 2006) resulting in CDL (Bosse, 2009; Cordain et al., 2005). Can this predicament be rectified?

Vegetables and Fruit

The modern Western diet consists of unhealthy consumption of fat, refined carbohydrates, and salt. Fat provides 30 to 35% of total energy, with 10 to 12% as saturated fat. Carbohydrates provide 50 to 53% of total energy, primarily in refined forms (e.g., sugar, white flour, white rice), causing low dietary fibre intake. Daily fibre consumption is 17 to 21 grams for men and 10 to 18 grams for women (Bosse, 2009); whereas, a healthy diet includes 25 to 38 grams (Dietitians of Canada, 2012). Daily salt intake is high at 6 to 12 grams (3.6 to 7.2 grams of sodium) (Bosse, 2009). Sodium's tolerable upper intake level is 2,300 mg per day, but Canadians should aim for the adequate intake of 1,500 mg, as consumption above 2,300 mg poses possible health risks (Health Canada, 2012).

Changing a nation's diet is problematic as it requires food habits and lifestyle changes. Small changes over time achieve success (Schaeffer, 2008); therefore, people should choose small changes producing large results. One method is to increase vegetables and fruit consumption. As 50% of Canadians do not eat the recommended daily servings (Statistics Canada, 2006), this food group requires attention. Generous consumption of vegetables and fruit is recommended to prevent CDL (Willet et al, 2006).

The average Canadian's diet is beige due to processed foods high in fat, refined carbohydrates, and salt. These foods are tasty, quick, cheap, convenient, and produce satiety, but lead to CDL as they are devoid of the micronutrients abundant in vegetables and fruits. Processed foods are stripped of most micronutrients, and enriched and fortified only with those required by law or needed for marketing (Schaeffer, 2008).

Vegetables and fruit are whole foods (Disabled World, 2016) packed with the nutrients (vitamins, minerals, water, soluble and insoluble fibre, enzymes, and phytochemicals) necessary for health. Variety ensures obtaining all health benefits, so eating vegetables and fruit from each rainbow colour is vital. Savouring the spectrum (Meridian Education Corporation, 2004), vegetables and fruit add appetizing colour while creating a palette of nutrients, each with different health benefits. This stress-free method maximizes each meal's nutritional value (Disabled World, 2015). The memory tool "Eat the Rainbow" encourages a varied consumption of vegetables and fruit, guaranteeing essential nutrient diversity (Disabled World, 2016).

Why are colourful vegetables and fruits important? Colour determines micronutrient availability. Phytochemicals occur only in plants and work synergistically with whole foods' vitamins, minerals, and fibre to promote health and lower disease risk. Some phytochemicals are colourless. There is no colour ratio to be eaten and no colour is superior, but a rainbow of vegetable and fruit ensures a variety of micronutrients (Schaeffer, 2008).

Obesity is a conspicuous Canadian CDL. Counting colours instead of calories may lead to weight control and improved health (Schaeffer, 2008). Increased vegetables and fruit consumption will not cause weight gain. An individual can lose weight if they are physically active while replacing Other Foods, including fast-foods, with vegetables and fruit. However, healthy eating is not downing greasy fries and vegetables with loads of dip; how vegetables and

fruit are prepared is important (Meridian Education Corporation, 2004). Increasing vegetables and fruit consumption while maintaining or reducing caloric intake will reduce fats, refined carbohydrates, and salt ingestion; thereby, reducing CDL risk, including obesity.

The following colour guide offers ways to brighten meals (Disabled World, 2015) while preventing disease (Schaeffer, 2008):

Red

Red vegetables and fruit contain the phytochemicals ellagic acid, quercetin, hesperidin (Disabled World, 2015), and lycopene, and vitamin E (Schaeffer, 2008). They support heart and urinary tract health (Meridian Education Corporation, 2004), immunity, vision (Disabled World, 2015), joint tissue effected by arthritis, and prostate and breast tissue. They reduce hypertension, tumor growth, low density lipoprotein (LDL) cholesterol (Disabled World, 2016), and the risk of cancer (Disabled World, 2015), including prostate cancer (Schaeffer, 2008). They cope with allergens and respiratory problems, act as antioxidants and anticarcinogens in the gastrointestinal tract, have anti-proliferative effects on cancer cells (Disabled World, 2016), and fight free radicals (Schaeffer, 2008). Vegetables include beets, red onions and potatoes, rhubarb, and tomatoes. Fruit includes cherries, cranberries, pomegranates, red grapes, and watermelon (Disabled World, 2015).

Orange and Yellow

Orange and yellow vegetables and fruit contain the phytochemicals zeaxanthin, flavonoids, lycopene (Disabled World, 2016), and beta-carotene, as well as the enzyme papain (Meridian Education Corporation, 2004), potassium, vitamin C (Disabled World, 2016), and omega-3 fatty acids (Schaeffer, 2008). They support heart health, strong immunity, excellent digestion, healthy mucous membranes, good eyesight (Meridian Education Corporation, 2004), skin health (Schaeffer, 2008), collagen formation, strong muscles, healthy joints, and alkaline balance. They reduce age-related macula degeneration, LDL cholesterol, hypertension (Disabled World, 2016), and the risk of cancer (Meridian Education Corporation, 2004), specifically prostate (Disabled World, 2016), lung, esophagus, and stomach cancers (Schaeffer, 2008). They fight free radicals, speed wound healing (Disabled World, 2016), and assist blood sugar regulation (Schaeffer, 2008). Vegetables include butternut squash, pumpkin (Disabled World,

2016), sweet potatoes, and yellow corn and peppers. Fruit includes apricots, cantaloupes, mangoes, peaches, and pineapples (Disabled World, 2015).

Green

Green vegetables and fruits contain the phytochemicals beta-carotene, isothiocyanates, lutein, suforaphane, and zeaxanthin, as well as chlorophyll, fibre, vitamin K, folate, calcium, potassium, omega-3 fatty acids (Disabled World, 2016; Schaeffer, 2008), and vitamins A and C (Meridian Education Corporation, 2004). They support strong bones and teeth (Meridian Education Corporation, 2004), retinal health, and eyesight. They prevent coronary artery disease (Disabled World, 2016). They protect against cancer (Meridian Education Corporation, 2004). They reduce hypertension, LDL cholesterol (Disabled World, 2016), and the risk of birth defects, cataracts, and macular degeneration (Meridian Education Corporation, 2004). They normalize digestion time, fight free radicals, boost immunity, speed wound healing, and promote strong muscles and joints (Disabled World, 2016). Vegetables include artichokes, asparagus, broccoli, peas, and leafy greens such as spinach. Fruit includes avocados, apples, honeydew melons, kiwis, and limes (Disabled World, 2015).

Blue and Purple

Blue and purple vegetables and fruit contain the phytochemicals lutein, zeaxanthin, resveratrol, flavonoids, ellagic acid, quercetin (Disabled World, 2016), and anthocyanins, and vitamin C (Meridian Education Corporation, 2004). They support sharp memory, and urinary tract (Disabled World, 2015), retinal, and digestive health. They reduce LDL cholesterol, tumor growth, cancer cell activity (Disabled World, 2016), and general risk of cancer (Disabled World, 2015). They boost immunity, improve mineral absorption, fight inflammation, act as gastrointestinal tract anticarcinogens, cope with allergens and respiratory problems, speed wound healing, promote strong muscles and joints (Disabled World, 2016), provide antioxidant and anti-aging benefits (Disabled World, 2015), fight free radicals, and prevent heart disease (Meridian Education Corporation, 2004). Vegetables include black salsify (Disabled World, 2016), eggplant, and purple cabbage, endive, and potatoes (Disabled World, 2015). Fruit includes blueberries, currants, figs, plums, and raisins (Disabled World, 2016).

White and Brown

White and brown vegetables and fruit contain the phytochemicals allyl sulphur compounds, isothiocyanates, thioethers (Davis & Milner, 2012), and indole, as well as potassium (Meridian Education Corporation, 2004), beta-glucans and lignans (Disabled World, 2016). They support heart health and normal cholesterol levels. They reduce hypertension and the risk of cancer, especially stomach, prostate, breast (Meridian Education Corporation, 2004), colon, and hormone-related cancers. They boost immunity, activate B and T cells, balance hormone levels (Disabled World, 2015), and prevent strokes (Meridian Education Corporation, 2004). Vegetables include cauliflower, mushrooms, onions, parsnips, and turnips. Fruit includes bosc pears, dates, ginger, and white nectarines and peaches (Disabled World, 2016).

Nutrition Education

Why do 50% of Canadians not eat the daily recommended servings of vegetables and fruit (Statistics Canada, 2006)? Numerous reasons include – one, people may not have been taught at home to eat vegetables and fruit. Parenting is the most important job as it molds children and the quality of Canadian society, yet few people are trained for it. Inadequately prepared parents may raise poorly cared for children (Smith & de Zwart, 2010). Two, food insecurity is a growing problem (Whitney & Rolfes, 2008). Three, social reproduction, as schools are not institutions of equal student opportunities, but mechanisms for perpetuating social inequalities (Collins, 2009). School structures and activities transmit social inequality from one generation to the next (Doob, 2016); not all students receive nutrition education. Four, people think they lack time, money, access, and skills necessary to prepare vegetables and fruit. Five, people do not care for vegetables and fruit due to limited exposure.

Projections indicate this current generation might be the first with shorter life expectancies than their parents (Belluck, 2005). Our youth represent Canada's future. They remind us of community and our responsibility to others, with the need for concern for greater public interest and social relations not judged solely within the constraints of profit, consumerism, and commercialism (Giroux, 2003). Thus, there have been numerous calls for nutrition education (Smith & de Zwart, 2010), which combined with health education, is necessary to eliminate poor diet (Smith & Peterat, 2000). Such an education must be Canadian.

Canadian curriculum should reflect its people, land, history, languages, and cultures, not relying on intellectual traditions from elsewhere. Curriculum is a journey's departure, not destination (Chambers, 2003a), so it should answer, Who am I? and Where is here? As Canadians, these questions imply, How do I find my way around here? Can I survive here? How? Who were the people here before me (Chambers, 1999, p. 137)? Life is a journey, a pilgrimage of sorts, taking learned lessons along the way. If important life skills have not been acquired, such training must be realized during the journey (Chambers, 2003b); hence, the need for nutrition education within Canadian schools.

One's beliefs regarding the purpose of education shape the education one offers (McGregor, 2011). Despite a dominant ideological society of individualism, successful nutrition education is steeped in the emergent ideology's caring for others (McGregor, 2008). Nutrition education curriculum must touch deep within so it stirs teachers and students to animated living. Curriculum as planned is not curriculum as lived, but both should be charged with life. Nutrition education curriculum should be so inviting it welcomes teachers and students (Aoki, 2005).

Home economics is an integrated, holistic system with nutrition education as one subfield (McGregor, 2010). Its courses provide the only hands-on opportunity for students to learn nutrition and healthy eating through food preparation. This method is recognized as more effective in changing behaviour than traditional knowledge transmission (Smith & de Zwart, 2010). A critical and transformational approach produces the best results (Smith & Peterat, 2000).

Nutrition education should develop sustainable, health-promoting eating behaviours (Reynolds, 2006), where health promotion enables people to increase control over their health; thereby, improving it. This includes tackling communicable diseases, CDL, and other health threats (World Health Organization, 2005). Using productive pedagogies as a framework allows important critical and reflective practice. The four concepts are intellectual rigour, supportive classroom environment, recognition of difference, and connectedness (Department of Education, The State of Queensland, 2002). Intellectual rigour refers to a classroom environment where every student is required to learn at a high level; it is supported by the strategies of higher order thinking, deep knowledge, deep understanding, substantive conversations, knowledge as

problematic, and metalanguage (Reynolds, 2002a). Supportive classroom environment is necessary for students to thrive and demonstrate success (Blackburn, 2008), and includes student direction, social support, academic engagement, explicit quality performance criteria, and self-regulation. Recognition of difference embraces cultural knowledge, inclusivity, narrative, group identity, and active citizenship (Department of Education, The State of Queensland, 2002); learning about students' cultures reveals who they are (Giroux, 2004). Connectedness is the degree to which what is learned in the classroom addresses issues and problems having salience outside of school (Department of Education, The State of Queensland, 2002) and comprises knowledge integration, background knowledge, connectedness to the world, and problem-based curriculum (Reynolds, 2003). When students' everyday lives become part of everyday school life, then a better connection with knowledge occurs. This creates meaningful knowledge, making it critical and transformative (Giroux, 2004).

Living nutrition education curriculum has appropriate scope and sequence built on students' background knowledge (Georgia State University, n.d.). Scope is the depth and breadth of the content taught for a specific unit, course, and grade level, including the development of the content; depth is the amount of detail learned regarding a topic and breadth is the number of topics covered in a course (NEMSES, n.d.). Students should learn fewer topics, but in greater depth so to develop greater understanding (Reynold, 2002b). Sequence is the order content is taught for best learning (Georgia State University, n.d.).

Inviting Students to Voluntarily Eat More Vegetables and Fruit

A learning unit and its activities should be based on a sound model for health promotion, connect with students' real worlds, address real-life problems, address nutritional priorities, promote intellectual rigour, and cover fewer topics, but in greater depth (Reynolds, 2002b). The following unit of learning activities uses an action-oriented, empowerment approach (Reynolds, 2006).

Part A

The following unit is comprised of five lessons. As they are short lessons, they are a good fit for schools featuring shortened classes on collaboration days. Each shortened class, a different vegetables and fruit colour is featured. A short presentation features micronutrients and

their health benefits, suggestions for incorporating the showcased vegetables and fruit into the diet, and examples of the day's vegetables and fruits. The students are presented with a minimum of six different vegetables and fruit (or one per student kitchen), and given preparation instructions. Each kitchen chooses a vegetable or fruit to prepare for a class buffet. The students select from the buffet and eat their snacks with their classmates. This short lesson is excellent for Food Studies 9, but also appropriate for Foods and Nutrition 10 through 12. To give older students more learning responsibility, they research and deliver the presentation.

Part B

The benefits of eating vegetables and fruit are not solely dependent upon raw consumption. Cooking enhances some phytochemical activity; thereby, increasing absorption (Schaeffer, 2008). The Foods and Nutrition 10 through 12 students develop this concept. After clean-up, each kitchen choses a vegetable from the colour of the day. They research and select a recipe using their vegetable, careful to limit excess fat, refined carbohydrates, and salt. Guidelines regarding time constraints, allergies, intolerances, food preferences (e.g., vegetarian, vegan, religious beliefs) are followed. Each kitchen produces a recipe with a market order featuring their vegetable. The following week, during a regular length class, students prepare their recipes for a second buffet featuring a variety of vegetable dishes. Each kitchen provides their recipe for interested classmates.

Note

Part A is incorporated into nutrition education at a secondary school in norther BC. Staff members have mentioned this unit, along with apples from the Rotary Club, and vegetables and fruit from the BC School Fruit and Vegetable Nutrition Program (BC SFVNP, 2016) and the school greenhouse and garden project, has led to higher involvement of students voluntarily eating more available vegetables and fruit. Students comment on the vegetables and fruit they have eaten for the first time. One student shared that almost every vegetable and fruit he has eaten during these classes has been new to him. Part B is in the planning stages, but should extend the students' learning in a hands-on critical and transformative manner. The greater students' exposure to eating vegetables and fruit, the greater their chance of voluntarily eating the rainbow.

Conclusion

Canada's dependence on the modern Western diet, consisting of unhealthy consumption of fat, refined carbohydrates, and salt (Bosse, 2009), has lead to nutritional challenges (Statistics Canada, 2006). The resulting CDL (Bosse, 2009; Cordain et al, 2005) lead to most Canadians dying of conditions not caused by communicable diseases (Statistics Canada, 2015). A change in the average Canadian's eating habits and lifestyle is required.

Canadians need to make small changes in their diets that produce large results (Schaeffer, 2008). A generous consumption of vegetables and fruit will assist in preventing CDL (Willet et al, 2006). As 50% of Canadians do not eat the recommended daily servings (Statistics Canada, 2006), increasing vegetables and fruit intake while maintaining or reducing calories will reduce the consumption of fats, refined carbohydrates, and salt; thereby, reducing CDL risk.

Today's media information is not all science-based nutrition providing the principles of a healthy diet. Therefore, making informed food choices leads to developing sound eating habits (Disabled World, 2015). The Canadian Produce Marketing Association recommends filling half the plate with vegetables and fruit every meal (CPMA, 2016). When a colourful variety of vegetables and fruit is included every day (Disabled World, 2015), colour and health are equated, resulting in improved health (Schaeffer, 2008).

Nutrition education regarding health benefits is important (Schaeffer, 2008), but must be presented as hands-on where students learn nutrition and healthy eating through food preparation (Smith & de Zwart, 2010). This critical and transformational approach (Smith & Peterat, 2000) is the most effective method of changing behaviour (Smith & de Zwart, 2010). Giving students opportunities to prepare and eat vegetables and fruits, raw and cooked, will increase students' voluntary consumption. The memory tool "eating the rainbow" encourages students to eat an assortment of vegetables and fruits daily; thereby, increasing the amount and variety of micronutrient consumption. The more Canadian youth engage in hands-on learning in this area, the greater chance they will voluntarily eat more vegetables and fruit, resulting in increased health and decreased CDL risk.

