CULINARY SUSTAINABILITY EDUCATION:
A CULINARY EDUCATION AS SUSTAINABILITY

by
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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education, Educational Sustainability

at
University of Wisconsin – Stevens Point

2020

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Doctor of Education degree program in Educational Sustainability

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Doctor of Education

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Abstract

Critics have observed that modern culinary education still adheres to the traditions that emerged during the feudal era as well as the modernist values of power, hierarchy, reductionism, and dualist worldviews. More recently, a critical postmodern view of modern culinary education and the corresponding culinary industry reveals the industry is environmentally unsustainable in the way they think, operate, educate, and enculture learners into the profession and in their impact on the food industry at large. For sustainability to have a chance, transformative changes to culinary education can assist in reorienting student learning toward sustainable ways of being and acting—education that is about, for and as sustainability (Sterling, 2001). The study presented ten propositions derived from the literature review as a vision for culinary sustainability education (CSE). Then, through a multi-faceted thematic case study, involving interviews with three different case groups—scholar informants, food workshop participants, and culinary graduates of a sustainability concentration in culinary education—findings were derived that explored the transformation process for transitioning a program toward culinary sustainability education as well as the outcomes and barriers that were experienced by learners. Triangulated through participant observation and autoethnographic storytelling, the study concludes that the ten propositions for CSE are largely valid with small modifications and are useful as principles for adoption into culinary curriculums. Further, study participants identified current organizational patterns of power and exclusion, the thinking patterns of modernism such as mechanist and dualist views, and the vocational status of culinary education as problematic to sustainability culinary education. To assist the transformation toward sustainability, findings profiled the potential of chefs as change agents within the culinary industry, food system, and broader community.
Finally, the study identified pedagogical approaches that can best foster sustainability and break down current problematic patterns. This study concludes that CSE should be adopted by culinary schools to break the negative feedback loop of unsustainability in culinary arts and help foster a more sustainable future for humanity.
Dedication

To those I love with all my heart.

Monica, Talea, Brier

Daddy’s almost done with his homework, promise.
CULINARY SUSTAINABILITY EDUCATION

Acknowledgements

Monica, Talea, and Brier, thank you for being my purpose, for keeping me connected, and for not letting me become absent while in plain sight. Monica, your support more than anything made this happen. Your back must be aching for carrying my weight. Thank you for taking on so much. Talea and Brier, my little taste testers and fun makers, thank you for all the breaks, all the dinner delights, all the reading nights, and all the afterschool fun. You are everything to me and I cannot say enough about how proud you make me every single day.

To my committee, whose mastery was able to turn this cook into a published scholar. Thank you for all your guidance, for keeping the big picture, and for fielding an enormity of questions. Dr. Lange, your focus and expertise was a godsent. You knew the way along my path before I did and patiently encouraged me to work toward following it to achieve the goal that I at times couldn’t see. Dr. Fakazis, your edits toward publication provided refreshing new directions and perspectives I could not garner from within my wheelhouse. Dr. O’Neil, chair of my committee, mentor, catalyst of emergence, and ultimate inspiration, thank you for creating the Educational Sustainability Program at UWSP and for accepting me in its first cohort. You have made this dream come true for me. Your enthusiasm, positivity, sustainability expertise, support, and most importantly, passion for food, has shown by example how we can lead the world to a better future. I also want to thank Dr. St. Maurice for his cutthroat editing, significant APA guidance, and for all the cooking metaphors, without which I would probably still be hung up on my glossary definitions.

And to my cohort family: Hardened through battle together, we share a bond of deep friendship forged through hard work, determination, and support for one another. I would have
been totally lost without you all. Thank you for traveling this path with me and as our trails split, I wish you well and forever friendship. Once-in-a-while, expect a .gif from me.
# Contents

Abstract.............................................................................................................................................. 1

Dedication........................................................................................................................................... 3

Acknowledgements ............................................................................................................................ 4

List of Tables ......................................................................................................................................... 8

List of Figures ......................................................................................................................................... 8

Preface .................................................................................................................................................. 9

Chapter 1. Introduction ........................................................................................................................ 11
  Story 1. Set to Wonder at the Urban Farm ......................................................................................... 11
  Global Context .................................................................................................................................. 13
  Modern Culinary Industry .................................................................................................................. 14
  Sustainability Education .................................................................................................................... 15
  Problem Statement ............................................................................................................................ 17
  Purpose Statement .............................................................................................................................. 17
  Focus of Study .................................................................................................................................. 20
  Context of Research ........................................................................................................................... 21
  Overview of Chapters ........................................................................................................................ 22
  Glossary of Terms ............................................................................................................................... 22
  Overview of Theoretical Framework .................................................................................................. 30
  Significance of the Study .................................................................................................................... 33
  Positionality ...................................................................................................................................... 34
  Summary .......................................................................................................................................... 38

Chapter 2. Literature Review ................................................................................................................. 39
  Story 2. Allegiance to the Masters ...................................................................................................... 39
  Overview .......................................................................................................................................... 41
  Objectives ......................................................................................................................................... 41
  Thread 1. Critique of Modern Culinary Arts ....................................................................................... 43
  Thread 2. Finding a Vision .................................................................................................................. 65
  Thread 3. Pedagogy and Learning ....................................................................................................... 85
  Challenges to Pedagogical Change ..................................................................................................... 107
  Summary .......................................................................................................................................... 108
Appendix A. Literature Map ........................................................................................................307
Appendix B. Propositions for Analyses ..................................................................................311
Appendix C. Protocols .............................................................................................................315
Appendix D. Approvals & Consents ......................................................................................324
Appendix E. Codes, Results, and Strategies. .........................................................................333

List of Tables

Table 1. Critical Researchers ..................................................................................................87
Table 2. Preferred Competencies & Approaches for Sustainability Education ....................95
Table 3. John Dewey Kitchen Institute Tenets ......................................................................175
Table 4. Data Collection ........................................................................................................177
Table 5. Critique Theme, Subthemes, Respondents and Frequencies .................................185
Table 6. Vision Theme, Subthemes, Respondents and Frequencies .....................................195
Table 7. Pedagogy and Learning Theme, Subthemes, Respondents and Frequencies ..........207
Table 8. Examples Supporting CSE Propositions .................................................................230
Table 9. Mapping of Subthemes in Critique with Ten Principles for CSE ...........................243
Table 10. Mapping of Subthemes in Vision with Ten Principles for CSE .............................255
Table 11. Mapping of Subthemes in Pedagogy & Learning with Ten Principles for CSE ...263
Table 12. Ten Principles, Approaches, and Example Strategies of CSE ...............................264

List of Figures

Figure 1. Theoretical Model .................................................................................................32
Figure 2. Feedback Loop .....................................................................................................64
Figure 3. Confluence of Culinary Education & Sustainability Education ..........................65
Figure 4. Path of Research Design. ....................................................................................149
Figure 5. Data Analysis Process ........................................................................................178
Preface

In this contribution, I hope to form a lasting impact on the world by changing the way chefs operate in it. Instead of objectifying ingredients, the environment, and people, my wish is that this research can help impart a more cooperative relationship between the chef and the world they interact in. I didn’t always have this hope, as, like so many schooled and trained in this profession, I became a chef following the teachings of my chef-masters, knowing not to question their authority, but instead worship the knowledge they held. Such keepers of knowledge are also keepers of tradition, passing it down from one to the next, along with the wool which covers eyes.

My journey has taken me from the apprentice to the master, or so I once thought. Along the way to pursuing my career in the culinary industry, questions began to emerge: critical questions about the unsustainable nature of my trade, and its effects on the planet, humans, and nonhumans alike. Were we chefs only destined to build technical skills in order to satisfy our customers, be fashionable about it, and make as much cash as possible without considering the ramifications? How much plastic, Styrofoam, and cardboard is produced for foodservice? How much food is grown in excess? How many people are food insecure in the midst of such excess? How many members of a kitchen team have been chewed up and spit out by the very trade they inspire to be relevant in? Does a chef not have an obligation to their world and community?

This vein of emergent thoughts propelled me into education, where I quickly came to realize these were habits of disregard being fostered. I initially assumed teaching about the topic of sustainability would make the difference. However, as Sterling (2001) has asserted, as a topic alone, teaching about sustainability just was not enough to initiate a change in behavior
in individuals or society. My experiences in teaching taught me sustainability needed to instill values, action, and be something more if it was ever going to direct hearts, hands, and minds towards more sustainable behaviors and beliefs in autopoietic ways. My search brought me to my doctoral program in Educational Sustainability at the University of Wisconsin Stevens Point (UWSP) and has been what compelled this research study.