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Appendix

24-Hour Dietary Recall - Vegetables and Fruit

Please **CIRCLE** the appropriate information: **Gender**: Female Male

Grade: 9 10 11 12 Adult **Age**: 13 14 15 16 17 18 19


Fresh, frozen or canned vegetables

Serving size = 125 mL or ½ cup

Number of servings: 0 1 2 3 4 5 6 7 8 9 10 10+

Leafy vegetables

Cooked – Serving size = 125 mL or ½ cup

Number of servings: 0 1 2 3 4 5 6 7 8 9 10 10+

Raw – Serving size = 250 mL or 1 cup

Number of servings: 0 1 2 3 4 5 6 7 8 9 10 10+


Fresh, frozen, or canned fruits

Serving size = 1 fruit or 125 mL or ½ cup

Number of servings: 0 1 2 3 4 5 6 7 8 9 10 10+

100% juice (NO sugar added)

Serving size = 125 mL or ½ cup

Number of servings: 0 1 2 3 4 5 6 7 8 9 10 10+

Total number of servings: 0 1 2 3 4 5 6 7 8 9 10 10+

(Minister of Health Canada, 2007a; Minister of Health Canada, 2007b)

A Canadian Home Economist Studying in NYC

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"Is ham a carbohydrate?"

My grade nine home economics students are earnestly perplexed and I am struck once again by the almost comical state of food illiteracy that I've experienced working with Canadian youth. Though a single incident rarely serves as an accurate indicator of learning, I cannot help but also have the sinking feeling that I have somewhere failed my students

I apply for and am granted an educational leave of absence from my teaching position to pursue a Masters Degree in Nutrition and Education at Columbia University's Teachers College in New York City.

This paper details my academic, research and volunteer experiences in the hopes of sparking interest and providing resources and ideas to educators and students of home economics.

Academic

Teachers College, Columbia University

Teachers College is Columbia University's graduate school of education, health and psychology. The *Masters of Science in Nutrition and Education in the department of Health & Behavioral Studies* is a cross disciplinary program that I find reflects what home economists strive to do: achieve optimal health for all via multi-disciplinary work. Coursework ranges from the biochemistry of human nutrition to exploring the role of emotions in dietary behaviour to learning strategies for program development and assessment.

The program is unique in that it allows students from a broad array of academic and professional backgrounds to transition to a career in nutrition. There are seven pre-requisite courses that students must complete prior to applying, but otherwise any undergraduate degree is acceptable. This program also offers students the opportunity to become a Registered Dietitian, a professional credential that is valid in both Canada and the USA. *For further information visit: http://www.tc.columbia.edu/health-and-behavior-studies/nutrition/*

Laurie M. Tisch Center for Food, Education & Policy

The Tisch Center for Food, Education & Policy is a research center that is housed in the nutrition program at Teachers College, Columbia University. The Tisch Food Center studies the connections between a just, sustainable food system and healthy eating. The Center translates its findings into recommendations and resources for educators, policy makers, and community advocates. *Various curricula, games and activities may be found on the Tisch Food Center website: http://www.tc.columbia.edu/tisch/resources-overview/ . The Tisch Food Center can be followed on Twitter @tischfoodcenter .*

Research

The Edible Schoolyard--Harlem

The Edible Schoolyard aims to educate and empower students to make healthy food choices for themselves, their communities and their environment through an integrated, tri-pronged program:

1. Students learn about where food comes from through hands-on gardening classes.
2. Students prepare and sample foods from their garden in cooking classes.
3. School families and local community members are invited to shop at a weekly on campus farmers' market. The farmers' market was added when it was recognized that students' learning and eating behaviour transformation was confined to the school setting due to the lack of fresh produce available in the local, low-income, neighbourhood.

Every summer, Chef Alice Waters' original Edible Schoolyard in Berkeley, California, offers 5-day trainings to educators interested in implementing similar programming in their own school. The Edible Schoolyard Academy covers topics such as curriculum development and integration, funding strategies as well as rituals and routines of garden and kitchen classrooms. The cost to attend is $650 and scholarships are available.

Edible Schoolyard Academy: https://edibleschoolyard.org/training%20

About Edible Schoolyard: http://edibleschoolyard.org/our-work

Volunteer

The James Beard Foundation

The James Beard Foundation is a culinary association whose mission is to celebrate, nurture and honour chefs and other leaders making America's food culture more delicious, diverse and sustainable for everyone. This includes Canadian home economics educators and students of all levels! The foundation is currently seeking to extend its reach through its scholarship program. Scholarships come as cash grants or tuition waivers and are available to anyone pursuing long or short-term food or nutrition related studies anywhere in the world.

For more scholarship information: https://www.jamesbeard.org/scholarships

For more information on the James Beard Foundation: https://www.jamesbeard.org/

These opportunities have transformed my understanding of sustainable food and nutrition programs and have developed my thinking about home economics education. I am eager to continue to explore the various programs and learning opportunities available in New York City and to share what I learn. Please feel free to contact me at eqh.grant@gmail.com with any questions!

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Effect of Bamboo/Cotton Blended Knitted Fabric on Performance Properties

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Abstract

Blending is considered to be one of the major factors to obtain the desired fabric properties with both physical and mechanical natural properties. In fact, these properties play an essential role in determining the quality standard and it is suitable for the aimed performance properties which have currently become a prime importance for researchers in the field of developing and promoting final products to keep up with the latest worldwide textile technologies. This study aims to determine the influence of different loop lengths and the effect of fiber blending of single jersey knitted fabrics on the mechanical and comfort properties.

Three kinds of fabrics samples were knitted with single jersey 100% bamboo, 100% cotton, 70% bamboo/ 30 % cotton with three loop lengths, 2.6, 2.9, 3.2 mm. A number of experiments were carried on fabric samples to measure physical properties like weight, thickness, and mechanical properties such as bursting strength, air permeability, relative water vapor permeability, Ultra-Violet protecting factor, and thermal insulation. Results stated that the blend fabric of 70% bamboo / 30 % cotton gave medium results between 100% bamboo and 100 % cotton regardless of the loop length, which proves that blending process has an influential impact on the mechanical properties.

Keywords: Bamboo ; Cotton:Blend: Knitted Fabric; Performance Properties

Introduction

Although natural fibers entail comfort properties to the users of textile apparel, the demands have been changed with rising technological trends and standards of living. Users of textile materials

not only desire comfort but aesthetic and functional properties as well. Also the product should be cost effective in order to meet the requirements of customers. Fabrics that have been commercially used in young children's clothing put into consideration hand, absorbency, and adaptation for body movement which are important requirements for textiles used in young children's clothing. As a result, knit fabrics dominate these types of products (An, et al., 2013).

Bamboo fiber has been used in various applications such as building, construction, and decoration. Bamboo fiber is used in intimate apparels, hygienic products and sanitary materials, nonwovens and home furnishings. Regenerated bamboo fibres have characteristic mechanical properties of superior tensile strength, excellent UV protection, antibacterial and biodegradable characteristics, high moisture absorption, softness, brightness and high flexibility under flexible and compressive loads. With its high moisture absorption capacity, breathability and fast drying behavior, regenerated bamboo cellulose fiber ensures excellent comfort in various applications (Tyagi, et al. 2011).

Fabrics made of bamboo fibres have been growing in popularity, because it has many unique properties and is more sustainable than most textile fibres. Bamboo fabric is light and strong and has excellent wicking properties. Bamboo fabric is very soft and can be worn directly next to the skin. Bamboo fabric is a natural moisture wicking agent as the cross section of a bamboo fiber is filled with multiple microholes and microgaps. Moisture is taken from the body, on contact, and then instantly evaporates. Moisture absorbency is twice than that of cotton with extraordinary soil release (Hussain, et al., 2015) Bamboo is naturally cooler in summer and warmer in winter. Hence, bamboo fabrics were chosen for the study due to increase of the UV- protecting abilities of fabric by means of fabric structure (Sri Vidhya, et al., 2012) Bamboo clothing is an excellent organic choice that has many benefits and advantages over cotton. Products of Bamboo fiber are eco-friendly and bio-degradable, Bamboo fabrics are characterized by their good hygroscopicity, excellent permeability, soft feel and easy dyeing (Das, 2013). Bamboo fabrics require a lower amount of dye for the dying level required. Moreover the coloring agent is absorbed better and faster than in cotton fabrics, and bamboo exhibits fabric colors better than cotton fabrics (Wallace, 2005).

Clothing should ensure appropriate heat and moisture transfer between the human body and its environment in order to maintain the physiological thermal balance of the wearer. That ensures the importance of studying the thermal insulation in children's clothes (Gidik, et al., 2015).

Blending of different fibers is a very common practice in the spinning industries. The blending is primarily done to enhance the properties of blended yarns and to optimize the cost of raw material. The properties of blended yarns primly depend on the properties of the constituent fibers and their compatibility (Majumdar, et al. 2011).

Bamboo fabric was chosen for the blends due to its advantages stated in previous studies as it is cultivated without fertilizers, pesticides or chemical herbicides (Hussain, et al., 2015). Bamboo fiber can be used alone or in blends with other fibers (such as terylene, nitrile, ramie, wool, Tencel, rayon, cotton, silk, modal etc.) according to the product required (Zhou, et al., 2008). It is found that 100% bamboo fabric exhibits better performance than bamboo/cotton (50:50) blended yarn fabrics (Rathod and Kolhatkar, 2014). One of the most important aspects of clothing is comfort. Properties like thermal resistance, air permeability, water vapor permeability and liquid water permeability are critical for the thermal comfort of a clothed body. Comfort plays a vital role in the selection of apparel (Prakash, et al., 2011).

Knitted fabrics not only possess stretch and provide freedom of movement, but they also have good handle, a good level of ultra violet protection (UPF), anti-static property, and an ability to transmit vapor from the body. Therefore, knitted fabrics are commonly preferred for sportswear, casual wear and all types of intimate apparel like underwear, bath-suits, tight t-shirts and socks (Mahish, et al. 2012). Preceded study results showed that when the thickness and weight increases the UPF factor increases (Sri Vidhya and Bhanu Rekha, 2012; Arafa Badr, et al., 2014; Hussain, et al., 2015). Furthermore, untreated bamboo viscose fibers do not have ultraviolet protection or antimicrobial properties, though many have claimed the fibers inherit these properties from the bamboo plant (Sarkar and Appidi, 2009).

Research Problem

Most of the existing clothes are not supporting Performance properties with its mechanical and comfort properties. So the research tried to prove that fiber blends and use of variable loop lengths has an impact on mechanical and comfort properties of fabric to give Performance properties of the clothes.

Purpose of study

The objective of this study was to manufacture fabric samples with different loop lengths that will be superior in comfort and performance and provide freedom of movement. This paper investigates the influence of different loop lengths and the effect of fiber blending of single jersey knitted fabrics on the mechanical and comfort properties.

Research Methodology

Experimental type that depend on fabric manufacture of three samples with three different loop lengths and testing their mechanical and comfort properties.

Limits of research

The fabric examinations were performed in the National Institute for Standards, Giza, Egypt during October 2016 to December 2016.

Terminology

Cotton: Is a natural polymer of pure cellulose. This cellulose is arranged in a way that gives cotton unique properties of strength, durability, and absorbency. Each fibre is made up of twenty to thirty layers of cellulose coiled in a neat series of natural springs. When the cotton boll (seed case) is opened, the fibres dry into flat, twisted, ribbon-like shapes and become kinked together and interlocked. This interlocked form is ideal for spinning into a fine yarn. (Cotton Fiber Definition: Definitions for the Clothing & Fabric Industry)

Bamboo: Bamboo is a type of flowering perennial evergreen plants in the grass family. Giant bamboos are the largest members of the grass family. It is mainly composed of cellulose and lignin, about 70% and 20% respectively. http://www.dassoxtr.com/

Blends : mixing two or more kinds of fibers to spun them in one yarn. (El Aref, 2009)

Knitted Fabric: fabrics manufactured on all kinds of knitted machines, fabric structure are stitches interlocked with each other. (El Aref, M. 2009)

Performance properties: is intended to reach the best results, which are several useful properties of the presence makes the woven comfortable in the specific use required. (Aida Cheta and Khadija Nader,1999)

Materials and methods

Fabric Manufacture

The single jersey 100% cotton fabric -100% bamboo fabric – 70%-30% bamboo/cotton fabric samples were produced on the same knitting machine with 28 gauge, Kemiang Korean model, 15-inch diameter, 45 feeders and with total number of needles equal to 1320. Variable loop lengths was 2.6 ,2.8,3.2 mm respectively value.

Research sample:

9 samples were manufactured for fabrics as follows: - 100% cotton fabric -100% bamboo fabric – 70%-30% bamboo/cotton fabric with loop lengths 2.6 ,2.8,3.2 mm respectively.

Fabric Testing

The fabric weight ASTM D3776, thickness ASTM D1777, ultraviolet protection factor (U.P.F) AS/NZS 4399, air permeability ASTM D737, thermal insulation ASTM D1518 and water vapor permeability and ASTM E96 were evaluated in accordance with the standards mentioned respectively.

Statistical analysis of the data (Kotz, et al., 2006)

Data was fed to the computer and analyzed using IBM SPSS software package version 20.0 (Kirkpatrick & Feeney, 2013). Quantitative data was described using mean, standard deviation. Significance of the obtained results was judged at the 5% level.

1- F-test (ANOVA): For normally distributed quantitative variables, to compare between more than two groups, and Post Hoc test (LSD) for pairwise comparisons
2- Pearson coefficient: To correlate between two normally distributed quantitative variables

Results and discussion

The influence of the experimental factors: weight and thickness ,ultraviolet protection, thermal insulation and water vapor permeability transport properties were evaluated for significance using the analysis of variance for all variable loop lengths 2.6 ,2.8,3.1 mm respectively value and different blends ratios . Physical properties were measured as long as mechanical properties, Table (1).

Table (1): Comparison between the studied groups according to different parameters

Loop Length	Fabric content	Fabric weight (g/cm^2)	Thickness (mm.)	Bursting strength (N)	U.P.F (%)	Air permeability ($L^3 / m^2 /$ sec.)	Relative water vapor permeability (%)	Thermal insulation (mK.m2..W-1)
2.6mm (tight)	100% Bamboo	1.35 ± 0.01	0.32 ± 0.02	292.1 ± 12.2	3.52	249.8 ± 1.6	57.9 ± 1.95	4.94 ± 0.5
	100 % Cotton	1.40 ± 0.01	0.40 ± 0.01	429.8 ± 16.4	6.33	164.0 ± 1.6	54.5 ± 1.4	7.02 ± 0.43
	70% Bamboo/ 30% Cotton	1.36 ± 0.01	0.39 ± 0.02	326.9 ± 13.3	4.3	252.6 ± 3.1	51.4 ± 0.99	5.6 ± 0.2
2.9mm (medium)	100% Bamboo	1.20± 0.01	0.30 ± 0.01	283.5 ± 6.3	3.11	270.6 ± 1.14	58.7 ± 1.5	4.2 ± 0.7
	100 % Cotton	1.25 ± 0.01	0.38 ± 0.01	397.7 ± 17.24	5.74	174.2 ± 1.9	55.5 ± 1.1	6.6 ± 0.2
	70% Bamboo/ 30% Cotton	1.24 ± 0.01	0.36 ± 0.02	283.8 ± 8.2	3.35	276.4 ± 2.4	52.8 ± 1.81	5.3 ± 0.22
3.2mm (loose)	100% Bamboo	1.15 ± 0.04	0.29 ± 0.01	272.3 ± 3.8	2.76	307.6 ± 2.3	59.4 ± 2.9	3.9 ± 0.39
	100 % Cotton	1.20 ± 0.04	0.36 ± 0.01	385.5 ± 10.6	5.66	217.8 ± 2.2	56.3 ± 1.8	5.9 ± 0.7
	70% Bamboo/ 30% Cotton	1.17 ± 0.01	0.34 ± 0.02	275.1 ± 5.6	3.27	290.2 ± 2.95	54.8 ± 1.4	4.5 ± 0.11

Table (2): Comparison between the studied groups according to different parameters

Fiber type	Air permeability (L^3 / m^2 / sec.)	Relative water vapor permeability (%)	Thermal insulation (mK.m2..W-1)
F (p)	2539.032* (<0.001*)	6.273* (<0.001*)	31.915* (<0.001*)
	Significant	Significant	Significant

F,p: F and p values for ANOVA test

*: Statistically significant at $p \leq 0.05$

It is obvious from the statistical and experimental evaluation that all the studied properties: Air permeability, Relative water vapor permeability, Thermal insulation values are significantly affected at ≤ 0.05 significance level by fabric type, Table (2). These results agree with Prakash and Ramakrishnan (2013) who stated Statistical analysis also indicates that the results are significant for air permeability, thermal resistance, thermal conductivity and relative water vapor permeability of the fabrics.

Weight

It is clear from the above table that 100% pure cotton fabric have the highest weight that reaches 1.40(g/cm^2), but the bamboo100% fabric and the (70% bamboo 30%cotton) blend the weight is reduced to reach 1.36 (g/cm^2) . As the loop length increases the fabric weight per g/cm^2 decreases Fig. (1).