Though not typical of a standard dissertation report, I offer autoethnographic narratives through stories which provide contextual clues to the promptings which led to questioning my profession as a chef, and the way my profession is taught to learners. It also presents aspects and reflections of my inquiry in this research project. This, in part, illustrates my own transformative learning process and a relational approach to ways of knowing and being.
Chapter 1. Introduction

Story 1. Set to Wonder at the Urban Farm

The university bus pulled up to the corner of Somerset and Tanner Street. I called out to the students sitting behind me, “this is it!” A chain link fence covered in overgrown vines, and the backs of several outbuildings, blocked our view of what lay beyond. Behind me, students began to disembark. I watched them as they stepped off the bus, their kitchen clogs slapping the gritty city sidewalk below. Beat up and tired from working in the kitchen earlier that day, they looked around, their chef whites seemingly out of place in the urban neighborhood of tall multi-family houses surrounding us. Some looked confused, others skeptical, many exhausted. “Don’t worry,” I assured them. “This is the right place. It’s just this way.” I waved them to follow. We walked around the corner, skirting the property line, still unable to see in. I led them to a gate hidden by ivy, pussy willow, and a dogwood branching overhead. There, Rich was waiting for us. I stepped aside, and he stepped forward.

“Hi, I’m Rich,” he greeted us softly. “Welcome to City Farm. Please come in!” And so, we followed each other through the gate and along the narrow path, which quickly opened up to reveal a vegetable garden oasis in the heart of the South Providence neighborhood. The students gasped in astonishment and surprise. Vegetable beds, greenhouses, potting sheds, winding pathways, and benches dotted the garden. An oak tree towered at the heart of the property, shading a large chicken coop standing below its branches. The students’ apathy dissolved into wonderment.

Rich led us to one of the paddocks where we gathered in a circle. “Welcome,” he began. “This is an urban farm in the inner city. That’s why we call it City Farm. This oasis isn’t mine. It’s yours. It’s this community’s. I invite you to walk around, smell, see, taste, and
interact with everything you can find here. Let’s meet back in 20 minutes to talk about what you’ve discovered.”

And they explored.

Some students separated into small groups while others set out alone, navigating narrow pathways and rows of crops. I eavesdropped a bit, and heard snippets, “this place is incredible,” “look at those chickens!” The students found plants they recognized from their work in the kitchens, and many of them braved to break off a leaf or two and taste it.

Chef talk ensued. “This would be great with the raviolo dish for the chef’s table. Imagine it with the brodo,” one student exclaimed. Less familiar plants received a lot of attention and admiration as well, like summer savory, chickweed, bitter melon, and nasturtiums. The culinary students took turns smelling, tasting, analyzing, and describing through their shared language of flavors and aromas. Many took photos to document and share their experience.

After a while, finished with their explorations, the students sat on the benches or stretched out flat on their backs in the grass. Someone cradled a chicken. The gardens grew quiet. Every student retreated into their own thoughts. Rich called us back. He wanted to talk about the nonprofit organization which managed City Farm and other neighborhood green spaces, with the mission of bringing local food back into people’s lives and to helping to rebuild the community. He and the students then discussed food sovereignty, literacy, and justice, and Rich described some of the challenges of operating an urban farm.

Later, on the bus ride back, the students were quiet. I asked them what they thought about their visit, and was surprised by one of the responses: “Frankly, I’m angry. I’m a junior and I’m just now seeing this. Why aren’t all our classes like this?”

“Why are we just now doing this? Going out into our community? Learning about these issues? Why aren’t we doing more to support them and do all this sustainability stuff?”

It was a good question. I had for a long time been wondering the same thing.

***

As I later reflected on this day myself, a handful of questions came to mind. Why had the students been so awed by the urban farm? They work with food all the time in the kitchen. Is seeing where it is grown so much more impressive? Why was smelling, tasting, and touching the plants such a provocative experience for them? They see, taste, work with, and sense many of these foods in the kitchen every day. Why did City Farm make them so introspective, and why were they so profoundly moved by Rich’s stories of the struggle for food access?

**Global Context**

Environmental scientists argue that the world has entered the *Anthropocene epoch*—a geologic age marked by human activity that is effecting profound changes in climate, mass extinction of species, land transformation through deforestation and over-development, among others (Rackstraw, J., et al., 2009). Such systemic challenges are deemed “wicked” for their complex nature and inherent barriers (Curren & Metzger, 2017). Not addressing these changes suggests it permissible to allow the world’s resources to be depleted and the environment polluted and destroyed. A probable collapse of our ecosystem and society may come to pass in the near future (Klein, 2014; Meadows, Randers & Meadows, 2004; McNeill, 2000; Orr, 1992, 2004, 2016; Rockström, Steffen et al., 2009). To meet these challenges head on, Curren and Metzger (2017) recommend that we respond in part by educating children in sustainability and reforming “…institutions, systems, structures, settings, policies, and practices that structure in many ways and to varying degrees the activities of contemporary life that have
overshot the limits of what nature can bear” (p. 181). Culinary education is one such place where reform is desperately needed since food is one of the most universal needs and food production is one of the most destructive resources on the planet.

**Modern Culinary Industry**

Eating is not simply an individual act of physical nourishment; it is also an agricultural, pedagogical, and social act (Berry, 1990; Sumner, 2008, Heldke, 1992b) deeply entangled in politics, economics, ethics, and social (in)justice. These struggles are reflected and played out across our food culture and systems, including food service industries that are engaged in struggles over fair labor practices, food security, environmental responsibility, nutrition, and food literacy. Culinary education, or the training of cooks and chefs, has also played a significant role in supporting food-related values, practices, and policies that are harmful to people and the environment. At heart, culinary education is deeply hierarchal, perpetuating meritocratic and dualistic thinking, industrial production, and the militaristic structuring of kitchen culture (Deutsch, 2014; Miles, 2007; Woodhouse, 2015, 2016).

This modern culinary paradigm, which first emerged in the European Middle Ages and continues today, is rampant in western culinary education and industries. It was originally envisioned and formalized by Georges Auguste Escoffier—often identified as the “father” of cooking (Mitchell et al., 2013). It was Escoffier who pioneered a strict hierarchy for professional kitchens, reflective of a factory-styled infrastructure typifying Fordism, to keep pace with the growth of mass consumption and mass production which was spreading throughout the western world in the late 19th and early 20th centuries. This hierarchy has come to be known as the *brigade system* (Dominé, 1998; Miles, 2007; Mitchell et al., 2013; Woodhouse, 2015, 2016). Even though it has been suggested that kitchen structures are
presently moving toward more collaborative systems (Hagerty, 2004; Harris & Giuffre, 2010; Miles, 2007), Escoffier’s brigade system persists as the primary organizational model for professional kitchens, culinary education, and kitchen training today where it continues to foster authoritarianism, inequity, and a fixation on mass consumerism (Woodhouse, 2015, 2016).

This way of doing things, where mind and body are separated; where nature and people are detached; where profits and efficiency overtake humanity and responsibility; and where people are reduced to laborers and the Earth to a mere resource, are the kind of unsustainable thinking and causes of the global crisis we face today (Jickling & Sterling, 2017). Stibbe and Luna (2009) agreed, indicting “…social, cultural, and economic” problems are “…undermining the ability of the Earth to support human life…” (p. 13). A new Enlightenment (a new way of thinking and acting) is going to be required to transcend the trappings of the modern era to reach a new paradigm of thought and action which is sustainable for humans, non-humans, and the planet alike.

**Sustainability Education**

To address the global environmental and social injustices plaguing the modern era, Golley (1998) proposed a change in attitudes by “applying ecological concepts more directly to human decisions” (Golley, 1998, p. 228). Like Curren and Metzger (2017), Golley (1998) acknowledged the role of school education, stating “in order to alter our consumptive and destructive patterns of living, we need a different cultural model that stresses maintenance, reuse, cycling of materials, cooperation, [and] mutualism… These concepts must be taught to children by parents and schools” (Golley, 1998, p. 227). Edwards (2005) agreed, and saw education as providing a transitional step where it can “become firmly established within
CULINARY SUSTAINABILITY EDUCATION

existing value structures of societies while simultaneously helping that value structure evolve
toward a more viable long-term approach to systemic global problems” (p. 23).