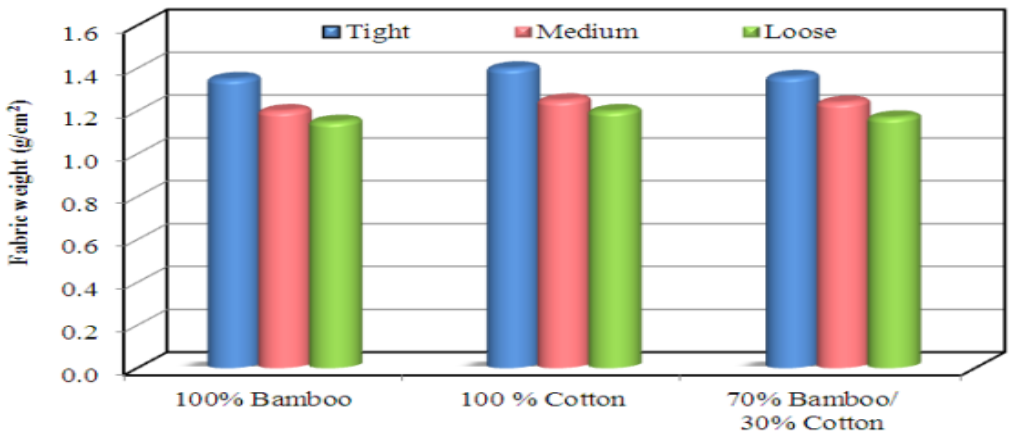

Fig. (1): Comparison between the studied groups according to Fabric weight

Thickness

The least thickness recorded for all variable loop lengths was in the (70% bamboo 30%cotton) blend which proves that the blend improves fabric physical properties and mechanical properties. As the loop length increases the fabric thickness per mm decreases Fig. (2).

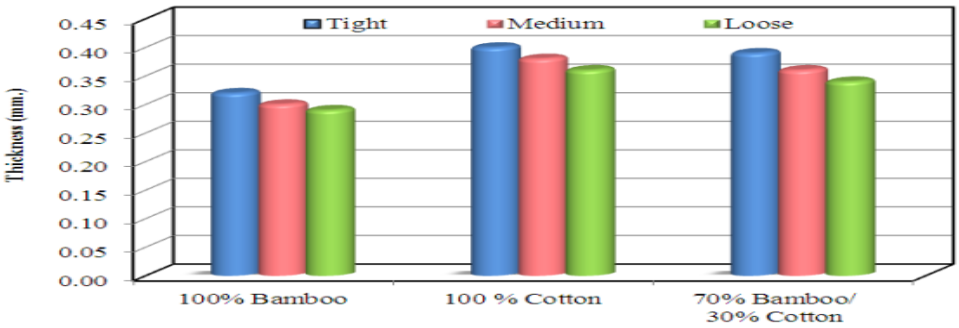

Fig. (2): Comparison between the studied groups according to Thickness

Therefore it is observed that the presence of bamboo content in the fabric reduces the fabric weight which agrees with preceding results (Mahish et al., 2012) as bamboo rich fabric becomes thinner and lighter weight. Regarding the loop length 3.2 mm the fabric weight and fabric thickness is significantly lower than the other two loop lengths 2.6 mm , 2.9 mm .this resulted conclusion agrees with (Chidambaram et al., 2011).

The knitted fabrics made from bamboo-blended yarns have a lower thickness and a lower mass per square meter than the cotton fabrics. The water-vapor permeability and air permeability shows a concomitant increase as the proportion of bamboo fiber increases (Prakash, 2013).

Bursting strength

Regarding the results of table (1), it is clear that in all loop lengths 2.6 mm , 2.9mm ,3.2mm, the highest bursting strength was related to 100% cotton fabric with the values 429.8N, 397.7 N, 385.5 N respectively, and the lowest bursting strength was for 100% bamboo in all loop lengths, whereas, the blend gave medium values which means that it improved the specifications of bursting strength. These results differs with Filiz (2011) but agrees with Hussain et al. (2015) and Prakash et al. (2011).
It has been found that from the table (1) as the loop length increases the bursting strength decreases in all fabric types. Thus, the blend ratio and loop length have a significant effect on the bursting

strength as seen in Fig (3), which agrees with Çoruh (2015).

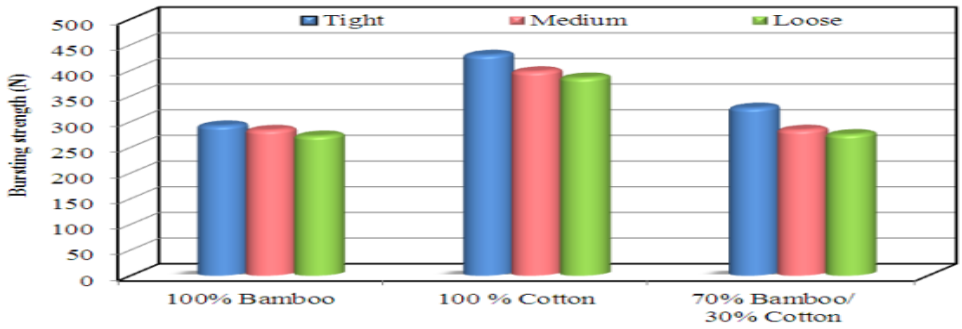

Fig. (3): Comparison between the studied groups according to Bursting strength

Ultraviolet Protection Factor (U.P.F)

UV Radiation is defined as "that portion of the electromagnetic spectrum between x rays and visible light" (Zeman, n.d.). The ultraviolet radiation band consists of three regions: UV-A (320 to 400 nm), UV-B (290 to 320 nm), and UV-C (200 to 290 nm). UV-C is totally absorbed by the atmosphere and does not reach the earth. UV-A causes little visible reaction on the skin but has been shown to decrease the immunological response of skin cells. UV-B is most responsible for the development of skin cancers (Capjack et al., 1994). Regarding the results of table (1) it is clear that in all loop lengths 2.6 mm , 2.9mm ,3.2mm the best U.P.F factor was 100% cotton with the values 6.33, 5.74, 5.66 respectively.

It is observed that the best U.P.F factor was in the 100% Egyptian cotton for all variables specially for the tight loop length 2.6mm in all fabric types. The worst U.P.F protection factor was the 100% bamboo especially in the loose loop length 3.2 mm by 2.76 . The 70% bamboo 30% cotton blend gave medium values, with the best value 4.3 in the tight loop length 2.6 which proved that blend improved the mechanical properties of the fabric which is the focus of our study. These results agree with Arafa Badr et al., (2014) who stated that U.P.F "ultraviolet protection factor" for single jersey with respect to fiber type. It is observed that blending Egyptian cotton with bamboo fibers improves U.P.F characteristic of the final produced fabric. The possible reason of this is the highest ultraviolet protection property of the naturally Egyptian cotton. (Badr et al., 2014) Fig. (4).

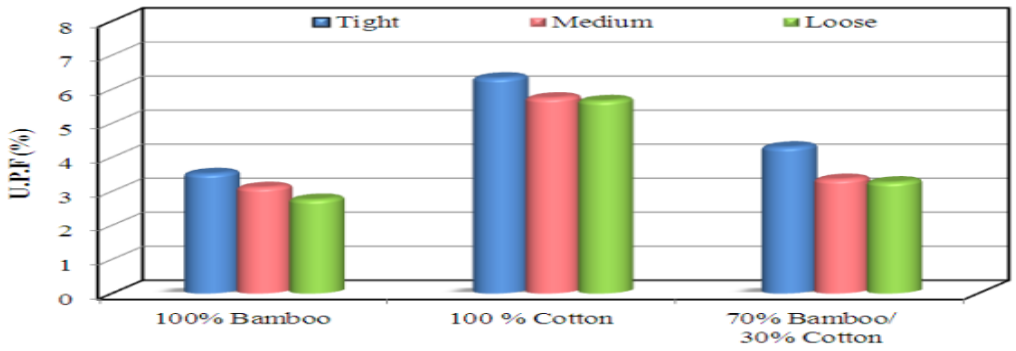

Fig. (4): Comparison between the studied groups according U.P.F

Air permeability

Airflow through textiles is mainly affected by the pore characteristics of fabrics. The pore dimension and distribution in a fabric is a function of fabric geometry. The yarn diameter, knitting structure, course and wale density are the main factors affecting the porosity of knitted fabrics (Mikučionienė et al., 2010).

Air permeability is an important property of textiles which influences the flow of vapor from the human body to the environment and the flow of fresh air to the body. The highest air permeability was exhibited by the single structure made from 100% bamboo. The air permeability of the knitted structure made from 100% bamboo was significantly higher than the air permeability of the knitted structure made from a bamboo viscose and organic cotton blend (Pavko-Čuden & Kupljenik, 2012).

The Air-Permeability values of all the fabrics under study gave results that indicated bamboo 70% Bamboo/30% cotton blends fabrics have the highest air-permeability values in the loop lengths 2.6 mm ,2.9mm, followed by 100% bamboo with air permeability 249.8 ,270.6 and finally 100 % cotton. While in the loop length 3.2mm the 100% bamboo fabric has the highest air permeability, followed by the blend, and finally 100% cotton. The results showed that for a fabric of the given composition the air permeability increases as fabrics become looser. This agrees with GUPTA et al., (2014) who stated that fabrics knitted with higher loop length show higher air permeability and relative water vapor permeability and lower thermal conductivity and thermal absorpitivity. Air permeability increases with the bamboo fiber content in the fabric. The

improvement is more marked when the bamboo fiber increases from 70% to 100% . The air permeability of the 100 % bamboo fabric is around 50 % than that of the cotton for all the loop lengths. This agrees with Chidambaram et al. (2012). For fabrics with a looser structure according to the loop length 3.2 , 2.9, small changes were registered, a marked change in the air permeability. It is obvious that an increase in the loop length increases the permeability to air and comfort of the wearer. An increase in the thickness of knits decreases comfort and the possibility of the person being more comfortable which agrees with Çoruh (2015) and Mikucioniene et al. (2012) who showed that the fabric structures and their respective loop length were significantly influential factors for single jersey knitted fabric properties, like air permeability. Çoruh (2015) studied for fabrics with a looser structure, small changes in the tightness factor gives a marked change in the permeability to air. Meanwhile, when the structure of the knit is thick, even a great change in the tightness factor gives a low variation in the permeability to air. Air permeability of the fabrics were observed to increase with increase in bamboo fiber content Fig. (5).

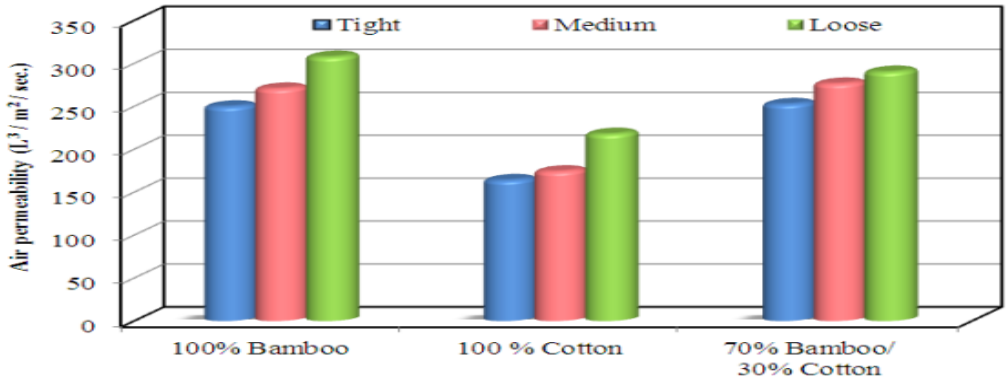

Fig. (5): Comparison between the studied groups according to Air Permeability

Relative water vapor permeability

Water vapor permeability is the ability to transmit vapor from the body. The ability of clothing to transport water vapor is an important determinant of physiological comfort (Skenderi et al., 2009; Wang et al., 2009). Sweat should be removed from the surface of skin to that of the fabric of the next-to skin clothing. After the body has stopped sweating, the textile fabric should release the vapor held in the atmosphere in order to reduce the humidity on the surface of the skin.

Water vapor permeability is the ability of the fabric to transfer the perspiration in the form of moisture vapor throughout it. This property is measured by observing the amount of water vapor passing through a square meter of fabric per twenty-four hours. A fabric with less water vapor permeability is incapable of transferring enough moisture leading to sweat accumulation and discomfort.

Water vapor permeability was indicated to be giving the best results with 100% bamboo for all loop lengths, then 100% cotton and the least values were given from the blend 70% bamboo 30% cotton. Relative water vapor permeability of fabric increases with the increase in loop length which agrees with Gupta et al. (2014).

The fabric thickness and mass per unit area increase, resulting in less flow of water vapor across the fabric surface and vice versa. The mass per square meter (weight) and thickness facilitate the easy passage of water vapor through the fabrics. The higher water vapor permeability of bamboo fabrics can be attributed to the lower values of weight and thickness (Chidambaram et al., 2011).

The knitted fabrics made from bamboo-blended yarns have a lower thickness and a lower mass per square meter than the cotton fabrics. The water-vapor permeability and air permeability shows a concomitant increase as the proportion of bamboo fiber increases (Chidambaram et al., 2012; Prakash & Ramakrishnan, 2013).

The water-vapor permeability also increases as mentioned in previous papers. It may be seen that the water-vapor permeability increases with bamboo fiber content in the fabric. The water-vapor transmission due to diffusion may also be higher for the bamboo fabrics as the moisture regain of bamboo fiber is higher than that of cotton. The higher water-vapor permeability of bamboo blended fabrics can be attributed to the lower values of fabric mass per square meter and thickness, which facilitate the easy passage of the water vapor through the fabrics Fig. (6).

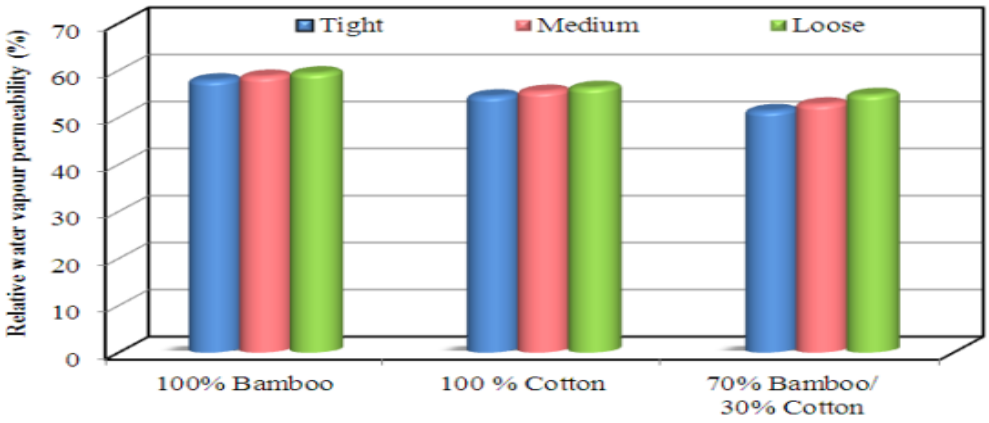

Fig. (6): Comparison between the studied groups according to Relative water

Thermal insulation

Thermal insulation: is a measure of a material's ability to prevent heat from flowing through it. Under certain climatic conditions, if the thermal resistance of clothing is low, heat energy will tend to gradually decrease, giving rise to a cool feeling (Chidambaram et al., 2012). The best thermal insulation was recorded in the study for the 100% cotton and the least was for the 100% bamboo while the blends gave the medium values which means that the blends improved the specifications of mechanical properties. Thermal insulation of fabric samples decreases significantly as the loop length increases, agreeing with Gupta et al. who stated that loop length of the knit construction also affects its thermal properties because the loop length determines the porosity or degree of openness in knitted fabrics (Gupta et al., 2014).

Thermal conductivity of all types of knitted fabrics was found to decrease with an increase in the bamboo viscose component in the fabric owing to their lower inherent thermal conductivity value than that of natural cotton (Majumdar, Arora).

Thermal resistance value of plain knitted structures was seen to reduce with increase in the proportion of bamboo viscose fibres due to reduction in fabric thickness. In general, the thermal conductivity and thermal resistance tended to decrease with an increase in loop length. Poor insulation property in bamboo fibers (higher heat conductivity) therefore thermal resistance decreases with the increases of bamboo content in various blends. Also blends containing

bamboo are still good due to the fiber microstructure which is filled with lots of air pockets to entrap large amount of air (Mahish et al., 2012). In this the thermal insulation of the fabrics was generally found to decrease with an increase in the proportion of bamboo fiber in the blend to that of 100% cotton Fig. (7), this agrees with Prakash and Ramakrishna (2013).