Disregard for the environment and sustainable practices is often attributed to a lack of
appropriate education. As Orr (2004) asserted “…all education is environmental education”
(p.12). In other words, he points out, the absence of environmental education in student
curriculum teaches students either “…that they are part of or apart from the natural world” (p.
12). Sterling (2001) hoped to address this and other shortcomings to education and sustainability in the modern era by championing sustainability education, which he defined as:

…a change in educational culture which both develops and embodies the theory and
practice of sustainability in a way which is critically aware… [it is a] transformative
paradigm that values, sustains and realizes human potential in relation [emphasis
original] to the need to attain and sustain social, economic and ecological wellbeing,
recognizing that they are deeply interdependent” (p. 22).

My past experience as a culinary student and later as a culinary instructor reinforces my belief
that formal culinary education has historically been deficient in addressing social, economic,
environmental and political sustainability. Potentially, culinary professionals have enormous
influence in each of these areas.

Foodservice professionals and the potential impact of their associated enterprises are
unmistakable. Trubek (2008) drove this home when she described the importance of
restaurants to the public sphere “as a new space for promoting dialogue and marking
distinction” (p. 139). She went on to say foodservice professionals also create “…new ways to
experience and think about food” (p. 139). Then she declared “chefs in restaurants are not just
cooking but are shaping American cuisine as well” (p. 140). With all this potential to foster
change through dialogue, thinking about and experiencing food, as well as shaping cultural cuisine, it seems that foodservice professionals may be in a prime position to perpetuate a culture of sustainability.

**Problem Statement**

Despite such potential to effect positive change, chefs and the broader foodservice industry, including product supply chains, practices, customers, regulators and promoters, are unsustainable in their approach to growing, catching and sourcing food, producing it, distributing it, consuming it, thinking about it, and educating about it (Curren & Metzger, 2017; Edwards, 2010; Flowers & Swan, 2012, 2016; Hawken, 2007, 2017; Julier, 2004, 2008, 2013; Julier & Linderfield, 2005; Klein, 2014; Sumner 2008, 2012, 2013a, 2013b, 2013c, 2015; Swan & Flowers, 2015). Few occupations have as much promise to make such an impact. However, in order to capitalize on the chef’s role in a sustainable society, they must first be educated on how to do so. They must learn about sustainability, how to advocate for sustainability, how to think sustainably, and how to engage in transformative learning to be sustainability. The challenge that lies ahead for any culinary educator is determining how culinary education can be transformed holistically toward sustainability.

**Purpose Statement**

*Being Sustainability*

To address the pervasive and *wicked* issues of unsustainability in the culinary industry, transformation must be rooted in systemic and sustainable change. Sterling (2001) asserted that this cannot happen with education that persists in the contemporary technocratic transmissive learning model which perpetuates dualist thinking, economically driven reductionist mindsets, or even simply, sustainability content. Rather, education *about*, *for*, and
as sustainability is needed both for the learner of any age and throughout society. Instead of existing as a disciplinary subject, sustainability must be about being sustainability (O’Neil, 2015, 2017a). In a restatement of Erich Fromm’s (1995) work, it is the difference between having ways of living versus being ways of living. Researcher Funk (2014) explained that a being perspective is critical to helping people understand what they value “…consciously, semiconsciously, or unconsciously and of what they actually pursue passionately in their lives” (p. 4). Shifting toward such a perspective adds purpose, responsibility, and authenticity to the movement for transformative change.

**Sustainability as a Way of Being**

Present consumption obsessed worldviews have humanity fixated on transitory moments such as the possession, owning, and controlling of things and people (Fromm, 1995). This mindset has societal consequences, as “the norms by which society functions also mold the character of its members… In an industrial society these are: the wish to acquire property, to keep it, and to increase it…” (Fromm, 1995, p. 57). Conversely, ways of being are oriented toward being. Though somewhat indescribable, they are grounded in personal experience and the process of living. Fromm explained being has as a prerequisite “…independence, freedom, and the presence of critical reason. Its fundamental characteristic is that of being active… [from] inner activity [to] the productive use of human powers” (p. 62). Fromm elaborated, “the being mode of existence means to be living, to be interested, to see people, to listen to people, to put oneself in the place of others, to put oneself in one’s own place, to make life interesting, to make something beautiful of life” (p. 63). These are “…two fundamental modes of existence, to two different kinds of orientation toward self and the world, to two different kinds
of character structure the respective predominance of which determines the totality of a person’s thinking, feeling, and acting” (p. 53).

A stark difference between today’s dominant way of being and that of the holistic way of being, based in personal fulfillment, cooperation, and mutual respect, points to the impossibility of both existing concurrently (Fromm, 1995). Sterling (2001) considered being the goal of a sustainable future, stepping away from the status quo modern lifestyle. Such a transition would be transformational for society.

**Transformative Learning Processes**

Tying transformative sustainability theorists Lange (2004, 2009, 2012), O’Sullivan (1999; see also O’Sullivan, Morrell & O’Connor, 2002), and Sterling (2004, 2010, 2011) together, O’Neil (2017a) interpreted being in the context of sustainability as an element of transformative learning theory which is “…conscious[ly] relational and interconnected… focusing on the process and dynamics of learning as change” (O’Neil, 2017a, p. 331). For learners of culinary arts, sustainability must be more than subject matter, it must also be value-based, and personified in both person and institution if it is to transform students and society toward a more ecological consciousness where participative action for change can take place (Sterling, 2001). Shifting socioeconomic structures are pivotal and therefore must be challenged and changed (Fromm, 1995). Principally, the context of this study is to hone in on perturbing the classical industrial structures of culinary arts by infusing sustainability goals, practices, and ways of being sustainability within culinary arts programing in higher education. Just like in the opening story, illustrating sustainability as a way of being would have the potential to be a transformative learning process.
Research Questions

To do so requires exploring culinary sustainability education (CSE) by first critiquing what makes modern culinary education unsustainable and by uncovering facets of the industry needing paradigm change. It also requires identifying where the potential for change lays and what it could (or might) look like. This critique further questions what constitutes sustainability education in both theory and as a transformative pedagogy for fostering ‘sustainability as knowing and being’. The intention of this research is designed to probe deep into culinary education to find its shortcomings. Introducing CSE as a new paradigm of culinary education has the potential to introduce systemic change through sustainably minded chefs who can exercise their agency to make a difference. Such a transformative learning process would foster sustainable ways of knowing and being.

In setting up a series of qualitative case studies, I posed the following questions to determine what a culinary education as sustainability would look like:

- What constitutes a culinary sustainability education and what principles might guide future programming?
- How might traditional culinary arts programming be transformed and operationalized into a program plan for culinary education as sustainability? (structures, relations, goals, practices, conditions)
- What desired outcomes and barriers to this transformation is experienced by learners in a higher education setting?

Focus of Study

This study will focus on identifying potential conditions which may help foster transformative change in adult culinary students, sustainable culinary education, and the
culinary industry. Such research will provide findings to guide the development of sustainable culinary education programming aimed at reorienting the modern culinary industry and culinary education toward sustainability.

**Context of Research**

From my review of the literature, I will be deriving important propositions for CSE which I can later comparatively analyze to my study data. Using case study methodology, the study will have three parts. The first will seek information from established scholars’ points of view in regard to transformative curricula design to assess the propositions derived from the literature review. These scholar informants are program architects and collaborators of the *John Dewey Kitchen Institute* workshop (JDKI) at the University of Vermont (UVM). Data gathered from semi-structured qualitative interviewing will offer insights into the development of a culinary sustainability education program.

The second part of the case study will involve the participants at the JDKI workshop. The focus of inquiry will be on student perspectives and experiences while attending an adult sustainability education program oriented around food. The data will be gathered in two ways, through ethnographic participant-observation of workshop participants as well as semi-structured qualitative interviews. The third and final aspect of the case study will be semi-structured interviews with chef graduates from Johnson & Wales University’s (JWU) College of Culinary Arts, who have already completed an adult sustainability education program as part of their undergraduate chef training and now are working in some part of the modern culinary industry.
Overview of Chapters

Chapter 2 of this research project explores three main areas of secondary research in order to better inform this study. Through a critical postmodern lens, I first analyze modern culinary pedagogy, its influences, and its effects on its patron industry today. Here, I seek to find out, what is unsustainable about modern culinary education? I then explore what the potential for change is and what it would look like. Can the culinary industry be sustainable at all? What are the implications if it can? What is the chef’s role? I then research pedagogy and learning to find out how such change could be instilled through education, concluding the chapter with the necessary foundational underpinnings to form theoretical propositions.

In Chapter 3, I lay out these propositions as well as my theoretical framework. A detailed description of this case study research project is presented, along with analysis and results in chapter four, and findings, conclusions, and recommendations in Chapter 5.

This study will be tempered by the limitations of the research, and potential implications and recommendations for further investigations and application of my findings will be submitted.

Glossary of Terms

*About, for and as sustainability*  
Sterling (2001) used this range to describe sustainability education at both the individual level and the societal level. *About* sustainability is a ‘weak’ or ‘shallow’ form of sustainability which attempts to compartmentalize sustainability doctrine into the present siloed systems of western education. *For* sustainability is a stronger approach because it introduces value bias, with leanings toward sustainable change. Even this level of sustainability is absent of critical and reflective thinking however. Such traits are associated with *as* sustainability. As a transformational paradigm shift, ‘*as sustainability*’, emphasizes process and quality of learning, and is
considered “…creative, reflexive and participative…” (p. 61). It engages both the person, as well as the entire institution.

**Anthropocene**
Present geologic epoch of the Earth, where humans are the prominent driver of change within the Earth System (Rockström, J., et al., 2009).

**Autopoietic**
Self-renewing, self-sustaining, and self-replicating systems (Capra, 2002; Capra & Luisi, 2014).

**Dualist thinking**
Stems from the Cartesian philosophy of Rene Descartes, who theorized there is a separation between the mind and the body. This mind-body dualism asserts cognition as separate phenomena from the terrestrial body and all other matter—a splitting of mind and matter. Results of such a view have pervaded the modern western world where it dominates self-image, learning, education, people, society, business, economies, and nature (Capra, 2002; Capra & Luisi, 2014; Merchant, 2005). Such a worldview diminishes the relationship between the mind and the body, reducing complex and intricate interconnectedness to separate and independent functions. Essentially a form of reductionism, dualist views support the neo-liberal technocratic approaches to consumption-laden production and unchecked economic growth. Terms “Cartesian,” “mechanistic,” and “reductionist” can all be used to describe aspects of this dominant world view (Capra & Luisi, 2014).

**Ecological learning paradigm**
Supports deeper value positions on the purpose of education. Sterling (2001) uses terms such as participative, democratic, co-evolutionary, collaborative, reflexive, process oriented, dialogic, systemic,
**Entanglement**
Replacing the notion of linear causality, it is a way to describe the complex interactions, assemblages, codependences, and webs of relations between different people, groups, society, humans, nonhumans, nature, and objects in political ecology (Moragues-Faus, 2017; Ogden, 2011; Peet, Robbins, & Watts, 2011; Rocheleau, 2008; Robbins, 2012; Sundberg, 2015).

**Fordism**
Organizing principle that emphasizes assembly-line production to create factory efficiencies by reducing roles and tasks of workers to specialized functions (Johnson, 2000). Considered a type of *scientific management* practice, like in the case of Taylorism, it helped birth the beginnings of consumerism driven economies which “…converted gains of mass production into mass consumption” (McNeil, 2000, p. 316). Critiques of industrial capitalism and Cartesian dualism reveal the practice as exploitative of workers’ agency and rights (McNeil, 2000; Johnson, 2000).

**Intrinsic views of education**
Classically antithetical to instrumental views of education which provide practical reasons for learning. Intrinsic views value education “…as an end and good in itself, as having inherent value and meaning” (Sterling, 2001, p. 25). Intrinsic views stress process over
purpose and product and need to be examined to “…fashion a more ecological and democratic educational paradigm” (Sterling, 2001, p. 26).

**Mechanist**

Belief that humans, nonhumans and nature as a whole are like parts to a machine - simple constructs lacking any intrinsic connection or relation to each other, other than by function. Such beliefs reduce entities to their component parts, devaluing and objectifying them. Mechanistic perspectives stem from Cartesian dualist worldviews (Capra, 2002; Capra & Luisi, 2014). Mechanistic views are dominant throughout the world today, where societies are valued based on economic labor markets, where people are objectified, and where nature and non-humans are considered a resource to capitalize on (Capra, 2002; Capra & Luisi, 2014).

**Meritocracy**

A system which facilitates competitive gains for those who are more competent to perform tasks or do well on exams or under pressure. Though advocates for this belief system claim it provides a fair playing ground to gain achievement, it actually does the opposite by perpetuating and reinforcing classism, sexism, racism, and further injustice for other minorities (Harris & Guffrey, 2015).

**Modern culinary arts**

With respect to ongoing deliberations between scholars as to the differences and definitions between the descriptors *modern*, *modernity* and *modernism* (McGuire, 2014), in this work, modern will be used to describe culinary arts education, the culinary industry, practices, and culture originating from the European Middle Ages up to contemporary times.
Neoliberalism  
Ideaology that society should be shaped by the ever-growing competitive capitalistic free market and that individuals should be self-reliant. It supports extensive economic liberalization policies such as privatization, fiscal austerity, deregulation, free trade, meritocracy, and smaller government, prioritizing corporate profit and progress over people, non-humans, nature, fairness and justice (Collins & Bilge, 2016; Harvey, 2007; Klein, 2014; Martusewicz, Edmundson, and Lupinacci, 2015; Jickling & Sterling, 2017).

Participative  
Characteristic of an ecological worldview, participatory signifies learning which is collaborative, coevolutionary, emergent, and requires critical thinking and other necessary skills for engagement. Such a philosophy is compatible with problem-based learning, pragmatism, practice, and constructivism.

Postmodernism  
Theory that is commonly characterized as holding a skeptical or ironic view of modernism, reason, universalism, essentialism, and other concepts from enlightenment rationality which maintains a power-over set of relations (Best & Kellner, 1997; Briton, 1996; Collins & Bilge, 2016; Esteva & Prakash, 1998).

Reflective  
Process of looking back to analyze and evaluate experiences. Critical reflection involves the same process but through a lens of critical doubt and skepticism (Freire, 1970).

 Reflexive  
Process of active critical reflection taking place in the moment. This allows for responsive adjustment and self-awareness of positionality while in the process of teaching, learning, or undergoing a process as
CULINARY SUSTAINABILITY EDUCATION

a researcher (Creswell & Creswell, 2018; McGregor, 2018; Merriam, 2009; Sterling, 2009).

**Relational**


**Resilience**

Ecological and dynamic process which positively adapts and reacts to substantial adversity (Luthar et al. (2000; Sterling, 2001), resilience is often judged as a boundary concept, because it considers social-ecological systems together as a key component to a more sustainable world (Olsson et al., 2015; Sterling, 2001). Sometimes contested for its passiveness (Klein, 2014; Joseph, 2013; Luthar, Cicchetti & Becker, 2000; MacKinnon & Derickson, 2012; Olsson et al., 2015), the term endures as a testament to the realities social and ecological systems face in an ever more globalized world.

**Rhizomatic**

Metaphor depicting random and relational connections and nodes existing in nature based on relationships which can grow to become potentially emergent and entangled. Political ecologist Ogden (2011) bases her research off the concept, while crediting Deleuze and Guattari (1986, 1987) for shaping her approach. “Deleuze and Guattari’s spatial philosophy offers a way of theorizing landscapes as complex and changing assemblages of relations that dissolve and displace the boundaries of nature and culture” (Ogden, 2011, p. 29). More recently, O’Neil (2018) applies the concept in her *rhizomatic autobiographical narrative* research methodology, where she used it
to describe the non-linear path the “…rhythms and sequences of [her] transformative narrative…” (p. 369) can take.

**Taylorism**

Following Fredric Taylor’s principles of *scientific management* which analyze and synthesizes workflow in labor productivity to achieve “…enormous productivity gains” (McNeil, 2000, p. 316), in mechanized factories with choreographed workers. Taylor equated the human body to a machine and would conduct time and motion studies to systematically increase the effectiveness of workers in factories (Johnson, 2000).

**Technocentric**

Contrasting with ecocentrism, technocentric ideologues believe technology and science can answer all questions and solve all the world’s ills (Sterling, 2001).

**Technocracies**

Elite technical specialists who drive and control procedures and policies over purpose, process and holistic frameworks. Postman (1992) explains further “in a technocracy, tools play a central role in the thought-world of the culture” (p.28). Learners too are considered tools, enduring a transmissive education aimed at fulfilling technosocietal efficiency needs.

**Transactional education**

Form of *second order learning* (O’Neil, 2015; Sterling, 2001), transactional education is considered a constructivist approach believing that learning is built through interactions with people and experiences (Jickling & Wals, 2008). As a second order learning concept, the theory falls short of facilitating transformative change.
because it remains part of the “…dominant dualist and reductionist way of teaching and learning—a weak sustainability” (O’Neil, 2015, p. 317).