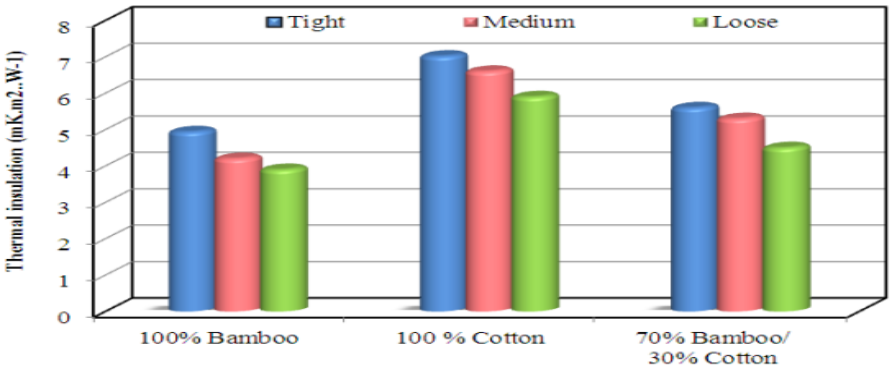

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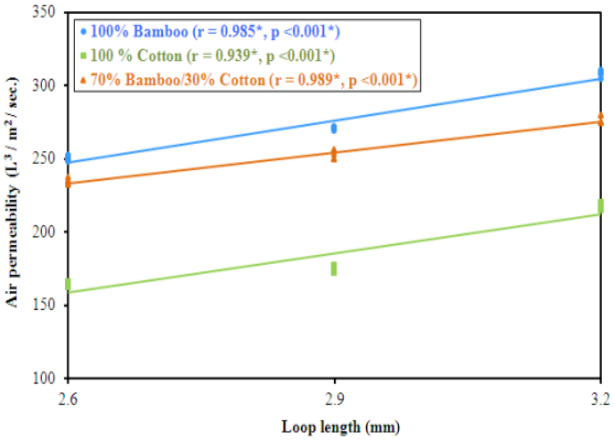
Fig. (7): Comparison between the studied groups according to Thermal insulation

When we investigated the Correlation between the studied groups and the different parameters it has been found that in all fabric types when:

- Loop length increase the air permeability increased, Fig. (8).
- Thickness increase the air permeability decreased, Fig. (9)
- Weight increase the air permeability decreased, Fig. (10)
- Thermal insulation increase the air permeability decreased, Fig. (11)



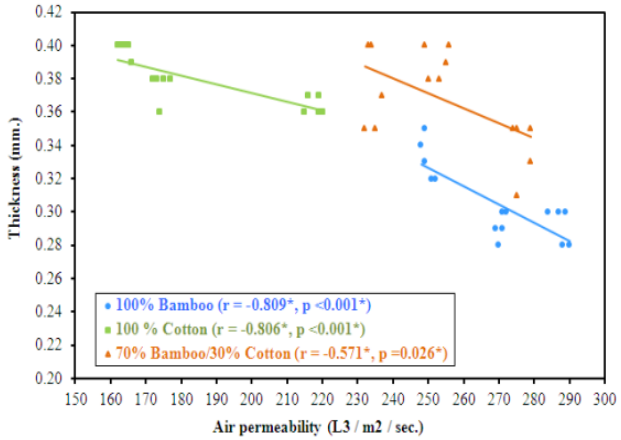


Fig. (8): Correlation between loop length with Air permeability in each group

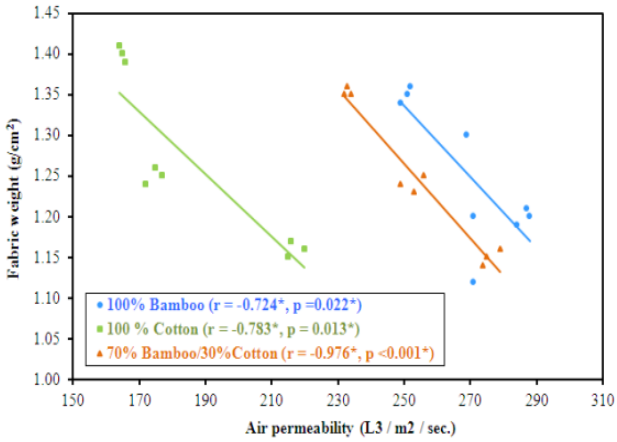


Fig. (9): Correlation between thickness with Air permeability in each group

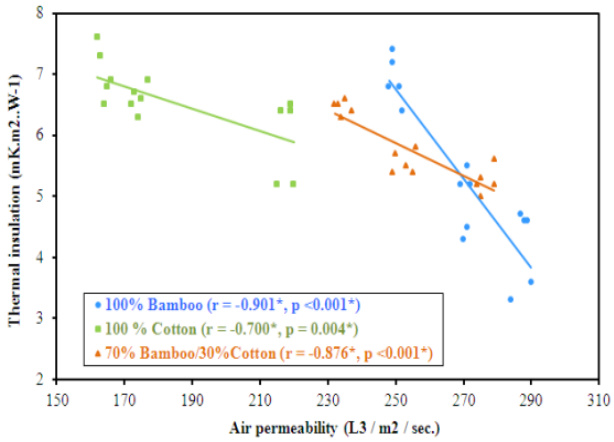


Fig. (10): Correlation between fabric weight with Air permeability in each group

Fig. (11): Correlation between Thermal insulation with Air permeability in each group

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Beads and Moccasins: A Journey to Self Discovery in Home Economics

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Although I knew very early in my career many of the things I never wanted to do as a teacher as a result of my own experiences, I never questioned what I may need to do more of or investigate further. My research into the historical perspectives of home economics has allowed me to affirm many of the beliefs I had previously held, while analyzing whether I am doing the best for myself, my students, and/or a combination of both. I now realize that my philosophy has changed from wanting to help kids be better community members and do well in their personal lives, to wanting to share with them the skills necessary for them to help themselves be included and valued individuals within their own communities. As a result of my research in a graduate studies course, I was challenged to look beyond the traditions of the subject, reevaluate my perspectives of home economics place within schools, and consider how my personal history and knowledge have become intertwined with the content I teach and how I deliver it.

The discovery of much of the history of the subject area was new to me and has reaffirmed much of the belief I have in the value of home economics education. This diverse teaching area has been fraught with controversy and change as societal demands have warranted since its official inception at the Lake Placid Conferences that were held from 1899-1909. The subject is and has been responsive to the needs of individuals and society as a whole from early beginnings marred with tragedy for Adelaide Hoodless, to the present day modern perspectives of researchers like Eleanor Vaines, Linda Peterat, Sue McGregor, Mary Leah deZwart, and Mary Gale Smith, amongst others. Many home economics educators, past and present, have undertaken the tasks of researching and advocating for the subject to remain current and relevant within a society that is ever changing.

Recently, while my child was watching television, I heard a sportscaster state that he may not have had the best circumstances in life but he believed that life is about 100%. Ten percent is about the things and events that happen to us and the other 90 is about what we choose to do about those circumstances. I was reading an article for a course I was taking when I heard this comment. I connected the relevance of that claim to home economics and how it often results in

transference to the teachings in which we share with our students. All one must do is reflect on the devastating loss Adelaide Hoodless suffered and the motivation it gave her to work towards good sanitation and health practices. I can attest to this in my personal life as well. I am confident I would not be where I am today, personally or professionally had I remained in the midst of my circumstances and not done anything about them.

We are given a unique opportunity every day to facilitate dynamic interrelationships of subject matter amongst our students as one of the only subject areas that takes into account the perspectives of the family and their everyday life as well as the teaching of the whole child. Simpson claimed (1973) "the purpose of home economics is to study human beings, their families and homes and to attempt to help each person to satisfy his or her physical, social, aesthetic, and spiritual needs" (p. 173). That statement may have been made over 40 years ago but the relevance remains the same today. We are often able to illustrate this for our students in a way that a textbook will never emulate through our classrooms and practical applications within the lab(s).

Investigating the history of home economics has made a huge impact on my classroom teachings and the ways in which I teach the subject. I have recently attended some professional development training regarding Treaty Catalyst teachings within the classroom, which is now required content within all subjects in the province of Saskatchewan. The inclusion of this content seems to me to be a natural fit in many area of the food studies curriculum and I had already been exploring treaty connections with my students in this area for a few years. However, I had resisted dwelling too much on what I thought/assumed was stereotypical content like 'beading and moccasins' previous to this training when teaching about the treaties and First Nations content within my clothing and textiles classes.

The school that I teach at hosts an annual powwow and many students could not participate without school assistance. In classroom applications we had often focused on the construction of regalia worn during these ceremonies and celebrations and their significance within First Nations culture. Although I was including content in ways in which I had been 'trained' as an educator I soon came to recognize that this training had ill prepared me for the complexities and interconnectedness of the teachings in which I had just discovered. I challenged

my own ideals and put it out to my students, over 50% of whom are of First Nations descent, as a result of the research I was conducting in this course and the additional teachings I had acquired.

The question I proposed to the students was: how would they like to represent the treaty teachings within our classroom learning? Similar to deZwart (2005) in White Sauce and Chinese Chews, I confronted my post-colonialist perspective and challenged my own ideals and misperceptions of stereotypes and metaphors. Much to my surprise, the students overwhelmingly wanted to learn about beading and ultimately had a wealth of knowledge to share with me as well. By tackling my own misperceptions, I was challenged by my student's personal learning needs and desires at the same time that I was interpreting the history of home economics and the needs and desires of an ever changing dynamic of students within the past 100 plus years.

While beading with the students, we began to work with a traditional knowledge keeper in the classroom who shared the teachings of First Nations peoples' perspectives of the treaties. Through open and often unfiltered discussion I came to understand that many of my students are still surviving the effects of residential schools, to an extent I had previously not fully understood. Many of their grandparents, parents, and even a few siblings had been forced to attend, and as a result many of them were never taught the skills they needed for everyday life and ultimately the lack of skills became intergenerational. However, beading was one skill many of them were allowed to do during their time at the residential schools and this was how my students felt they were able to connect with their family members. Beading was often a way for the churches that ran the schools to make a profit (personal conversation Kylie Tootoosis, April 2014.; Sasha Roberts, December 2016). I quickly realized that many of the skills students learn in my classroom and labs are not just relevant for them, but also their families. It can often have much deeper meaning for them than we as teachers fully understand. Due to the practical nature of our subject, home economics educators can often be the ones that enable students to share their acquired skills with family that may not have previous knowledge and/or experience in the subject. I soon came to see many of my students as teachers themselves as they too had taught me a wealth of information I would never have uncovered in a textbook.

Through the one hundred plus years of home economics education there has been substantial change in the dynamic of the students we teach our subject to. Initially the subject

was ‘an education for girls’ with the eventual hope that the skills would be beneficial in her future role as a housewife (Mathews, 1987/2014). However, these ideals have been challenged through the changing dynamic of Canadian society and the subject has had to become relevant to all students in their everyday life. While discussing my pursuits in the Master’s program with a colleague, she informed me that her group of students in the Life Skills Work Study (LSWS) program were only allotted 2-4 hours of kitchen lab time per month, depending upon availability. Being a teacher of home economics who was currently investigating the history and perspectives of the subject, I was absolutely appalled that students with challenges were being neglected in this area. As a mother of a child with a cognitive disability, it horrified me to think that a program that offers life skills in its name was allotted an abysmal 2-4 hours per month to focus on a very necessary ‘survival’ life skill.

Jointly, we approached our administration regarding the lack of accessibility and were informed that was all the time available and budgets and space allocations were the reasons given. However, I couldn’t let it go and invited her and the students into my food studies and commercial cooking labs in order to provide them with additional opportunities to gain experiences within the kitchen. We collaborated together when a new semester was to begin and put forward an informed proposal with many sources and research cited to allow us to merge our students in an integrated classroom with us co-teaching together. We were denied and again budgets were cited.

We had not asked for money, it was permission we had been seeking. Citing a former administrator who one day told me to, ‘do what I thought was best for the students and if need be, beg for forgiveness later’, we did what we thought was best and merged our classes together for senior level foods class. Collectively, we have seen tremendous growth in compassion and the understanding of differences amongst all students, and the acquired skills gained have been evidenced by many others. About a month after we began we were informed by our administrator that a parent of one of the LSWS students had shared with him how impressed she was that her son had built up so much confidence in the integrated classroom within the Food Studies class, and that he was now cooking macaroni at home, which for this young man was huge… at least we didn’t have to beg for forgiveness.

Prior to applying to this cohort program, I had begun to feel disillusioned with the politics of education, more specifically the misunderstanding of most administrators to the significance of well maintained home economics facilities and the subject's relevance to all students. The school I teach in is a designated a trades and skills school and as a result often the skills of daily living are overlooked for apprenticeship hours and job skills, but for our students it is so often the struggles of everyday life that need to be overcome first. Linda Peterat (1995) states that, "the real struggle in schooling is to have education for daily living valued equally with an education for employment" (p. 185). Unfortunately, often times it is felt that there is more value from the job skills students would learn from courses like, aircraft maintenance, mechanics, welding, electronics, or entrepreneurship, amongst others, than the offerings of a home economics based education for everyday living.

As a home economics educator, I often feel the challenges of keeping my subject matter relevant and understood. So many of my colleagues see the area as plain and simple, 'cooking and sewing', but do not understand the complexities of the subject matter that we encompass. By understanding my own personal history and its role within my journey into the area of home economics I feel more confident in taking an informed position while promoting and discussing the importance and value of education in the subject, for the students that I teach. The knowledge I have gained by understanding the history of home economics education in Canada has enabled me to affirm my own values, perceptions and belief in the education of the whole child through the acquisition of skills for everyday living. By acknowledging this new information I have begun to embark on a self reflective journey that has assisted me in confronting some of my own misconceived perceptions and stereotypes, while proving the relevance for home economics education for all students.

The relevance of home economics education and skills can be applied throughout an individual's lifetime and the complexities of the relationships between this knowledge and our personal experiences can be learned both formally and informally. As Krall (1988) claims, "our being may be dominated by what we have learned" (p. 472). As individuals mature and age, knowledge and wisdom is learned as a result of the experiences we have. Ultimately the role these experiences play in our everyday life affects our ideals, beliefs, values, and perceptions

within ourselves and the communities in which we live and work. I believe that by understanding our subject's rich history and the interconnection of our personal histories and experiences, we as educators of home economics will begin and continue a lifelong journey in acquiring, sharing, and improving our own skills and knowledge base that is essential and necessary for everyday life and living within our schools and communities, which ultimately affects the students we teach.

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The State of FASD in Canada: A Literature Review

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Introduction

Key Terms: Fetal Alcohol Syndrome (FAS), Fetal Alcohol Spectrum Disorder (FASD), Partial FAS (p-FAS), Alcohol Related Neurodevelopmental Disorder (ARND), Alcohol use Related Birth Defects (ARBD)

The purpose of this literature review is to assess the information available on the state of Fetal Alcohol Spectrum Disorder (FASD) in Canada. Although not all of the literature reviewed was Canadian sourced, the relevance to FASD in Canada was felt necessary to be included to illustrate the gaps in Canadian content. The field of FASD research has, for the most part, been from a medical and judicial perspective regarding interventions, diagnosis and treatment, and until recently has not included the prevention or educational aspects. During the search, it became evident that Canada and the United States have done the most extensive research in this subject area. For this review the state of FASD in Canada encompassed, prevalence, diagnosis, representation within systems, quality of life for affected individuals, economic impact, classroom implications and, prevention and awareness programs and education.

The lifestyle based disease known as Fetal Alcohol Syndrome was first identified in 1973 by medical researchers in the United States (Jones, 2011). Researchers noted that children born to chronic alcoholic mothers displayed physical malformations and often had limited intellectual ability often accompanied by learning limitations and disabilities. Clarren and Salmon (2010), identify that throughout the 40 years of medical research since its identification, this broad medical diagnosis has been reclassified as a spectrum disorder to encompass the varying degrees of alcohol effect(s) on the child and the resulting life-long disability as a consequence of the in-utero alcohol exposure. This spectrum includes the medical diagnoses of 1)FAS- physical defects, cognitive impairment, sometimes intellectual deficits; 2) p-FAS- cognitive impairment, limited physical characteristics; 3) ARND- no physical features, cognitive impairment, sometimes intellectual deficits; and 4) ARBD- severe physical and cognitive impairments, often extremely cognitively challenged. The aforementioned diagnoses do not account for the

secondary disabilities that often accompany a diagnosis under the FASD spectrum. These are often called co-occurring diagnosis.

During this time researchers also began to document an increase of FASD diagnosis in children born to non-alcoholic mothers who did not fit the 'stereotypical' mold of an alcoholic (Jones, 2011). My relationship with FASD is personal. My journey began with the birth of my eldest daughter 21 years ago. As a young woman who worked in a bar accompanied with frequent episodes of extended binge drinking, I was unaware for almost 11 weeks that I had become pregnant. Despite reassurances from doctors that cessation of drinking would ensure a positive outcome the irreversible damage had already been done and my journey with FASD had only just begun. The effect that this disability has had on mine and my daughter's life has been profound to say the least and has impacted every aspect of our lives. Her diagnosis of ARND is accompanied with four co-occurring diagnosis, including depression, generalized anxiety disorder, Oppositional Defiant Disorder, and Attention Deficit Disorder. Our journey together has become a passion for me for raising FASD awareness and prevention education within Saskatchewan and beyond.

Method

The aim of this literature review is 1) to review currently available information surrounding prevalence of FASD in Canada (Appendices 1); 2) describe the terms related to FASD; 3) to identify the gap in providing education and awareness regarding FASD to pre-pubescent children; 4) explore the data available regarding FASD rates; and 5) review the research conducted on consumption of alcohol by pregnant women or women of child bearing age.

This review was a systematic search for original literature using a variety of databases including, Epscohost, Eric, Google Scholar, UBC Library database, Wiley Online Library, Health and Quality of Life Outcomes, Informahealthcare, and the Australian Home Economics Institute. The initial search resulted in 1,089 results using the key words, 'state of FASD in Canada'. The application of 'full content online' filter narrowed the results further to 301 titles, in English. After an initial title scan this list was further eliminated to 64, and then reduced again to 24 after review of article abstracts and application of concept map criteria from Appendices 1.,

Nine further articles were eliminated for lack of Canadian relevance and/or content due to the end goal in mind of Canadian content and relevance. This relevance was determined by the applicability to Canadian culture, socioeconomic factors, and general demographics. One Australian report and two American reports were included, as well as an article that compared data from six countries. All other content was Canadian sourced.

The 15 articles included in this review were of a variety of formats including a book, journal articles, an opinion piece and professional guidelines for diagnosis. Methodologies utilized within the research pieces included four literature reviews, one expert review, a matched cohort design study, systematic review of biomedical databases. An innovative qualitative research, participatory action research project utilizing Photovoice (Badry & Felske, 2013) engaged readers with thought provoking pictorials. A comprehensive review of community based programs, a research ethics board approved cross-sectional study of program participants, as well as a retrospective analysis of data and a generalized six country review utilizing guided questions were also utilized as research methods in the literature. A summary of Canadian diagnostic approaches is also included as reference for diagnostic criteria, while the Australian report included is an Initial Assessment Report or position paper.