**Transformative learning**

Theory of learning which has been widely researched in recent years (Lange, 2013; Taylor, 1998, 2005); it refers to a phenomenon when a learner undergoes a process of change where previously unexamined assumptions are called into question. Morrell & O’Connor (2002) explain, “transformative learning involves experiencing a deep, structural shift in basic premises of thought, feelings, and actions. It is a shift of consciousness that dramatically and permanently alters our way of being in the world. This shift includes our understanding of ourselves and our self-locations and our relationships with other humans and with the natural world. It also involves our understanding of power relations 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, peace and personal joy” (p xvii).

**Transmissive**

Component of Freire’s (1970) *banking education* concept, it refers to the treatment of education as being deposited from the educator to the learner. The concept illustrates the reduced role of both parties in the education process, where learners are considered ignorant and devalued in order to validate the educator. This undermines the spirit of inquiry and co-learning and ignores the learning educators gain from their students (Freire, 1970). As a whole system, modern western educational structures today are considered transmissive, creativity suppressive, and anti-participative—fundamentally, teachers teaching *at* students.
Wicked Complex social problems that are entangled and have no easy solution. Buchanan (1992) explained that they are “…ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing” (p. 15). Antithetical to sustainability, wicked problems require comprehensive, multi-level, systemic solutions which “…generate further solutions” (Sterling, 2009, p. 4). Such potential solutions to wicked problems are called positive synergies.

Overview of Theoretical Framework

In considering the issues of unsustainability in culinary education and the culinary industry, I have come to realize many of my leanings and judgements fall in line with a critical postmodernist paradigm of thought, and importantly, implied action (Breunig, 2005; Sterling, 2001; Freire, 1970; Kolb, 1992; Frisk & Larson, 2011; Meadows 2008). Applying this epistemological lens allows me to critically examine modern culinary education to identify supposed universal truths and dualities which may be at the root of unsustainable practices and belief systems. In regard to action, it is synonymous with culinary arts and well rooted in Dewey’s (1938) theory of experiential education, where learning occurs by doing and every experience informs the next, and where knowledge and doing are tied together (Belliveau, 2007). In his career, Dewey (1938) had argued for a theory of experience, where he famously warned, “the belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative” (p. 25). Breunig (2005) considered such intentionality in experiential education would be complementary to a critical theoretical lens since critical theory is deficient without action and experiential education must be well conceived with purpose and intent if it is to be effective (Dewey, 1938).
Illuminating injustices and shortcomings perpetuated by false truths and dualities, and then take action to eliminate or prevent them, may still fall short if such actions remain unguided. To address this charge, transformative sustainability education praxis, as a tool, can provide guidance in transforming old, unsustainable ways of doing and thinking, into new ways of action and knowing both in the individual and throughout society (Sterling, 2001). Using an ecological perspective to transformative sustainability education affords a relational approach to teaching and learning complementary with systems thinking and living learning concepts (Bateson, 2002; Berkes, 1999; Capra, 2002, 2007; Capra & Luisi, 2014; Goleman, Bennet, and Barlow, 2012; Lange & O’Neil, 2016; O’Neil, 2015; 2017a, 2017b, 2018; Sterling, 2001).


Figure 1 illustrates my theoretical model where experiential education’s pathway to doing is filled with comparative paths of action: the status quo of modern culinary education opposite to the changing course of transformative sustainability education. This framework is designed to discover if a convergence of the two could constitute real-world and immediate
transformative change through applied action. Figure 1 also illustrates the role of my critical postmodernist lens in examining modern culinary education to compare it to transformative sustainability education as viewed through a relational ecological lens.

*Figure 1. Theoretical Model*

In Chapter 3, I unpack the component parts of my theoretical framework, explaining my critical postmodern lens and how it is applied to assess modern culinary education. I also illustrate the various ways critical theory can be applied to culinary pedagogy. Further, I explore the potential for action through experiential education’s doing, and I view from an ecological perspective the role transformative sustainability education can play in guiding a new paradigm of thought and action. Lastly, I compare and contrast modern culinary education with transformative sustainability education to identify challenges to sustainability and potential solutions.

Throughout Chapter 2, modern culinary education will be analyzed through a postmodern lens and the potential of a sustainability educated chef will be established. Further, pedagogies in culinary arts, sustainability education, and transformative education will be
appraised. This analysis will reveal numerous connections between the different subjects of study, including associations between systems theory and food systems; transformative learning and a paradigm in need of sustainable change; ethical and value considerations in food production; foodmaking as a unifier of the mind and body; and culinary arts practice as a vehicle for transformative sustainability theory to take action (Meadows, 2008). The literature supports the creation of ten propositions essential to the development of a CSE program.

**Significance of the Study**

The overarching significance of CSE is to inform culinary arts educators of the shortcomings to sustainability in their trade, to project a vision for sustainable change, and to provide the pedagogical guidance to transition programs to help ensure such a vision is achieved. It offers an approach for integrating sustainability goals and practices into teaching and learning, ultimately positioning the food industry profession to contribute to a more social and environmentally just future. More specifically, the findings of this study can contribute to three broad areas: the features of domination paradigm in the culinary profession; food justice and sustainable food systems; and the practice of transformative learning (TL) in culinary education.

Within the culinary profession, CSE will be able to provide insight to the training of culinary students that become future chefs and managers, food scientists and nutritionists, supply chain managers and policy makers, or any other culinary-birthed career which shapes the food system. Given the injustice and inequity which plague culinary education and the culinary industry, this study may contribute to new practices for food justice within a sustainable food system. Further, this research explores the traditional paradigms of culinary education to reveal and rebuke the norms of injustice and inequity which plague it and the
culinary industry, reinforcing an autopoietic negative feedback loop. To that end, this study potentially contributes a novel approach to the sub-field of transformative sustainability education.

To contribute to deep systemic sustainable change, chefs need to be educated in culinary sustainability goals and practices. They need to value them, and they need to embody them in practice and belief, which is best described by Sterling (2001) as learning as sustainability. Chefs who embody the as sustainability concept are more than just cognizant of sustainability topics. They learn to value and advocate for sustainability. They learn to embody sustainability in their everyday practice and philosophy, and as a result, can potentially transform the industry through their procurement of sustainable products, their management and cultivation of human and nonhuman relationships, their educating and advocating toward social and ecological justice, and by their application of various other principles of sustainability to provide opportunities for present generations without burdening future generations.

**Positionality**

I am an able-bodied White heterosexual male living in the United States, and I am married and blessed with two children. I have a good middle-class job. How I am positioned to address this problem and propose solutions is engrained in who I am and where I come from. I grew up somewhere between a lower to middle-income family; frugal and abstemious in my upbringing. We always had food on the table, so I never really felt poor, just not rich or well-off. Navigating Central Florida’s somewhat diverse, urban environment and grade school system, I was able to make some friends, though I was never popular. I often consider this a blessing as it turned me to thinking forward, about my future, and about a career in cooking.
In a vocational high school’s culinary arts program, I charted a path of hard work and dedication, earning enough work experience, scholarships, and enough loans, to attend JWU’s College of Culinary Arts in Providence, Rhode Island. The first in my family to attend college, I was inspired to explore food, cuisine, and culture as I worked through my studies. I enjoyed stints abroad in England and Switzerland, learning international cuisine and gaining multicultural friendships. Many of these experiences shaped a multicultural, worldly, and accomplished self-view.

As I went on to pursue my master’s degree, I worked for my university, where I taught community service modules to undergraduate culinary students, including food insecurity, corporate citizenship, and other sustainability and food justice topics. In writing and teaching with this innovative experiential curricula, I took students throughout the Rhode Island area to gain experience: including working soup lines at The Amos House; packaging and delivering meals for the elderly with Meal on Wheels; and restoring run down community spaces with Rebuilding Together. These were just a few of the many community-based initiatives I experienced along with my classes of students.

It occurred to me at that time that in my culinary training, I had never been introduced to such important sustainability related topics. Before taking my course, neither had my students. This experience inspired me to become an educator positioned at the intersection of food, environmental, and social justice. This brought my career path to The Genesis Center—a Providence-based non-profit organization dedicated to helping immigrants and refugees establish themselves in the United States. As their head chef and culinary arts teacher, I was charged with culinary workforce development; training mostly minorities to provide them with marketable skills and job prospects. The dynamics of working in this capacity made me
critically aware of my race, sex, age, and long held stereotypes. It also became apparent to me from my experiences to this point that my young white male identity could be a hindrance to the effectiveness of my teaching and an obstacle I had to invest time in breaking down in order to gain my students’ trust. This newly gained perspective better informed how I view the world, work with others, and apply my voice.

Understanding positionality and being reflective and reflexive when analyzing who I am and what I stand for is of great importance to a researcher (Sikes, 2004). In my current faculty position at JWU, I must carefully consider positionality because my work informs my inquiry. After returning to my alma mater, I joined a team of faculty to create the university’s Wellness & Sustainability Concentration. This inevitably positioned me as an insider since I authored and teach half the courses in the program. I have been deeply passionate and invested in it. Concurrently, as a Certified Executive Chef with the American Culinary Federation, now an associate professor at the university, and a popular role model to students, I must be mindful when examining feedback from my graduates in industry that I am not being pandered to by those who admire my position of power in the culinary hierarchy. Due to the traditional models of culinary education and industry practice today, which continue to mirror the meritocratic brigade system, students still vie for admiration from their chefs by demonstrating their abilities and value. I experience this routinely as students I don’t even know greet me in the hall, “good morning chef;” as my students seek my opinion of their foodmaking; their daily production scores; and their prospects of a successful career in the industry. I must be watchful of this dynamic because it is one of the contributing drivers of culinary practitioners’ motivation. In other words, I need to make sure students are learning how to apply principles of sustainability, not principles of pleasing their head chef.
I also need to be aware of my critical postmodernist epistemology when observing and interacting with research subjects. Critical postmodernism is antithetical to positivism, which is a dominant paradigm of thought in western education. This may place me at philosophical odds with research subjects who carry this ideology, as well as with overseeing institutions and learners resistance to change. I need to remain steadfast in being reflexive to account for my own views while collecting information during ethnographic participant-observation and qualitative interviewing. Because my critical postmodern views can be considered opposed to classic, traditional, industrial, contemporary, modern views, I also have to be cautious of institutional norms in modern culinary education which dramatically clash with my philosophical views. Outward objection or criticism of status quo frames of thought can be disruptive and introduce challenges to my study which I want to avoid.

The foodservice industry today has an enormous impact on the environment and resources. It needs culinary and management professionals who have the skills, knowledge and value systems necessary to move toward a more sustainable future (Jang, 2016). Since the western grade school curriculum of the modern era is devoid of comprehensive ecological sustainability topics (Sterling, 2001; Orr, 1992, 2004), it is even more critical for adult culinary education programs to reorient themselves toward sustainability, not only with subject matter, but in practice through embodiment. Such transformative change in culinary pedagogy has the power to result in immediate actionable change in the real world. As practitioners addressing real world problems in the present, chefs can make a difference in their communities, food systems, and in the behaviors of society.
Summary

In this chapter, I provided a snapshot of the challenges humankind faces as we enter an unprecedented age in Earth’s history—the age of the Anthropocene. Despite the opportunities and privilege chefs and other culinary professionals have to leverage a platform of sustainability, the industry they operate in as a whole, falls far short. Problems in the exploitation of natural resources, uneven distribution of food, unjust or unfair work practices, and power struggles, are only some of the unsustainable practices which commonly occur within the field. I position my research questions within the larger question of how this paradigm of unsustainability is to be transformed into one of sustainability?

This research has potential for designing CSE. In order to complete this study with transparency and a high level of integrity, I also considered my positionality in relation to the subject of study. My motivations and alignments, including my critical postmodern epistemology were disclosed in order to account for potential impact on my study.
Chapter 2. Literature Review

Story 2. Allegiance to the Masters

After gaining industry experience working at Michelin starred restaurants in England and Switzerland, followed by five years leading a workforce development program at a non-profit institution in the city of Providence, I returned to my alma mater as a faculty member. Many of the culinary faculty who had taught me as a student, remained. I was excited and nervous to join them. Nervous because I still held their mastery in high esteem and considered them to be an elite group. Excited because I wanted to be like them... someday.

It wasn’t an easy transition. I was a chef, in title and experience: I had served as head chef in my recent stint at The Genesis Center, and I was planning to pursue my certified executive chef credentials with the ACF. Still, it was strange to think of myself as equals to my former teachers.

I was tasked with shadowing Chef Mullaney as he taught the freshman class, Fundamentals of Foodservice Production. Eleven years earlier, Chef Mullaney had been one of my first chef instructors. Now, I fell into a familiar role. Like a subordinate, I hung onto Chef’s every word, taking notes on his teaching style, course production tips, and the adages that he shared with his students. The students communicated comfortably with me, seeing me as a chef’s teaching assistant, or a bridge between Mullaney and them. I certainly was in terms of age and experience in the field.

A couple weeks into the course, Chef Mullaney and I left class and stood waiting for the elevator. As the door opened, he invited me to enter first. “Thank you, Chef.” I automatically responded.

“Please Branden, call me Frank. We’re colleagues now,” he said.
That blew me away. I couldn’t call him that! I could never call Chef Mullaney anything other than Chef Mullaney. It felt so wrong, even after years of working in bustling first-class European restaurants and serving as a head chef for five of those years.

“I don’t know if I can do that,” I confessed.

A few years passed, and I of course moved on to teach my own classes and grew comfortable as a peer with the chefs who had once been my teachers. One spring afternoon, I was hosting a barbeque at my house for the officers of the Cooking Asia Club, a student organization I had been advising since shortly after my hiring. This was an end-of-the-school-year annual tradition where the students brought dishes or cooked at my place and played games in the backyard. Late into the party, a few of the club officers and I found ourselves assembled at my kitchen island, talking and snacking the hors d’oeuvres that remained.

“So, chef,” Steve, the graduating club president began, “I’ve known you for four-years now. Chef Seyfarth, with whom I worked on the Ming Tsai show last summer, told me I can call him Todd. Can I call you Branden?”

Lisa, the club vice-president, gasped. The club secretary, Karen, answered before I could even process the question. “You call him chef for life! Till the day you die!” she said.

***

I have often wondered where such allegiance comes from. What makes it hard to consider myself equal to the masters who taught me? What makes me cringe when a student says my first name? Why, when Steve the student mentioned Todd the chef and teacher by his first name, had I no recollection of who he was talking about, even though I know Todd really well?
Overview

This chapter presents the objectives of the literature review, provides a critique of modern culinary education, lays out a vision for culinary sustainability education, and provides a summary of pedagogies and learning theories relevant to this study. These areas of research will be summarized to establish an investigatory base of evidence for this study. It will enable me to identify a theoretical framework for my case study research project. It will also provide one basis for arriving at a vision, or rather propositions, for CSE. Appendix A provides a map of the literature reviewed in this chapter.

Objectives

It is well established that sustainability needs to become a major area of emphasis in education today (Jickling, Sterling, Orr & Sterling, 2017; Sterling, 2001; Orr, 1992, 2004, 2016). Issues related to the planetary crisis, or what some call, The Long Emergency (Kunstler, 2005; Orr, 2016) must be taught in all disciplines for this generation and those who follow to move toward a more sustainable future. Klahr (2012) postulates “over the course of the next few decades, every academic discipline will have to respond to the paradigm of more sustainable life practices” (p. 19).

As a case in point, the demand for sustainability concepts in culinary education has been growing steadily in recent years, mirroring sustainability trends in the foodservice industry which have dominated the National Restaurant Association’s annual trends surveys (National Restaurant Association, 2018a, 2018b). Industry leaders expect it to be the most important menu driver over the next ten years (National Restaurant Association, 2015). As a result, programs have emerged from colleges and organizations in attempts to capitalize on this space in the adult education market (Brennan, 2016; Farm, 2018; Harvard, 2018; Monacel,
2015). Sustainability programs at Tufts Friedman School of Nutrition, The University of Wisconsin, Culinary Institute of America, The University of Virginia, and New England Culinary Institute, are some examples of higher education institutions experiencing growth in this space. Even at my institution, JWU, a successful Wellness & Sustainability Concentration was launched in 2011 for Foodservice Management Bachelor Degree students which was popular enough that course sections doubled by its second year. Due to prevalent enrollment, and the prospective market growth in sustainability in food industries, I, myself, am presently developing a Bachelor of Science Degree in Sustainable Food Systems with multiple specializations, including *culinary sustainability, policy and advocacy, supply chain management*, and *public health*, among others. The prevalent institutional support for such programs, combined with industry demand and student interest, provides evidence that there is a growing need for culinary professions to step up to sustainability.