Quality of the Evidence

In both articles by Popova et al. (2011) the authors confront the validity of studies and interpretations of their data as the hard numbers are not verified. Most data represented within the scientific studies are estimates, at best. Many of the articles utilize a mixed methods research model and obtained qualitative data directly from research participants while quantifying with correlational statistics of the variables. Stade et al.'s (2006) use of previously built relationships within support networks developed the framework for them to be able to ascertain reliable results in the health utility index utilized in their study. The health utility index of this study provides for credibility and transferability due to the global usage of this research tool.

A generalized linear model was used by Brownell et al. (2013) to match the data from their match cohort design research project to create triangulation and confirmability. Not all of the studies provided their methodological approach, however Vezina and Godin (2010) endorse the use of theories based studies to assist in the orientation of intervention developments. This

allows for a personalized approach to research participants and utilized structured questions that were provided in the study and a seven point Likert scale for attitude ratings for the questions asked. The overall quality of the evidence presented in the literature and data gathered was good, with the exception of one report which was more of an expert's opinion rather than research to speak of.

What We Know?

Prevalence and Data

There are a variety of factors that influence the rate of FASD in the Western world. All of the data contained in the reviews corresponded with an estimated rate of 9 in 1000 births in Canada has been affected by alcohol consumption during pregnancy. Although this is an average estimate, the rates in some communities were as high as 34 in 1000 (Rasmussen et al., 2012). This initial estimate of 1% of the general population is considered to be low as verification of alcohol ingestion is difficult to obtain without maternal confirmation. The investigation of factors affecting maternal consumption of alcohol by Drabble et al. (2011) across six countries discovers that the variables are numerous and differ greatly amongst the countries studied (China, Canada, United Kingdom, United States, Uganda, and Uruguay).

Amongst these variables are socioeconomic factors, psychosocial determinants of health, mental health and physical health issues, addictions, age of mother, societal perceptions of alcohol consumption, stigmatization and stereotyping of women who consume alcohol during pregnancy, domestic violence, and history of sexual abuse (Badry & Felske, 2013; Deshpande, 2005; Drabble et al., 2011; Rasmussen et al., 2012). The rate of FASD in North America makes it the most common cause for non-genetic neurodevelopmental disability in the North America (Clarren & Salmon, 2010, Jones, 2011; Ospina & Dennett, 2013). Although FASD is said to be 100% preventable with a single cause, the evidence in the literature provides perspectives that illustrate the complex scenarios that accompany the confirmation of maternal consumption of alcohol. Badry and Felske's (2013) research in a northern community allowed for them to understand the interconnectedness and complexities of many of these factors and the interrelationship between alcohol and pregnancy amongst women of child-bearing age. One must also consider rates of unplanned pregnancy when investigating maternal consumption of alcohol

as well (Clarren & Salmon, 2010). At present, an estimated 46-54% of pregnancies in Canada are unplanned and many are not discovered until 6 weeks gestation.

The literature also indicates that as a result of the prenatal exposure to alcohol individuals with an FASD diagnosis have their own set of distinct vulnerabilities that are often accompanied with secondary disabilities (co-occurring diagnosis) such as mental health and psychiatric issues, anxiety, Attention Deficit Hyperactivity Disorder, physical and speech limitations, and behavioral and emotional issues, amongst others (Stade et al., 2006). The Canadian Medical Association provides Guidelines for Diagnosis (Chudley et al., 2005) to physicians and suggests a multi-faceted team approach for diagnosis, however this is not standardized practice across the nation. These guidelines cannot always be met for diagnosis due to lack of specialists and the geographic range of Canada and, as a result, many individuals go undiagnosed.

Costs Associated

Research indicates that 5% of the student population in a special education classroom is confirmed alcohol affected (Ospina & Dennett, 2013). This has direct implications on a classroom teacher as students with a diagnosis on the FASD spectrum learn very differently than the average child. Myths must be confronted and instructional adaptations are necessary (Koren, 2011). In Popova et al.'s (2011) review of incarceration rates in Canada, she concludes that 19% of incarcerated individuals are alcohol affected and the rate is higher amongst Aboriginal offenders. The evidence that individuals affected with an FASD utilize services such as health, special supports in education, and social services at a higher rate of use than the general population is verification that the economic impact on society is immense (Brownell et al., 2013; Ospina & Dennett, 2013; Popova et al., 2011). All of these factors play a role in inflating the costs associated with an individual with a FASD diagnosis in Canadian society with estimates at about 5 billion dollars per year to education, health and social services (Brownell et al., 2013).

What Do We Need to Know?

Much is known about FASD and how to prevent it however the solutions are not simple and, as with any health crisis, investigation and further research needs to be done. As Clarren and Salmon (2010) contend, society must take a comprehensive approach to its prevention by starting at the 'grassroots'. Society itself plays an integral role in the perceptions of alcohol and its

acceptance as a cultural norm within Canada. Social change has been identified as a key determinant by many of the authors as one of the most influencing aspects of lowering the rates of FASD in Canada. However, in order to promote social change, attitudes and external influencing factors must also change to promote the education of FASD awareness. Alcohol advertising is prevalent in Canadian society and children are subjected to it at very young ages with the consequences undetermined (Clarren & Salmon, 2010; Deshpande et al., 2005). Chubb's opinion piece (2009) looks at the need for labeling of alcoholic beverages with large pregnancy advisories. One must only look at health campaigns to promote the quitting of smoking and the placement of warnings and pictures on packaging to see that when it is in black and white in front of you, it is difficult to avoid addressing the issue. We must address the state of FASD in Canada and its prevention. This begins with awareness and education.

How Do We Get There?

Prevention and Awareness Education

Although there have been localized studies regarding prevention and awareness, campaigns have been mostly jurisdictional, and generally based on governmental funding (Rasmussen et al., 2012). Confronting misconceptions and stereotypes about mothers of individuals and individuals living with FASD can have a dramatic impact on perceptions within society and the community in general as portrayed in Badry and Felske's (2013) research based Photovoice presentation. Reminiscent of the 1980s when massive AIDS awareness campaigns began, a similar large scale movement is necessary to have the same effect on FASD awareness and prevention. By educating students at a young age that there are risks associated with alcohol and pregnancy prior to them becoming child bearing age, we will empower them to make better educated choices for themselves. This education should not be determined based on a set of regulated 'at risk' individuals, but instead should be provided as part of a mandatory health related education program. Discussing at risk behaviors is part of the health and wellness education curriculum in many provinces and the incorporation of FASD education and awareness should coincide well with adequate resources made available to educators.

Conclusion

Although we clearly know the cause of FASD, the prevention and awareness education of this lifelong disability is lacking. After completion of this literature review, it is my belief that the gap in research regarding awareness education's compulsory inclusion within academic settings sets the scene for a disproportionate amount of pregnancies susceptible to the effects of alcohol on a developing fetus. Ultimately the healthy gestation of a child is a mother's responsibility; however, society plays an important role in educating prepubescent children, and especially girls, about the risks associated with alcohol consumption at any point during pregnancy. As home economics educators, health and wellness education is often a part of our curricular teachings and we have the ability to be proactive in the lessons in which teach our students. It is my belief that if we educate students before they begin to have sex, the likelihood is higher that many future cases of FASD can be prevented and ultimately the costs to systems, society and the families affected can be minimized, if not dramatically reduced.

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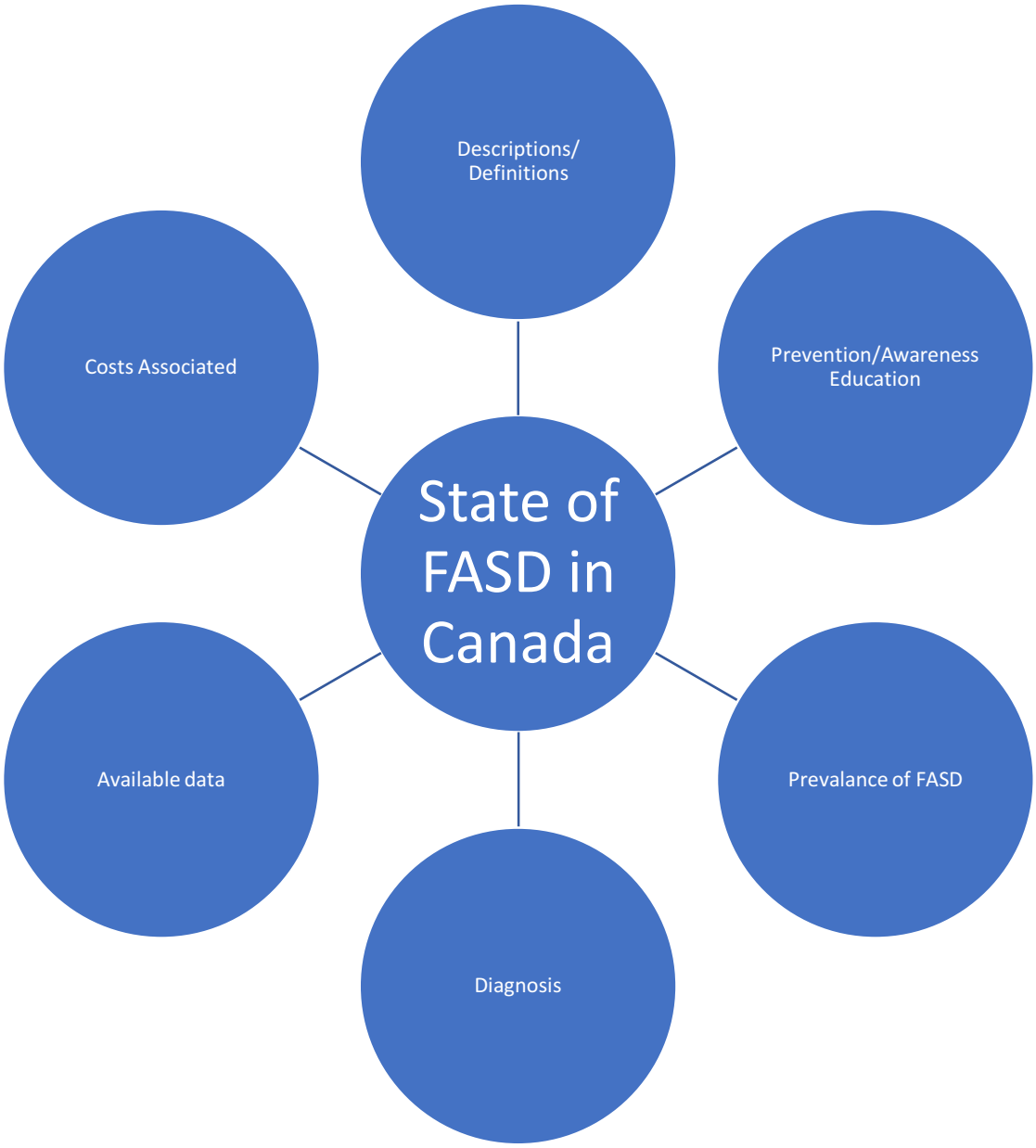
Appendices 1



The Making of Ignorance: Undermining the Value of Home Economics

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Abstract

Decisions that are made about curriculum are by their very nature contentious given that they represent a suite of decisions that enshrine particular values and purposes of education. The most common approach used in curriculum development in Western countries has been to privilege certain knowledge on the basis of value in developing human capital that meets nation-state economic purposes and that is measured through standardised testing and benchmarking.

The reduction of curriculum content into learning or subject areas on the basis of common discipline content presents a view of information and learning to students that are disembodied and unlikely to be connected with diverse experiential contexts. Interdisciplinary approaches such as home economics do not readily conform to this reductionist structure. This dilemma has resulted in the discrete and wholesale writing out of Home Economics from the official curriculum.

This paper will draw on understandings about ignorance. In particular the conceptualisation that ignorance is positioned against the removal or reduction of home economics education in curriculum documents as a selective choice, a strategic ploy and as resistance or caution.

It is intended that this theorising of ignorance will provide a way to recognise and communicate how the writing out of home economics education in curriculum documents is possible. In doing so this paper also offers possibilities to redress the prescribed ignorance and situate current initiatives in home economics as both viable and important ways of knowing.

Introduction

Knowledge is seen as an essential part of contemporary life. It is essential for an empowered citizenry; to participate in a knowledge economy (Stowell, 2007) and to cope with an increase in the volume and complexity of information (Ungar, 2003) leads to the description of an information explosion and an increasingly digitised life world. Knowledge is not a single entity of knowing; rather it is context dependent. Habermas (1978) defines worthwhile

knowledge through three cognitive interests: 1) prediction and control; 2) understanding and interpretation; and 3) emancipation and freedom; and De Jong and Ferguson-Hessler (1996) offer up qualities of knowledge that include its level, modality and generality.

This paper is however focused on the absence of knowledge or ignorance and what this might look like within home economics education. The development of knowledge within home economics education is linked to understanding the human condition and how it can be improved (McGregor, Pendergast, Seniuk, Eghan, & Engberg, 2008). The contrary position suggests that to remain ignorant of home economics knowledge leaves us bereft of the ability to respond to perennial, practical problems (Brown & Paolucci, 1979) including shelter, clothing, food and family relations. Considerations of ignorance about home economics is explored through ways we can think about ignorance; all too common perceptions about home economics and how these contribute to ignorance about the practical, perennial problems faced by families. and finally some thoughts on how to position ourselves as professionals with valuable and viable knowledge to share.

Knowledge versus Ignorance

The position taken within this paper is that while home economics is still evident in schools and indeed is thriving in some cases, the wider perception is that Home Economics education is a threatened species, if not extinct. This is based on two provocations. Firstly that as a field of learning in and of itself home economics has been eradicated from higher education. For example, since the 1990s in Canada and other countries such as Australia, there has been a practice of closing departments, schools or colleges within higher education that offered undergraduate programs in home economics. And secondly as an area of study in schools, home economics is becoming increasingly invisible within official curriculum documentation. For instance, this is evident in the BC curriculum (BC Ministry of Education, 2017a) where content of home economics has been dispersed between two learning areas–physical and health education and applied design, skills and technologies. Nutrition has been separated from food studies and is to be taught by teachers of physical education; and food, family and textile studies are being required to ‘fit in’ with a particular understanding about design that is tied up with linear approaches to R&D, product marketing and consumerist consumption.

It is these circumstances that are contributing to what I am calling an ignorance about home economics and what it offers for a life well lived. Knowledge and ignorance are binary concepts and it has been argued (Proctor, 2008) that while there is and has been considerable focus on creating, developing and understanding knowledge there is remarkably little thought that has been given to thinking about ignorance. In reality we are ignorant of many things; however being ignorant about food, textiles, family and shelter doesn't seem to provide a sound basis for living well (Smith, 2015).

Education is offered as a way to prepare young people for the world in which they will live and contribute to as adults. Curriculum documents represent a distillation of what knowledge has the most value (Apple, 2003) and therefore academic subjects are given higher status over vocational or practical subjects. And it is worth noting here how technology education has become equated with ICT rather than what has been technology through human history, that is bone, wood, textile, stone, metal and food. What gets incorporated into curriculum documents is the result of political struggles, settlements and compromises to become 'whose knowledge has most worth?' (Apple, 2006). Here the particular knowledge that is represented reflects a specific power position essentially 'knowledge is power' writ large. This begs consideration of who gains and what is lost (Stowell, 2007). However, another way of thinking about this is to ask 'what can we be ignorant about?' and still live well.

In current neoliberal times where the value of things are judged only as monetary, "the depletion and degradation of the environment, and social change means that more people are having to make do with less" (Renwick, 2016, p.2). The skills and understandings gained through home economics education speak to the very reasons why home economics is needed in contemporary times. Dewey's theorising about pedagogy focused on "knowledge of consequence for a shared social life" (Greene, 2003, p.105) and aligns with the pragmatic, integrative approach (Smith, 2015) offered by home economics curriculum. Where students become "active participants in education grounded in community-based public problem-solving, they learn to become knowledge producers instead of knowledge consumers" (Saltmarsh, 2007, p.67). Thus knowing can be understood as 'a way of doing'. *Not just about the world 'out there' but also the relationship between action and consequences* (Biesta, 2007*) in the everyday.*

Ways to Think about Ignorance

As there are many ways to think about knowledge (De Jong & Ferguson-Hessler, 1996) there are also different ways to think about ignorance. Ignorance isn't necessarily in and of itself a negative state such as when one is innocent as a baby or small child. It can also be a rejuvenating force or a resource for 'liberatory moments' that motivates us to want to know more or differently (Proctor, 2004). Other forms of ignorance also exist and it is these that this paper will argue, have been used to work against home economics.

Ignorance as a Selective Choice

One form of ignorance is seen in selective choices, such as when decisions are made to exclude home economics, at least in name, from centrally developed curriculum. Current approaches to Western curriculum are predominately focused "on markets and being gainfully employed as a compliant worker, as a complicit consumer of limited and reducing resources" (Renwick 2016, p.1). This perspective inevitability sees home economics 'out of favour' with no apparent vocational value (Renwick, 2015, 2016). The role of education has undergone a shift from developing informed citizenry to consumers who work. And while the link between schools and employment has always existed, the change has been from having individuals being work ready by the end of school to having specific jobs skills. This change is reflected in the curriculum where the focus is on developing literacy and numeracy together with the competencies needed for after school (BC Ministry of Education, 2017b) and in workplaces. Tied in with these views of schooling is also a specific way of living where economic practices have led to greater expectations of 'user pay' practices. There is shrinking of government institutions and support because Neoliberal policies assume "that unpaid domestic labour is infinitely expandable, and that household caretakers are available to take up the slack in meeting the needs of their family members" (Young 2002, pp. 423–424). And it is this point that leads to a second form of ignorance – that of ignorance as a strategic ploy.