In asking what could constitute a culinary sustainability education, I had to first find out what it was about the way culinary education is taught today which might make it unsustainable, and what the potential implications of a culinary sustainability education could mean for a chef. This led to the first thread in my literature review: a critical assessment of modern culinary education and its reverberations throughout the culinary industry. In the second thread, I present the importance and potential of a chef’s role in a more sustainable future, and I project a vision of sustainability for culinary arts. My third thread reviews key research in pedagogy and learning to layout the groundwork for applying culinary sustainability education to teaching and learning. Taking each thread into account, I will deduce from the literature a list of propositions to guide in the design and implementation of a
CULINARY SUSTAINABILITY EDUCATION

CSE program. These propositions will prove to be a major point of interest for my research study.

**Thread 1. Critique of Modern Culinary Arts**

**Master/Apprentice Ideology**

Schiro (2008) examined four curriculum ideologies: The *scholar academic*, the *social efficiency*, the *learner centered*, and the *social reconstruction ideology*. He considered ideologies to be “…a collection of ideas, a comprehensive vision, a way of looking at things, or a worldview that embodies that way a person or group of people believes the world should be organized and function” (p. 8).

Since the Middle Ages, formal culinary training and education has followed what Schiro (2008), would categorize as a type of scholar academic ideology. In this ideology, learners submit to a transmissive learning format from scholar to learner. Woodhouse (2015) affirmed this by tracing master/apprentice pedagogy back to culinary guilds in medieval Europe, where apprentices would observe, apply, and repeat technical tasks mechanistically to exacting specifications. In the modern culinary industry tradition, this has continued as a master/apprentice relationship—where the master holds the trade knowledge (and power), and the learner, who seeks the knowledge, gains experience through skill building and acculturation (Miles, 2007; Woodhouse, 2015, 2016). This antiquated system continues to permeate formal adult culinary education. The impact is perpetuating patriarchal structures, inequalities, competition and power struggles, meritocracy, sexism, machoism, and role reductionism (Harris & Giuffre, 2010a, 2010b, 2015).
**Brigade System**

The traditional master/apprentice hierarchy in culinary arts is part of what is known as the *brigade de cuisine*, or just simply, the *brigade system*. Its development has been attributed to Escoffier (Dominé, 1998; Escoffier, 1987 [no relation]; Miles, 2007; Woodhouse, 2015, 2016), a methodic organizer, food writer and French chef who lived in the latter half of the 19th century and early part of the 20th century. According to Escoffier (1987), “clearly, Escoffier was influenced by the works of Fredrick Taylor” (p. 53)—a theorist who pioneered a scientific management system which, choreographed “…each laborer’s motions…” (O’Sullivan, 1999, p. 316) in order to achieve “…enormous productivity gains…” (McNeil, 2000, p. 316). In Escoffier’s system, the role of various cook positions in a restaurant or other food service settings was defined, reduced, specialized, and siloed for the business to run more efficiently, like a machine or factory (Escoffier, 1987; Miles, 2007; Woodhouse, 2015).

This industrialized and modernized design also clearly established rank and power in the kitchen, including that of the master and apprentice positions (Brown, 2005a; Woodhouse, 2015, 2016). In the time of Escoffier, the western world was experiencing a powerful shift toward industrialization, Fordism or factory assembly line organization, and economic integration (McNeill, 2000). A fixation on mass consumption and mass production overtook and reshaped industries and societies throughout most of the world. Among the changes, society and family dynamics were reshaped, the environment was objectified and exploited, the seeds of consumerism were planted, and the value of the worker was evaluated based on competitive specialized skills, efficiency, and conformity (Escoffier, 1987; McNeill, 2000). Escoffier adapted this modern approach to organize and increase productivity in the kitchen; to feed more people with more efficiency; to turn the kitchen into a fine-tuned machine.
CULINARY SUSTAINABILITY EDUCATION

(Escoffier, 1987). The notion that kitchen workers must be efficient, obedient, and high performing “…to the fullest extent possible for their own and their company’s highest priority” (p. 54), helped perpetuate growth, demand, and in turn, labor force need for skilled cooks who could perform in such a system.

Monarchical System

Escoffier’s system to teach, train, and enculture learners in culinary arts draws many parallels to Schiro’s (2008) scholar academic ideology. Many of the likenesses are uncanny. Both have a system of initiation of their learners into their discipline. Both impart the teacher’s way of thinking and feeling about their subject onto their learner. Both construct lessons and curricula which reflect the subject—combining theory and practice (pragmatism). Both also employ a hierarchical monarch community where the scholar academic rules the roost as a scholar-king, much like the chef does the kitchen. Like Escoffier himself, where the French press would call him roi des cuisiniers et cuisinier des rois (king of chefs and chef of kings) (Brown, 2005a; Claiborne, 1970)—though the owner of this designation is sometimes contested (Escoffier, 1987). Similarities to The Divine Right of Kings also exist in the kitchen, since the chef is infallible, unquestionable, and his or her authority is wholly absolute. To challenge the chef in the kitchen would be unthinkable, constituting a sacrilegious act (Escoffier, 1987). Both the chef and Schiro’s (2008) scholar academic evaluate knowledge through a competency-based assessment they deem befitting, be it written tests for the scholar academic, or a practical bench test for the chef in training (Brown, 2005a, Woodhouse, 2015, 2016).

The virtues of the scholar academic, says Schiro (2008), is creating experiences which “…translate a discipline” (p. 18), and assimilate the learner “into the discipline by both
teaching them the discipline’s knowledge and enabling them to think, behave, and feel as members of the discipline“ (p. 18). Despite this effort at inclusion however, the ideology is still rank-and-file, rife with power dynamics, indoctrination of learners, and historically abusive and exploitive (Escoffier, 1987; Harris & Giuffre, 2010a, 2010b, 2015).

**Patriarchal Command**

The monarchical system’s supposition that a *chef is king* also parallels patriarchy. O’Sullivan (1999) defined patriarchy as “…a system of power in which men dominate” (p. 136). Though this is the dominant culture of our time, historical evidence suggests this is not an inherent feature of humankind. There were “…no signs of sexual inequality or dominance” (p. 136) in Paleolithic and Neolithic societies. Male gender dominance, privilege, power, and violence are attributed to modern historical structures. They draw from the Judeao-Christian patriarchy “…stemming from worship of a father god” (p. 136). It is suggested such domination hierarchies do not exist in nature, but instead, *actuation hierarchies* occur which extend potential opportunities for organisms (Eisler, 1988; O’Sullivan, 1999). O’Sullivan links modern, capitalistic societies with repressive industrialized work-life, and stress-induced domestic violence in the home. It is well documented that similar stress-induced violence has been commonplace in the culinary industry historically; chefs would verbally and physically abuse their workers as far back as the Middle Ages and potentially much earlier (Escoffier, 1987). O’Sullivan (1999) ultimately indicted patriarchal structures for the injustices inflicted upon children, and especially women, by men. Found throughout our “…social, cultural, and economic institutions” (p. 137), human dominator dynamics have continued to be successful in permeating every facet of the modern world—including that of the culinary industry.
Gender

In a study of 33 female chefs, Harris and Giuffre (2015) explored gender inequity in the culinary profession. They determined that despite the profession’s recent transition from a servant class occupation to that of cultural idol, the industry continues to foster a culture of deep inequality among sexes. In describing the classic stereotype that cooking is a task performed by women caretakers at home (Adler, 1981; Julier, 2013; Julier & Lindenfeld, 2005), Harris and Giuffre (2015) presented the phenomenon as precarious masculinity. This describes the need professional chefs have to “to distance themselves from the unpaid, and often underappreciated, food work produced by women in the home… in order to retain and increase the social status provided by their work, and by extension, themselves” (p. 190). Julier and Lindenfeld (2005) explained such issues of power and position are reinforced throughout structural and institutional conditions. In the home, women cook because it is their societal role. In the home, men cook for fun. They quoted Adler (1981) to drive home the point:

Dad’s cooking exists in evident contradistinction to Mom’s on every level: his is festal, hers ferial; his is socially and gastronomically experimental, hers mundane; his is dish-specific and temporally marked, hers diversified and quotidian; his is play, hers is work. Each of these ideal oppositions is reinforced by the real behaviors of male cooks (p. 51).

As male professional chefs continue to push away from these social expectations of domestic gender roles in the kitchen, Harris and Giuffre (2015) acknowledged that it may not be men chefs’ intention to consider women in such a way, but the realities of the industry, compounded by perpetual aggrandizement in chef status, grossly point out the structural inequities, despite anyone’s intent. To this point, they further illuminate the dichotomy
between low-pay, low-status positions held mostly by women in food preparation, like that of a cafeteria worker, to that of “high-status jobs like head or executive chef” (Harris & Giuffre, 2015, p. 4), which are male dominated.