Ignorance as a Strategic Ploy

With a Neoliberal focus on small governments, globalisation and free markets, it raises the notion that we don't need nor want home economics with its focus on family. Here there is a clear division between public and private spaces (Thompson, 1988). However, separating the

two spaces seems to be nonsensical given that we traverse between the two on a daily basis, and that the public space would not be possible without the private.

The public and private are presented as separate spheres of activity, and contribute to a gendered binary of feminine and masculine spaces (Thompson, 1988). There is considerable debate about the second shift and who gets to do the work (Renwick, 2016). Gibson, a writer for *Time Magazine*, has conceded a 20-minute difference in the amount of work undertaken in the home by men and women. She argues that we need to be fairer to men because they do longer hours in the workplace but she fails to acknowledge that men also benefit from what women do by undertaking the majority of the second shift.

The home as private space is assumed to be of limited interest from a wider social perspective. At best families and homes are units of consumption for goods and services and therefore are of relevance for those working in the public sphere for market purposes. Radical feminists have viewed home economics education poorly, accusing it of "being the enemy" (Thompson, 1988) keeping women subjugated. However, in their political project to get women into the workforce and earning equal pay they have failed to engage with how the private space of family and home supports the public, and why it is that women, especially those in heterosexual relationships (Perlesz, Power, Brown, McNair, Schofield, Pitts, Barrett, & Bickerdike, 2010) carry more than their fair share of the home work.

Virtuous Ignorance

A third way to think about ignorance is that it is virtuous. That there are things we do not want to know so we resist knowing or use moral caution. There are people who willing remain ignorant of how their food and clothing are produced. Supply chains are complex and so we do not know how the uses of resources are redirected to cash crops and business rather than for daily living. It is assumed that legislation will exist and always work in the interests of those who are least able to look after themselves. Therefore we cannot image how the food we eat or the clothes we wear could possibly be associated with toxic chemicals or child and slave labour. We are increasingly outsourcing everyday activities. We utilise 'convenience' rather than create our own. We make daily decisions to buy fast foods, pre-packaged foods, and purchase expendable fashion items. This creates an interesting conundrum - if people are cooking less,

then why do we need gourmet kitchens? We are de-skilled in that we cannot make those things we need. We have no control over how things are produced that in turn causes an impact on the environment and vulnerable people.

Ignorance about Home Economics – Popular Perceptions

Articulating a case for home economics is a fraught process when the fashion *de rigueur* is to denounce the field. Statements about its contemporary value are positioned against how the section of the field have been renamed and include assertions about its being just about doing housework. In order to change perceptions held about home economics education requires some rethinking about gender, health, the environment and the importance of everyday practices. Challenging the idea that home economics education is a way to construct gender seems to be more about sexist attitudes and power dynamics rather than gender *per se*. For example, Australian research (Perlesz et al., 2010) determined that same-sex couples divided household labour more equally than heterosexual parents. For many same-sex couples, major decisions around work/family balance are negotiated on the basis of the couple's preferences and circumstance. This is different to heterosexual couples where the division of household labour is often based on the assumption that the mother will almost always be the primary child carer and homemaker.

Home economics is often seen as an adjunct to dietitians and the health sector particularly around food and nutrition. While this is not necessarily a problem we do need to be cognizant of how our profession can be commandeered into work that is not fully our own. This is evident in the call to participate in the obesity epidemic. Concern for our students and understanding about the relationship between food and wellbeing means that we can be drawn in uncritically. The idea of an obesity epidemic in our youth at present seems to be widely accepted. Yet the figures in Canada do not stack up. Statistics Canada (2016) report that 67% of 12-17 year olds are in the normal weight range and only 10% are deemed as being obese. Further to this discussion, these numbers have not changed significantly over the past 10 – 15 years.

Urban geographers talk about how everyday decisions and actions impacthow urban spaces are used but do not define them. However it doesn't take much to see these everyday decisions as related to food, shelter, clothing, transportation, as well as interpersonal connections

between people. Thinking about home economics through an environmental lens helps us to determine whether we make a small or large impact on the world.

Agri-businesses as they currently exist have changed the way in which food is produced. Films such as *Food, Inc*. (Kenner, Kenner, & Pearlstein 2008), have documented how a small number of corporations control the American food supply and make use of 'factory' farms and industrial plants that process animals into meat. However by reframing the task by changing back to time proven, more humane farming practices and asking farmers to produce enough food for 200 local families, then the scale of the task become more humane, realistic and therefore achievable. Add in community gardens with egg laying chickens, and we start to see a very different level of food literacy.

Keeping Home Economics Visible

Many factors at play that create the conditions where ignorance about home economics continues and is growing in specific areas. Does it really matter what type of ignorance is at play? Whether it is a selective choice, a strategic ploy or virtuous doesn't seem to make much difference when individuals, families and communities are deskilled because of ignorance of ways to manage practical perennial problems.

Just because the profession believes in its value does not necessarily make this belief evident to others. It seems it is time to draw on the systems of action that McGregor asserts is a unique part of how we work as a profession since "(e)ach of these *actions*, respectively technical, interpretive and critical, refers to a way to think about something before acting (2010, p.29). The systems of action align with Habermas's (1978) categorisation of worthwhile knowledge and thus providing one way to frame how the profession can respond to ignorance about home economics.

Systems of Action		Actions
Technical	cope with change by learning new skills and techniques;	Social media to promote home economics • Twitter is one way to track trends using hashtags such as #homeeconomics .
Interpretative	by gaining deeper understandings and insights	Responding to articles that relate to our area of expertise.

	into values, attitudes and meanings, leading to stronger familial relationships; and/or	• Use of social media can be useful here but so too can writing letters to the editor • Initiatives that build explicit support for the work we do – our students and their families as well as colleagues.
Critical	engage in social action and change power relationships to improve the human condition for everyone	Resisting other's attempts to rename us and make us invisible or to claim our work/expertise as their own. Responding to policy documents or local initiatives that impact on our work in negative ways.

Table 1 based on McGregor, 2010.

McGregor claims that engaging in reflection about these actions opens up ways to "determine which combination of coping, adapting and affecting change is appropriate" (2010, p.29) in both current and future circumstances. If these are reasonable strategies for the people we work with, then surely they should offer some potential for the profession. Keeping home economics visible is an important aspect to our work. We have every right to enter into 'conversations' about food, family, textiles and shelter. Home Economics continues to have relevance in contemporary times.

Conclusion

We need to claim our work and promote our expertise. We need to keep reminding others that we are here and that our knowledge is still relevant. Reductionist approaches to curriculum development makes it difficult to engage in a profession that works in interdisciplinary and holistic ways. Home economics simply do not fit into curriculum development models that utilise narrowly defined disciplines. There is an assumption that if students acquire component pieces of leaning then this will add to a whole education. However knowledge is more than the individual pieces in sum, and students need to be given opportunity to explore what their learning means beyond the classroom. That is, for this learning to become worthwhile knowledge it needs to make sense and have value within context of their families and community.

The theorizing of ignorance offered here provides some insight into how home economics is increasingly devalued and as a consequence how it becomes written out of curriculum documents. The irony of course is that there are others who are interested in aspects of our field, and will do our work in their name. They see the value of resolving perennial practical problems and everyday practices; however their focus is not a home economics one.

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How Language Writes Us: A Retrospective

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One of the most difficult courses I took in my masters program was one that was a way out of my comfort zone. One, because it was philosophy and I had successfully avoided philosophy all through my bachelor programs and two, because the only other students in the class who were taking it for credit were PhD. students and I was just starting my masters however, the most important "take away" from the course, was the importance of language.

When I look back over what I have written in the almost three decades of this symposium, I notice that the common element in many of the papers is conceptual clarity or paying attention to the words and language we use to describe our professional practice. I link that back to the philosophy course which was on the analysis of educational concepts. In this paper I presented four "sketches"; one might consider them "surprises" (Schon, 1987), or "epiphanies", or "critical incidents" (Hole & McEntee, 1999; Newmann, 1987, 1990, 1991; Tripp, 1993). They are significant events that signal an important change, or a shift, in one's thinking (Stringer, 1996). Often they are small "ah-ha" moments that enable people to see themselves, others, or phenomena, with greater clarity or in a completely different way. They help identify the things that we take for granted, that are hegemonic and often unquestioned. I match each of these "sketches" with my writing about home economics and home economics. Then I give several additional examples of the long shadow cast by the words we use and how language can "write us" in the sense that choosing to use certain words without an explanation can lead to inaccurate perceptions of the work we do.

Sketch 1 – The first symposium 1991 – "Surely not in home economics"

In the same year as first symposium, I attended a pre-conference to a Canadian Home Economics Conference, on international development. For a whole day we had presentations on global food security, the corporatization of the food supply, the plight of Canadian farmers, the rise of food banks in Canada, poverty, and so on. At the end there was a discussion on what home economics should do. I said "these topics should be part of home economics curriculum," another home economist said "Surely, not in home economics!" I couldn't believe my ears.

This comment confirmed for me that unless we learned to think differently home economics curriculum would forever be trapped in the traditional technical mode of knowledge and skill transmission, "stitching and stirring", with little connection to the real problems of individuals and families. How were we to be relevant if we are not prepared to address the real issues that were impacting the daily life of families? At that time there was a big push for integrating global perspectives in education and I believed that it was a way to transform home economics. I began to explore and disseminate information on integrating a global perspective in home economics education (e.g., Smith, 1992, 1993, 1995). My paper at the first symposium was titled *Global Education: A Home Economics Education Imperative* (Smith, 1991a). About the same time, I also created a chart or "map" in Vaines' terminology. Vaines (1988) argued that "if transformation means we are going into new territories, many kinds of frameworks, charts, and maps will be necessary for the trip" (p. 30). The chart was titled *The Emphasis Continuum* and was included in various publications (e.g., Smith 1991b; Smith & Peterat, 1992). The chart recommended shifting the emphasis from a traditional view of home economics education to a global/development view of home economics education in thirteen different areas: home economics (defining); home economics professional practice; metaphor for education; aims for education; educated person; underlying values; curriculum; classrooms; knowledge; problems; society; and family. For example:

From		**To**
A Traditional View of Home Economics Education	⟷	**A Global/Development View of Home Economics Education**
• technical	**Home Economics**	• political/moral
• mechanical, controlling the environment	⟷	• ecological, stewardship of the environment
• fragmented, one-dimensional		• integrated, multi dimensional

By using the term continuum, I was implying that these were two ends of home economics professional practice and that it is possible to move along the continuum and gradually transform professional practice.

Sketch 2: 1994 "Strong families take a stand"

Once when I was teaching a Family Management 12 course and I asked my students work in groups to speculate on what makes families strong and to prepare a graphic representation of their discussion. Most groups drew images of a house with a nuclear family standing outside with images of material culture such as puppy dogs, cars, nice clothing and images representing love such as hearts. But one group (out of 6) constructed a poster with the slogan "Strong Families Take a Stand" boldly reaching diagonally from corner to corner. Surrounding the slogan were small collages of the topics they thought families should address. Included were racism, child abuse, childcare, togetherness, drug and alcohol abuse, communication, pollution and environmental problems, and war.

What struck me was how closely my class represented the conflicting views of what home economics ought to do and possibly even in the same proportion. In 1984 Marjorie Brown gave the first American Home Economics commemorative lecture celebrating the organization's 75th anniversary. She criticized her profession for conforming to existing society and for viewing the home in materialist terms thus maintaining the status quo and possibly acting in ways that are contrary to its purpose that is often defined as its mission. Frequently, that mission has been summarized as improving the well being and the quality of family life. In the years since the inception of Home Economics in the 1900s, the improvement in quality of life has become focused more on the material quality of life with an emphasis on homemaking skills and technical knowhow. Brown's critique brought this to the attention of the profession and argued for a more critical thinking approach. Previous to that in 1980, she had written *What is Home Economic Education*. In 1993, Jane Thomas and I examined that document for the attributes of a person educated in home economics. We were both familiar with work in education by philosophers such as Peters (1967) who suggest that all curriculum is driven by an ideal of the educated person. We could not find any literature directly related to a home economic educated person although other subject areas had begun to articulate their ideals, for example, the

"physically educated person" for physical education (Willis, 1992). So we teased out seven major attributes from Brown's work and then, because Brown's work was 14 years old at the time, we suggested extensions based on current literature and created a chart. Here are two examples:

Brown's Ideal		**Extension**
Is one who … has a breadth of perspective vis-à-vis conditions and problems of the family … is able to define perennial practice problems of the family within a social-historical context		…has a global perspective vis-à-vis conditions and problems of the family …is able to define problems of the family including those resulting from biases and inequities such as sexism, racism, classism, homophobia and other forms of structural violence

We presented the chart at Symposium II in Calgary in 1993 (Thomas & Smith, 1993a) and it was subsequently re-published in the CHEA Journal (Thomas & Smith, 1994) and the Irish Home Economics Journal (Thomas & Smith, 1993b). Our argument was that if we were clear about our educational ideals then the conceptual integrity of the field would be strengthened.

Sketch 3 – 2004 – BeST

Throughout my career in education (50 years, this year) I have had the privilege to work with "student teachers" or "teacher candidates" as they are now known at UBC. First as a school advisor, then as a teacher educator seconded from my school district on two occasions, as a graduate assistantship during my graduate studies, and most recently as a sessional lecturer. In my graduate assistantship, I worked with Dr. Linda Peterat in a Collaborative Teacher

Education Project with home economics student teachers. We placed students in teaching pairs and encouraged team teaching, team planning, and peer reflection. We worked to form partnerships with teacher advisors and to introduce student led conferences and portfolio assessment (Peterat & Smith, 1996). As I began my second secondment (2004-2006), I came across a book by Bullough and Gitlin (1995) titled Becoming Students of Teaching: Methodologies for Exploring Self and School Context. It was those first four words that stuck with me. Our approach in education typically is that we dealt with students who would become teachers, the language implied that the journey was over.

So I began to use "Becoming Students of Teaching (BeST)" as the theme for my work suggesting that we were all becoming students of teaching and it was a life-long journey of professional development and improving teaching that never ends. I used the notion of shifting our discourse in working with the school advisors to explain my direction and we created a "map" to show how our discourse needed to change. It looked like this:

From		To
Teacher Training		Teacher education
Method Courses		Curriculum and Pedagogy Courses
Teachers as Technicians		Teachers as Students/Inquirers
Supervisors of Student Teachers		Faculty and School Advisors
Supervision		Mentoring
Clinical Supervision		Dialogic Supervision

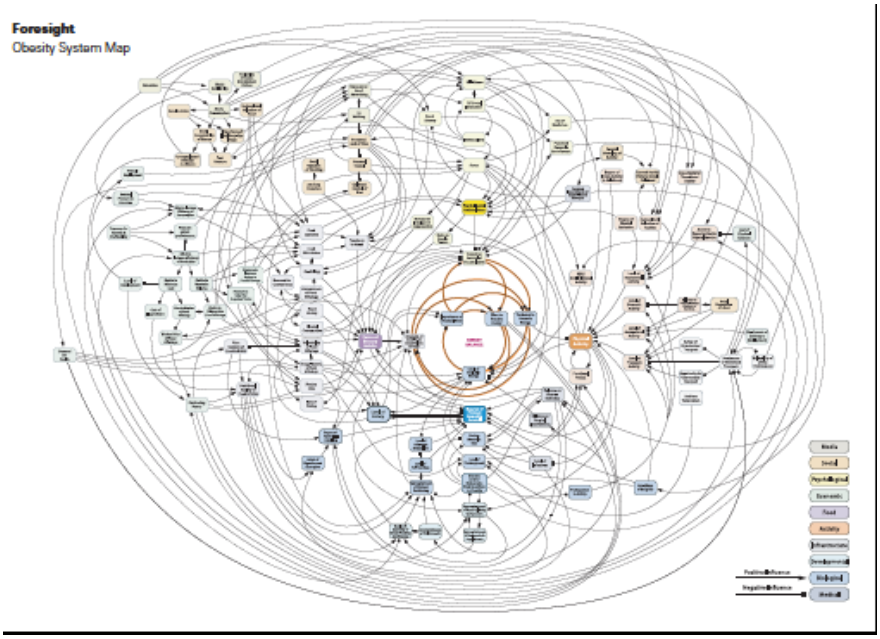
My hope was that by turning to a more investigative/interpretive mode, studying teaching, all three involved in the typical pre-service teaching triad - teacher candidate, school advisor and faculty advisor - would come to better understand ourselves as teachers and what

makes a "good" teacher or more aptly to better understand in what ways can we work toward becoming the "BeST" that we can be whether it be as a home economics teacher, as a mentor/advisor or both. Two of the school advisors who were masters students at the time turned this information into a handbook for the pre-service teaching triad (Nicolson & Petersen, 2006).

Sketch 4 – Bring Back Home Economics

In the past decade it has been encouraging to see so many articles in the popular press advocating "bring back home economics" so for Symposium XIII, I decided to collect and analyze them for what they were saying about home economics. Home economics has a long history of having to defend its position in both higher education and public schooling and I thought that such support would really help us. Now I am not so sure.

So many of the articles focused on bringing back home economics because of the "obesity epidemic" and on home economics as a cooking course, that it became somewhat discouraging. For example, Jennifer Grossman (2003) opened her article with "Want to combat the epidemic of obesity? Bring back home economics" and Veit (2011) said "put the tools of obesity prevention in the hands of children themselves, by teaching them how to cook." Granted there were some articles that seemed to understand the need to broaden the context to independent and family living skills for all students (not just women and girls) and a few that brought in the critical perspective of understanding the corporatization of the food system and the environmental aspects of food production and consumption. But on the whole, many of the claims were based on simplistic understandings of obesity and cooking and home economics (Smith, 2015). They seemed oblivious to the complexity of obesity as illustrated in the Foresight Obesity System Map (Butland, Jebb, Kopelman, McPherson, Thomas, Mardell & Parry, 2007, p. 84).



Cooking skills do not appear on this map, although they might be subsumed in food literacy which is one of the many factors portrayed. Thus, in my opinion it is overly optimistic to think that learning "how to cook" could cure obesity. As well, Short's (2003; 2006) study demonstrated that cooking is not simply "how to cook" skills but involves a complex interaction of technical, perceptual, conceptual, academic, and planning skills. Additional exploration of the topic (Smith, 2016) led me to conclude that if we do not challenge these contested discourses we risk becoming agents of the "governmentality of girth" (Coveney, 2000) or of a "pedagogy of shame" (Bartky, 1996). Matthews (1987) suggested that home economics had never reached its full potential because it was impossible to "help" people while systematically disparaging their life experience. Brown (1984;1993) warned us to be cautious of ideas that are imposed upon us and proposed that home economists need to become aware of the social institutions and social practices that have shaped our understandings of the everyday life of families. In other words, she called for home economists to become aware of the dominant hegemonic ideologies that mask reality and divert attention away from any attempt to tackle the real causes of problems facing individuals and families.

Our Language Casts a Long Shadow

Once I started down this path of examining language, I find myself constantly scrutinizing the language we use and how the words write us. By "write us" I mean they position us in certain camps or ideological positions that limits what we do and in whose interest we act. Words cast a long shadow. A few additional examples:

• Future proofing – A few years ago there were several references on the International Federation of Home Economics (IFHE) website about future proofing the profession as the new position statement included the term defining it as "anticipating future developments to minimize negative impacts and optimize opportunities" (IFHE, 2008). The term just did not sit well with me. Perhaps because it was borrowed from business, engineering, architecture, information technology where "hard" scientific and technocratic rationalities dominate. Technopedia™ suggests it is often "fruitless labour" and that future proof is a buzzword that describes a product, service or technological system that will not need to be significantly updated as technology advances. In reality, very few things are truly future proof. So I wondered, is it really a term we want to use? Wouldn't it be better to be prepared to be able anticipate complexity and to be prepared to make changes as necessary or talk about being a future-building profession rather than a future proof profession?

• Sustainability - I stumble over the word "sustainability". It has become a ubiquitous, meaningless term. It has been appropriated by almost every aspect of society for a variety of purposes many with no connection to the environment or ecology as originally intended. Wouldn't it be better to speak specifically to what the issue is, caring for the world, or using resources carefully and wisely?

• Name Change - Frequently changing the name from home economics to something else is raised (e.g., Family and Consumer Science; Human Ecology) but changing the name doesn't guarantee anything especially if there is no change in professional practice. Most names are problematic in some way, for example:

- Domestic Science – puts us in the domestic sphere and doesn't acknowledge the public sphere (policies), emphasizes scientific rationality, maintenance of the status quo.

- Home Management or Home Science – links us to managerial and scientific discourses that value efficiency, and technocratic rationality where technological innovations are equated with progress.

- Family Studies – does not necessarily recognize the connection between family and the world around them. "Family" singular can be problematic. It implies one family, usually the nuclear family as the ideal masking patriarchal, individualism ideologies.

- Human Ecology – "human" implies an anthropocentric view of the world where humans are separate from the world around them and still dominate. There is already a branch of ecology called human ecology that studies the influence of humans on the environment. Vaines (1994) has argued for ecology (not human ecology) as the unifying theme in home economics recognizing the relationships and interdependencies in the ecosystem and locating each of us as a part of the ecosystem, which is profoundly different from an anthropocentric perspective.

- Family and Consumer Science – family and consumption are both problematic. There is a danger that he family becomes a consumptive unit and aspects of family life become commodities. Thus, we become associated with the neo-liberal values of consumption, materialism, individualism, and free market capitalism. The association with scientific rationality is also problematic as it assumes that science and technology will rescue humanity.

- Home Economics - carries a lot of baggage. The biggest baggage is the "housewife preparation" image. If we go back to the origins of economics the Greek noun *oikos,* meaning "home" and "economics" where the "eco" also used in "ecology" means stewardship or management of a household, then using "home" becomes redundant. However, the modern version of economics is problematic as it has become the science of self-interest, viewing the environment as an exploitable resource and material goods a status symbol. It is supported by neo-liberal ideologies which seek to free the markets from any barriers to profit.

In recent years I have explained that the way I understood home economics was that the "home" in home economics as the earth as our home, or our home as the earth's house; and "economics" as the "art of managing a household" which in the 1600s meant frugality and the judicious use of resources (Online Etymological Dictionary). One has to have a value/moral

position on what is right in order to determine “judicious”, which would include no interference with nature’s inherent ability to replenish itself.

Concluding thoughts

Marjorie Brown (1993) wrote a book with the sub-heading “basic ideas by which home economists understand themselves” but if you read the book you would probably come to the conclusion that it was really about how we “mis-understand ourselves” or how if we don’t really articulate or explain what we mean by the terms we use and determine whether they are appropriate for our intentions, we risk taking actions contrary to our espoused mission. As Brown (1993) says, "they create illusions by which home economists deceive themselves: the ideas and the professional activities based on those ideas are contrary to the real intentions of home economics" (p. 484).

Language defines. Different discourses start from different premises, draw on different data, have different logics, are informed by different value systems, and have different end goals. In order to make sensible choices for action we need to be able to understand these different discourses and challenge the discourses we use and those used by others in reference to us when then what they imply is antithetical to our cause. Bowers (2001), in writing about environmental education, says “if we are to rectify our relationships with each other and the environment, we must first rectify our language” (p. 150). The same could be said for home economics education.

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Eat Your History: Bringing a Historical Perspective into Food Studies

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Introduction

In 2011, we along with Dr. Linda Peterat, started the BC Food History Network. It was a small project to "recover memory and history" related to food. We were inspired by Mark Kurlansky (2007) who said,

> [I]f future historians want to look at what life was like in the early 21st century – the technological and information revolutions, the blessings and dangers of globalization, the challenges to the survival of the healthy planet – they would do well to look at our food (p. 43).

Recent Canadian scholarship has enthusiastically endorsed the importance of food as a lens for approaching the past (e.g., Cooke, 2008 ; Epp, 2012; Hanrahand & Ewtushik, 2002; Newman, 2017). In this paper we explore how food can be used to facilitate historical consciousness in home economics food studies courses.

A Rationale for Including a Historical Perspective in Food Studies

A quick glance at most food studies curriculum documents in Canada reveals that emphasis is seldom put on understanding the history of food production, preparation, or consumption. The curriculum and education could be described as *ahistorical*, that is, not particularly concerned with or related to history, historical development, or tradition. Much curriculum content in home economics education focuses on the present and topics are rarely contextualized with a temporal dimension. For example, in the British Columbia 2007 official curriculum document for food studies, students are to "use" *Eating well with Canada's Food Guide* in various ways with increasing sophistication through the grades. No mention is made of the history of food guides, why they were developed, how they were developed, how they have changed over time, issues related to the current guide or how food guides might be shaped in the future.

Hicks (2006) suggests that the spatial and temporal dimensions are often missing from curriculum and yet it is vital for teachers and students to understand the temporal interrelationships between past, present and future and the spatial interrelationships between local, national and global.

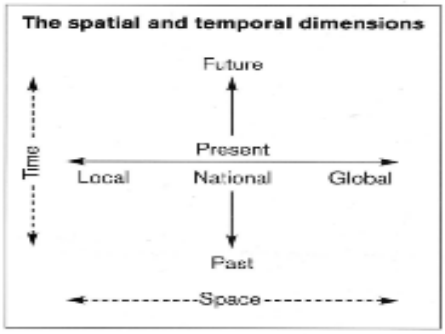

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Fig. 1. The spatial and temporal dimensions of curriculum (Hicks, 2006).

> Hicks' figure is a reminder that curriculum contains both a spatial and temporal dimension. The past and future are frequently absent from the temporal dimension of the curriculum and the local and global are often missing elements on the spatial dimension. This could be attributed to what has been described as *presentism*, an uncritical adherence to present-day attitudes, especially the tendency to interpret past events in terms of modern values and concepts (e.g., Hunt, 2002). This is not a new term. Ralph Tyler (1949) used it over a half a century ago when he wrote that determining curriculum content only from children's interests and everyday lives was a "cult of 'presentism'" (p. 18). Hargreaves and Shirley (2009) found that presentism is very much a part of today's schools. They extended the work of Lortie (1975) who determined that what made schools so resistant to change were three interwoven orientations, individualism, conservatism and presentism. Lortie claimed this leads to short-term thinking and maintenance of the status quo in education and attitudes of temporal superiority. Hargreaves and Shirley also describe a new form of presentism that also exists in today's schools, addictive presentism, described as the addiction to short-term gimmicky fixes, "instant strategies that enhance effectiveness in what already exists rather than reflecting

on and reforming what already exists" (p. 2516). The curriculum task for those who advocate moving beyond presentism (e.g., Hargreaves & Shirley, 2009; Nahachewsky & Johnston, 2009) is to "recover memory and history in ways that allow people [and we add, students] to re-enter politically the public sphere in privately meaningful and ethically committed ways" (Pinar, 2004, pp. 240–241). This notion echoes the work of Marjorie Brown (1993) who argued passionately for home economics as a political/moral endeavor that could address social conditions affecting the family and work towards the common good. The political/moral basis is clearly evident in the third system of action of the Brown and Paolucci (1979) mission of home economics that states that home economics seeks to develop "emancipative action which provides critical consciousness of social forces and which then formulates social goals and values and judges critically the means by which to accomplish those goals and values" (p. 22). It is also implied in the third essential dimension for home economics in the position paper published by the International Federation of Home Economics (IFHE, 2008): "[a] demonstrated capacity to take critical/ transformative/ emancipatory action to enhance wellbeing and to advocate for individuals, families and communities at all levels and sectors of society" (p. 1).

We view the historical as a key component of the temporal dimension in education (Hicks, 2006; Pike & Selby, 1988) allowing students to see that the past, present and future are in a dynamic relationship rather than a linear progression and to understand that in order to take informed action one must understand how social conditions of the present have a past. Including a historical perspective in our teaching is seen as something that could lead to a new understanding of the present and the future. History shapes us. It makes us who we are. If we think and act and feel in certain ways rather than others, it's because of our history. Without history we have only a part of the story. History shows us the historical roots of what we take for granted, illuminating decisions that have been made by somebody somewhere in some kind of context. This way of knowing can be the source of new insights that can shape the future. We are particularly interested in how food takes us back in time and links us to the food choices, recipes and rituals of previous generations. These links can inform students of historical, cultural, social,

economic and political connections related to food and everyday life, and enable them to make informed, educated decisions related to their health, food purchases, family life, the environment and the common good.

Therefore, we submit that including a historical perspective in food studies curriculum and pedagogy is a necessary requirement in developing:

- a "sense of place" - when the history is located in the community in which students live - "immersing students in local heritage, cultures, landscapes, opportunities and experiences" ("Sense of place", n.d.. para. 1) and using these as a foundation for the study
- critical thinking related to what is taken-for- granted. A close examination of our shared past by taking notice of something that often goes unnoticed – such as food – can overcome what Wansink (2006) calls "mindless eating" (Wansink, 2006), or what Berry (1999) and Vaines (1999) refer to as "industrial eating" that is so prevalent in today's society.
- a deeper understand of cultural traits, social institutions, natural histories and individual attitudes that "cannot be entirely understood without an understanding also of how these have meshed with our varied and particular modes of eating" (Farb & Amelagos, 1980, p. 4)
- a broader, deeper food literacy than the typical notion that is promoted as reading recipes and labels and learning to cook. Recovering food history contributes to a better understanding of food practices and has the potential to make a more food literate consumer, to improve healthy eating habits, to honour and preserve family and community traditions, to renew a sense of the pleasure of eating.
- an understanding how food has shaped identities. "Food is not just what we eat. It is an expression of who we are, how we live and the world we inhabit" (Kurlansky, 2007, p. 43).
- a global perspective that recognizes ethnocentrism and seeks to breakdown stereotypes and prejudices related to food. Working with content alone fails to address contextual factors that offer students the possibilities of making connections with broader social, political, economic and cultural events. An example of this would be studying the history

of dining and manners only through a European – North American lens and disregarding customs of other parts of the world.

• an ecological perspective that recognizes that environmental issues have evolved over time. This can lead to more sustainable food consumption patterns.

• interdisciplinary thinking – historical inquiry breaks down the compartmentalizing of knowledge and demonstrates how home economics integrates social studies, science, mathematics, literature and various other subjects.

What historical content could be infused in Food Studies Curriculum?

Almost every topic that is included in home economics curriculum guides could be contextualized with historical content. The renowned U.S. food studies scholar, Rachel Laudan (n.d.) suggests that there are at least six "histories" that could be part of food studies:

- Culinary history focusing on what cooks knew how to prepare at a given time
- Dietary history dealing with what people actually ate in the past, concentrating on calories and nutrients rather than on finished dishes
- Nutritional history addressing how people's diet affected their health and well-being
- History of dining and manners – how people consumed their food and the rules they followed
- History of theories of diet – what professionals have said in the past about what we should eat
- History of foodstuffs – concentrating on a particular ingredient or commodity

What teaching strategies could be use to infuse a historical perspective in Food Studies Curriculum?

Teachers can ask themselves "*How have I set the context for this lesson in terms of time and space?"* and bring historical content into every lesson they teach. In the previously mentioned food guide example we suggested discussing with students why food guides were developed, how they were developed, how they have changed over time, issues related to the current guide or how food guides might be shaped in the future. In teaching a specific unit on preservation, historical methods of drying, salting, fermenting and winter storage in root cellars could be introduced. A discussion of the taken-for-granted concept of modern refrigeration

could lead to exploring food choices that are non-perishable and how to obtain essential vitamins and minerals when fresh fruits and vegetables are not readily available. When teaching a specific technique, for example beating with an electric mixer, students could speculate on how this was done before electricity. The mechanical workings of early egg beaters could be examined; First Nations traditions of whipping soapberries into foam using wads of grass or fingers could be explored (see Dehart, 1989). With the current resurgence in grinding one's own grains, the history of early flour and grist mills could be researched with emphasis on use of local staple foods.

The emphasis in today's schools on inquiry learning provides a window to infusing a historical perspective. Students can be encouraged to use various forms of historical inquiry. Lowenthal (1985) suggests that the past can be known through memory, history and relics. Laudan (n.d.) adds chronology and legend.

Memory - A tribute to something that we believe we have lost, situating people and events into historical context. Students could interview family members or elders in the community and collect food memories (e.g., of various eras, of immigrant experiences, of traditional festive and celebratory foods, outdoor experiences with hunting, fishing and mushroom and berry picking expeditions, to name a few).

History – Descriptions of an event by someone other than an eyewitness. Student inquiry could involve the investigation of how food and agriculture affected settlements, how meat was obtained and preserved, how was food safety handled, smokehouses and slaughterhouses, when and how did the microwave become standard kitchen equipment, the etiquette (table manners) of the times of a particular time-period, the rise of farmers' markets and school gardens. They could be encouraged to compare then and now and speculate on the future.

Relics and Artifacts – these can include letters and diaries, cookbooks, newspaper articles, memoirs and autobiographies, pictures and photographs, cooking utensils and implements, recipe collections and so on. These items can assist in imagining what it was like back in those days and how daily life had changed. Students could trace a recipe to its source, compare and contrast recipes for the same food product, note evidence of

hybridization or creolization, try the recipe in old and new versions and report their findings. They could find a piece of old kitchen equipment and learn how to use it (e.g., try baking/cooking on a wood-burning stove or using a sausage grinder). A visit to the museum and archives is a rich source of relics and artifacts.

Chronology - a list of events in the order in which they occurred. (see for example, http://www.foodtimeline.org/). A common strategy in historical accounts is to put the data in chronological order, a " what happened when" approach. Timelines assist students in putting curriculum in perspective. They provide a visual tool for examining a topic over a period of time as students compact a great deal of complex information. Students learn to prioritize and summarize information. By creating a timeline of significant events they can be placed in the context of the prevailing socio/economic and political conditions of the period. This adds "what else happened when" so that implications, antecedents, and consequences, become part of the analysis and interpretation. Generally, the historian is trying to tease out the "why" of the event or activity. Students could compare one particular recipe in several cookbooks over a number of years and trace the development of certain food production and preparation technologies, processes or ingredients.

Legend - A story that supports the beliefs of lots of people. Students could investigate the stories behind common cultural practices such as serving turkey at Christmas, eating chocolate on Valentine's Day and making pumpkin pie on Thanksgiving, or the stories behind certain practices or use of ingredients.

Eat Your History Contest

For two years the BC Food History Network ran a contest titled *Eat Your History* for high school home economics students in the province (2012 and 2013). Cash prizes were awarded to the winning students and the home economics program at their schools. The winning entries were:

- Salmon Heritage
- Apples Galore
- Buon Appetito!

- Steveston's Fisherman's Wharf

The contest was suspended for a couple of years but is going to be re-instated in the 2017/18 school year. It will be slightly modified and students will be required to submit a short paper that could become a blog entry on the website. Students will be encouraged to use the current blogs as examples (e.g., Canadian War Cake; Armstrong – Celery City; Wokking with Yan).

To motivate teachers to include historical perspectives in home economics foods classes, seven inquiry activities were outlined in detail for easy use and are available on the BC Food History Network website:

- Early and Current Foods and Food Production In BC
- Intergenerational Food Stories
- Decoding Old Photographs
- Investigating Vintage Recipes or Cookbooks
- Food Personalities in BC History
- Understanding British Columbia's society and cultures through food and eating
- Local museums as sources of food history

As well a list of additional suggestions for student inquiry activities is provided:

- Report on local fairs, exhibitions and festivals that feature foods.
- Report on a specific local ingredient or food product (could be domesticated or wild)
- Investigate how labels of a specific product produced in BC have changed over time.
- Investigate how advertisements for food have changed over time.
- Choose a particular time-period and investigate the etiquette (table manners) of the times.
- Deconstruct a menu for a specific meal.
- Report on traditional methods of preservation.
- Report on Victory Gardens.
- Report on School Gardens.
- Investigate traditional meals served at Hudson Bay Forts.
- Find out about meals served on the railroads.

Conclusion

Awareness of the history and background of the foods we prepare and eat enriches and expands educational value for students and teachers. Learning about historical influences and making connections between and among food customs provides an opportunity to break down walls between "them" and "us" whether between cultures or intergenerationally. We are all human; we all have to eat. We have all developed particular food customs that reflect our economic, social, cultural and historical backgrounds. That history needs food studies is evident in our opening quote but the reverse is equally salient - food studies needs history. Given the importance of food to human life, and its intimate connection to the way we live and how we use the world, we propose that more, not less food history needs to be infused in all aspects of home economics education.

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Visible Learning in the Human Ecology Classroom: Maximizing Achievement

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Know thy impact! As an educator, do you teach for intent or do you teach to just cover the curriculum? This is a strong statement for any teacher to ponder. The concept of visible teaching and learning presented by John Hattie (2012) is significant research on improving student learning that demonstrates the effects on student learning and how to maximize student achievement.

According to Hattie who is a Professor and Director of the Melbourne Education Research Institute) visible teaching and learning occurs when there is a conscious effort for mastery of a set goal. Feedback must also occur among teachers, students, and peers who are actively and passionately engaging in the learning process.

Hattie's theory is based on the largest educational research done to date. It is founded on 900+ meta-analyses. The method he used in his research included identifying specific outcomes (e.g., achievement) with an identified influence on the outcome, (e.g., homework). He then researched a variety of databases such as mainstream journals, books and dissertations for comparisons and effect sizes, (e.g., those doing homework and those who did not) and created a list of these effects.

In his comparisons, Hattie found most of the identified outcomes have some sort of effect on learning. The effect ranges from negative learning effects to an increase of more than a regular year of learning. He has summarized his findings in a barometer form to both visualize and clarify what the effect size is. Influences that were at a hinge point of 0.40 and greater had the **MOST** effect on learning (Hattie, 2012). This is what inspired my learning journey with making learning and teaching visible in my Human Ecology classroom.

Hattie's research is modern and extensive and should be highly considered by classroom teachers, school administration and divisions alike. As educators wouldn't you want to identify

those practices that have the largest impact on your students learning? I believe this is a concept that "every" educator should learn about and include in their own teaching practice.

Every educator has their own teaching style and implements their own unique strategies for teaching within their content areas. Add to this a classroom full of unique learning styles and personalities and you have quite the challenge.

Yes, teaching is not always easy. However, making learning intentional for your students by identifying those practices that will have the largest impact on your students learning is critical. Students will go beyond surface learning and become deeper learners as they apply what has been learned. Deeper learning opportunities will provide students with the ability to transfer their learning, such as peer teaching and incorporating their learning to other areas of their lives creating life skills. (Fisher, Frey, & Hattie, 2016) Imagine preparing students for lifelong learning!!

This is where the Human Ecology classroom is a natural fit with the visible teaching and learning concept. The teaching environment is such that content area teaching compliments both the theory component and the necessary practical application that occurs. Student learning is very "visible" through this process and allows the teacher to quickly assess the students understanding of the concepts or tasks given. Teacher intervention is more immediate as re-teaching, adapting instructional methods, peer tutoring, and simple clarifications or explanations can occur to enhance learning progress.

Three key influences I found to be significant to maximize student impact in my work in the Human Ecology classroom are feedback, self-assessment and collaboration.

The first influence of effect I wish to explain is ***Feedback***. Feedback occurs between two or more engaging parties. It may include teacher-teacher, teacher-student(s), or student-student(s). Teachers who ask for feedback from their students will be better able to assess their own teaching and determine the teaching impact. Then teachers can adjust learning strategies or techniques as needed to support learning for all the students in their class. Students also need to be given constructive feedback to help them achieve goals and work from a place of "here I am" to "this is where I need to be." Therefore, feedback will enhance teacher actions and expectations for the benefit of all student learners (Hattie, 2012).

Simple classroom techniques such as students giving a thumb up, thumbs down or neutral thumbs can provide immediate feedback to a variety of content statements, issues or questions. Where a more technical and more private feedback approach could involve input from desktop computer, laptop, IPAD or personal phone devices in conjunction with applications like SOCRATIVE (a user friendly app designed for quizzes, tests, surveys etc.).

Self-assessment is the second influence of effect that can play a significant role in learning. Self-assessment on its own can often be overlooked as an effective teaching tool as it may be skewed depending on student self-knowledge. In other words, how well the student "knows thy self", as Socrates had advised. However, self-assessment can certainly provide a student with the motivation and insight to perform at a higher level especially when combined with feedback from others including peers and those who know them best. It provides effective opportunities for students to set goals, know what success looks like, and engage them in their own self-assessment process (Hattie & Yates, 2014). Self-assessment techniques can be incorporated with such tasks as completed project evaluations that have both a student and teacher rubric.

The third and final effect involves ***Collaboration***. Collaboration is bringing students together so that peer mediation can be achieved for the benefit of all students within the group(s). This is comparative to the concept of differential instruction sometimes also known as teaching with multiple intelligences in mind.

Educators must be aware of the truth that all students bring a wide variety of talents, interests and experiences within their personal learning packages (Hattie, 2012). Collaborative opportunities can provide students with the added benefit of bringing peer skills to enhance their own learning progress and attain mastery of a common learning goal or expectation. The Human Ecology classroom certainly provides an environment for collaboration through the use of group research projects, various clothing projects to kitchen tasks, food product and recipe evaluations.

In summary, knowing that I am passionate about the learning content in Human Ecology is one thing, striving to make thinking and learning visible for every one of my students and being aware of my effect on their learning creates a scenario where all my students have the

opportunity to share the same passion. Providing students with the skills to take charge of their own learning progress and starting my students on the path of becoming lifelong learners requires feedback, self-assessment and collaboration techniques. Keeping visible thinking and learning at the forefront of my teaching practice will provide that professional critique I need to affirm that intentional teaching and learning is taking place for the benefit of all my students. I challenge educators; "KNOW THY IMPACT to maximize learning."

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Interviews of Farmers as a Teaching Resource for Agriculture Literacy in Home Economics

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Introduction

It has been said that most people lack even a superficial knowledge of agriculture, where their food comes from, and who produces the food (Balschweid, Thompson, & Cole, 1998; Berry, 1990; 1996; 2009; Buck & Rumble, 2013; Dyg, 2014; Hess & Trexler, 2011; Kneen, 1995; Smith, 2009a; 2009b; Vidgen & Gallegos, 2012). Balschweid et al. (1998) express concern that students are becoming increasingly unaware of the source and methods used in the production of their food. The term food literacy is used to express the need for a broader understanding of food. Vidgen and Gallegos (2012) define food literacy as:

> a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat foods to meet needs and determine food intake. Food literacy is the scaffolding that empowers individuals, households, communities or nations to protect diet quality through change and support dietary resilience over time (p.vii).

There is an overlap of interest between food literacy and agricultural literacy. Agricultural literacy is a sub-concept of food literacy (Vidgen & Gallegos, 2012).

Defining Agricultural Literacy

The National Research Council (NRC) coined the term "agricultural literacy" in 1988 (Frick, Kahler, & Miller, 1991; 1992; National Research Council, 1988; Trexler & Hess, 2011). The accepted definition is:

> Agricultural literacy can be defined as possessing understanding of our food and fibre system. An individual possessing such **knowledge** would be able to **synthesize, analyze and communicate basic information** about agriculture. Basic agricultural information includes: the production of plant and animal agricultural products, the economic impact of agriculture, its societal significance, agriculture's important relationship with natural resources and the environment, the marketing of agricultural products, the processing of agricultural products, public agricultural policies, the global significance of agriculture,

and the distribution of agricultural products. (Frick, Kahler & Miller, 1991, p. 52, emphasis added)

The definition was designed to promote the inclusion of agricultural education into classes from kindergarten to grade twelve and to advocate for systematic instruction aimed at becoming agriculturally literate (Frick et al., 1991). Curriculum supports were added into both urban and suburban schools to encourage diversity (Kovar & Ball, 2013). Two broad educational goals are evident in this definition: knowledge and critical thinking.

Agricultural Knowledge.

Agricultural literacy includes basic **agricultural knowledge** such as that identified in the definition (Frick et al., 1991). It has been found that urban and rural non-farming adults lacked basic knowledge about agriculture (Frick, Birkenholz, & Machtmes, 1995; Meischen & Trexler, 2003). It should also be noted that just because children attend rural schools does not necessarily mean they know much more about agriculture than urban students (Meischen & Trexler, 2003).

Authors who use the term food literacy often stress the need to understand food from "farm to fork" (e.g., Pendergast & Dewhurst, 2012; Smith, 2009a;2009b; Vidgen & Gallegos 2012). The path from "farm to fork" historically used to be well known and understood by everyone (Cullen et al. 2015). However, today the food system is complex with the abilities to import and export a variety of foods. Food miles is a popular term used to indicate the distance that food travels from the farm to the plate (Weaver-Hightower, 2011) although it is considered a fairly crude measure. It tells us how far food travels but is not a very good measure of its environmental impact. Dyg (2014) adds that agricultural literacy includes knowing the "…[basic] and practical skills of growing your own food… and [having] the abilities to communicate [and understand] hands-on experiences, experiments or farm visits to qualify a deeper understanding of food and agriculture" (p. 191).

Missing Element

Meischen and Trexler (2003) point out an aspect that is missing from the definition of agricultural literacy in their statement, "[B]ecause agriculture is a unique culture, an understanding of beliefs and values inherent in agriculture should also be included in a definition of agricultural literacy so people can become engaged in the system" (p.44). I understand this to

mean understanding agriculture as a human endeavor and connecting students to real people involved in farming (either directly or vicariously). So much of agriculture education takes farming out of its cultural context and away from families. As a result, students are likely to become more estranged from the land and devaluing the actual work of farmers. Brewster (2011) suggests teaching activities that show "just how fascinating these folks [the people who produce food] are—how many great stories they have to tell" (p. 35). Stories are a way for students to gain a respect for people who work hard to produce the commodities we consume on a daily basis (Brewster, 2011).

Agricultural Literacy Education

Agriculture literacy is important because it involves understanding how food is produced and who produces it. It can be used to encourage critical thinking, the ability to analyze, understand and make value judgments. Wendell Berry (1990) states if you eat, you are connected to agriculture. Students need to look beyond the grocery store shelves, develop the knowledge needed to produce quality foods, and gain a deeper understanding of the food system to understand where their food comes from (Berry, 1990; Caraher & Reynolds 2005; Pollen, 2007).

Addressing agricultural issues in schools has been advocated as a way to achieve the goal of an agriculturally literate public (Hess & Trexler, 2011). There is some discussion about how to do this. Should it be a separate course? Or should it be integrated across the curriculum? Harris and Birkenholz (1996) recommend the latter strategy based on a study of 200 programs in the United States. Programs such as Agriculture in the Classroom (AITC) aim to provide resource materials for teachers for both approaches. AITC was started as an elementary education program in 1981 by John Block, a former United States Secretary of Agriculture, who was a strong advocate of agriculture literacy (Hillson, 1998). AITC was created to fill the need to provided children and teachers with information pertaining to agriculture practices; integrating agricultural subject matter with academic subject matter. Today, AITC in Canada, is an informal network of the various provincial and territorial associations that are affiliated with a national organization (AITC, n.d.).

Teaching Approaches for Agricultural Literacy

The research on implementation models specific to agricultural literacy is rather slim. Myers and Dyer (2004) found that while many studies recommended a problem solving approach, most agriculture teachers used lecture/discussion as the most common format for teaching. The teacher centered approach is used because teachers often do not have the background knowledge to present more active and engaging lessons. The most clearly articulated implementation model for agricultural literacy is the Powell, Agnew and Trexler (2008) model based on cognitive-constructivism (see Fig. 1). This model is designed to have students expand on their own knowledge bases and put that information towards meaningful decision-making, problem solving, and value judgments (Powell et al., 2008).

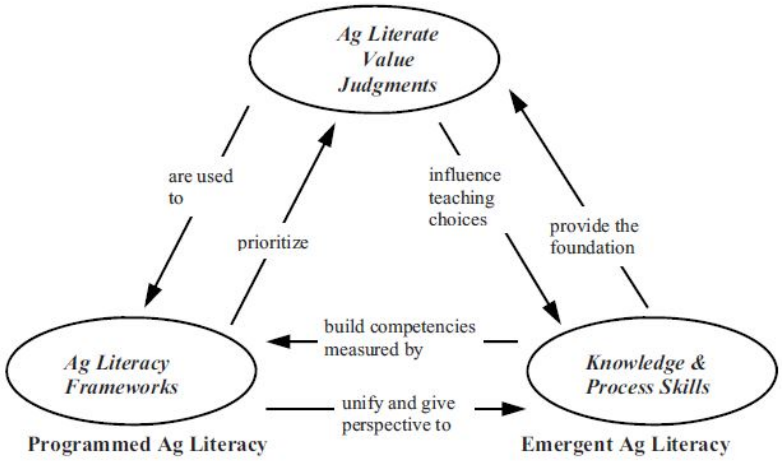

Figure 1. Interactive relationship between agriculture literacy values, knowledge, and framework **(Powell, Agnew, & Trexler, 2008, p. 91)**

Figure 1 shows the relationship between having a conceptual framework that guides program development designed to provide the knowledge and critical thinking skills that encourage value judgments. This conceptual framework is guided by the belief that by being able to gather and process the necessary agriculture information, allows students and teachers to transfer and apply this content in making the value judgments that apply to everyday food production and consumption. Whether this happens in reality has not been documented.

Teachers' beliefs, attitudes, knowledge, conditions and goals play a critical role for how and what is taught about food and agriculture in the schools (Dyg, 2014). Teachers ultimately

decide on the content they will teach, how to teach the content so students can understand, and the length of time spent on content areas (Knobloch, Ball, & Allen, 2007). Knobloch et al. (2007) also argue that teachers' beliefs, ideas, and experiences guide them on how they teach and incorporate agriculture education in their classrooms.

Teachers who don't have an understanding about agriculture education may find it difficult to make the decision on what to include and what to exclude. Dyg (2014) proposed that "[some] teachers struggle to teach agriculture due to limited knowledge and familiarity" (p.57) and are more likely to make a conscious effort to incorporate agricultural literacy into a variety of topics and lessons when they support a topic of interest and find useful teaching resources (Hubert, Frank, & Igo, 2000). Meichen and Texler (2003) recommend "enhanced curriculum" (p. 79) and Knoblock and Ball (2003) mention the need for materials on agricultural literacy topics. I take this to mean that teachers require useful resources with background information. Providing teachers with useful resources will help prevent portrayal of generic and stereotypical views of farming. Those resources should connect students to the farm so that they can develop and understand of and respect for the work of producing food and perhaps even think about what Vaines (1997) calls the sacred nature of food.

Incorporating Agriculture Literacy into a Teaching Resource

I created a teaching resource to assist in teaching agriculture literacy in home economics education. By interviewing four local farmers, I endeavored to create a resource that would be accessible to teachers to include in their curriculum to teach students about where the foods they eat come from. Each of the four interviews included in this resource have been reviewed and approved by the farmers I interviewed. I used the information from the interviews I conducted to create draft stories and then the participants read and made suggestions that were incorporated in the final stories. Hess and Trexler (2011) support the co-creation of instructional materials, resources, and media by individuals and groups with an interest in agriculture.

The teaching activities and resources that are included with each interview were developed with the recommendations from the literature review in mind. For each interview a way of engaging students with the material in the story was included. Then each of the activities

was coded to show whether the focus was on knowledge (K), synthesis and analysis (SA), communication (C), or decision making and problem solving (DP).

My teaching resource consists of interviews with images, pre and post reading teaching activities, definitions for terms in the stories, background information for the teacher, and - since this is targeted to home economics foods and nutrition teachers - recipes that can be used for foods classes. This teaching resource is designed to make the information easy to obtain and use for educators and individuals who would like to know more about farming.

Summary

I acknowledged that agriculture literacy is a sub-concept of food literacy. The literature on agriculture literacy indicates that it involves both knowledge, understanding how food is produced and how produces it, and critical thinking, the ability to analyze, synthesis and make value judgments. It also suggests that if there are useful, engaging teaching resources that are available then teachers are more likely to address agriculture literacy with their students. Hence we can enrich agricultural literacy in educators' foods and nutrition courses by "putting a face" on the food we eat - to link consumers with producers of food.

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