**Class**

Julier (2004, 2008, 2013) and Heldke (1992a, 1992b, 1992c) have long recognized disparities in food and social spectrums. Heldke (1992b) has asserted “…transformative changes are needed to shift the structure of relations away from political systems which favor white, western, wealthy men at the expense of women, ‘non-westerners,’ people of color, and the poor” (p. 302). Dortch (2014), in her survey of career and technical education in the United States, revealed implicit classism with the First Morrill Act of 1862, which “…supported the development of the current system of land-grant colleges to teach agricultural and mechanical arts to the ‘industrial classes’” (p. 1). In reviewing survey data on graduation rates between various classes of learners in public high schools to those of career and technical schools, Dortch reaffirmed that state-sanctioned environments were built on performance standards and tailored assessments that favor white males over others.

Heldke (1992a, 1992b, 1992c), who drew on critical and feminist theories in all aspects of food, attributed such bias to Cartesian dualism that separates knowing activities or “head work”, from doing activities or “hand work”. She claimed a causal relationship, expounding “this philosophical emphasis in turn supports and is supported by class, gender, and race bias against those who engage in physical labor” (1992c, p. 204). Such dichotomies run deep in everything culinary—from the advent of the trade, to the modern structure of the industry, education processes, and state-sponsored supply of a workforce.
Explaining instrumentation in his social efficiency ideology, Schiro (2008) helps to see culinary training as fulfilling a societal need for foodservice workers. Meredith (1860) captures this in her whimsical poem:

We may live without poetry, music and art;
We may live without conscience and live without heart;
We may live without friends; we may live without books;
But civilized man can not live without cooks… (p. XIX).

Despite the light-hearted and warm tone, this ideology is realized in a cold manner. Schiro (2008) explained that learning is distilled down to the activities students can perform, setting the stage for performance-based outcomes. This process ignores the well-known human dynamics of teaching and learning, the potential for engaged pedagogy and agency, and results in stiff curriculum and assessment dogma (Hegarty, 2004; hooks, 2010; Wheelahan, 2015; Woodhouse, 2015, 2016). Even the term “civilized man” in Meredith’s (1860) poem is a tell which signifies views of difference, classism, racism, scientific positivism, and progress, carried over from the Victorian era to the Modernist era (Kennedy, 2005). In sum, this reinforces competitive meritocratic power relations in the field, which Harris and Giuffre (2010a, 2010b, 2015) asserted, places women and other minorities at a disadvantage.

The social efficiency ideology is obsessed with efficiency and value in not only curriculum design, but in producing as many workforce laborers in as little time and as cheaply as possible—another factory mindset in education (Schiro, 2008). This has historically been the ideology of culinary training schools, whose similar goal has been to produce as many trained graduates as fast as possible, to satisfy their student “customers” or “clients” (implying transactional education), to keep culinary industry partners supplied, and keep the economic
machine running (Hegarty, 2004). Dortch (2014) explained that career technical education programs are part of the nation’s workforce development system by design, aimed at reducing unemployment and associated economic and social ills. Dortch expounded vocational education was once “…termed ‘vital to national defense and prosperity’” (p. 1).

Similar to Freire’s (1970) transmissive banking model of education, Schiro’s (2008) scholar academic ideology mindset suppresses critical thinking and knowledge ownership in students, offering the least potential for transformative learning and change where it is needed most (Hegarty, 2004; hooks, 2010; Deutsch, 2014; Freire, 1970; Woodhouse 2015, 2016). According to Dortch (2014), further criticisms charge that core standards associated with vocational education programs which emphasize skills learning over theoretical learning, like in the case of culinary arts education, remove creativity and restrict the time and resources students need to pursue other educational opportunities. Such students tend to take paying jobs out of high school with lower career prospects compared to those who attend college.

Wheelahan (2015) affirmed vocational education today is a “key way in which social inequality is mediated and reproduced because it excludes students from accessing the theoretical knowledge they need to participate in debates and controversies in society and in their occupational field of practice” (p. 750). Dortch (2014) noted that such training is also often criticized for not preparing students for later growth within their career field. Principally, Wheelahan’s (2015) assessment of modern vocational education matches the dynamics of the social efficiency ideology framework. She concluded it must change if we are to teach students how to think for themselves and afford them active agency in the world—two key ingredients for nurturing autonomous change agents.
Race & Colonialism

Gender and class are not the only social injustices present in culinary arts. Systemic, implicit, and institutionalized racism continues to bring about important barriers to an equitable and sustainable world. O’Sullivan (1999) found the seeds of modern racism buried in the “…historical specter of colonial legacies” (p. 149), where to this day, oppression based on difference continues. He stated, “this belief system leads to dominance, subjugation, slavery and all manner of human violence” (p. 149). Indeed, the origins of the chef proves no exception. As early as the fourth century BCE, most, if not all, were slaves and masters of fellow slaves (Escoffier, 1987). That’s not to say that only race played a role in the kitchens of yesteryear, but Harris and Giuffre (2015) demonstrated race plays a role today in kitchen culture and in social expectations “…about who is or should be considered a great chef…” (p. 46) as well. O’Sullivan (1999) explained that racism derived in part from colonization, at the point of contact, and continues historically. As a result, western culture has poisoned much of the world with its exploitive, domineering, and dualistic worldview which marks others by difference (Esteva & Prakash, 1998). Such a view objectifies nature, communities, and individual people. Few western paradigms illustrate this more than the industrialized food system and the scientific and capitalistic rationalization behind it.

In their postmodern assessment of the effects of the industrialized food system on humans and their communities, Esteva and Prakash (1998) suggested “anything that can be eaten is an object of power” (p. 66). Under this guise, they researched the dismembering of individuals from their food system, tagging them as industrial eaters. Such people consume food without the knowledge of its origins or its human connections and they lack the desire to learn about them. Big food companies (such as in fast food) and the agri-business empire
“…lures and traps industrial eaters with promises of ease, speed, convenience and slender ‘health’” (p. 52). Such brainwashing causes the “…dehumanization of the most basic human act — the communal breaking of bread” (p. 51), all in an effort to reduce people to mere consumers. Agri-business, as the researchers explained, “…destroys agriculture” (p. 53), replacing relationships based around we with relationships based around I. Similarly affronting, is the modern legal definition of “I” to include the corporation. Such thinking triggers deep dualisms and illusions based on the objectification and separation of people and the separation of self from one’s own senses. Though the researchers provided a framework for re-membering through regenerating traditional Indigenous communities, challenges still persist in the de-skilling and knowledge loss triggered by the western colonial capitalist economies that define the present neoliberal age (Esteva & Prakash, 1998; Hernandez & Sutton, 2003; Sutton, 2006, 2010; Sutton & Hernandez, 2007). Esteva and Prakash (1998) illustrated the difference between industrial and organic memory through the concept of comida:

A very different memory of Mexican cuisine is ‘passed on’ to chefs of ‘ethnic foods,’ graduating from schools of hotel and restaurant management. This industrial memory… depends upon a complicated economy: of publishing ‘houses,’ professional schools and global tourism. Passed on through texts, written and taught by professionals, this memory does not re-member or remember any community… Whenever industrial memory replaces organic memory, it destroys and dis-members communities; replaced by the careerists of professional associations (p. 67).

Such criticisms are warranted in culinary education, especially when considering that culinary education is modeled not after Indigenous cuisines, but rather, after French cuisine.
Some cuisines that spread around the world are diasporic—products of displaced cultures due to colonization. French cuisine is markedly different from this group, because it was actually the colonizer (Trubek, 2000). The French were not only a colonial force which invaded communities around the world, they were also a colonial force of cuisine which invaded kitchens, menus, chefs, their pupils, customers, and even the mind (Deutsch, 2014; Escoffier, 1987; Freire, 1970; Harris & Giuffré, 2015; Trubek, 2000; Woodhouse, 2015, 2016). Woodhouse (2015, 2016), a chef and teacher, recalls being encultured into French cuisine during his culinary training days and being measured against the traditional standards of the French kitchen. All culinary students and those training in kitchens are measured by (Harris & Giuffré, 2015; Trubek, 2000): French knife cuts; French stock making; French names for equipment and techniques; directions in French (sauté the haricots verts; dépouillage the fond; put the fumet in a bain marie); even answers in French (oui, chef!). Even the uniforms, synonymous with the modern professional, career-driven chef, are a product of the French—specifically from the famous French chef, Escoffier, based on his experience in the French military (Deutsch, 2014; Escoffier, 1987; Harris & Giuffré, 2015). Escoffier loved to organize, to streamline, and to apply scientific methodology and reasoning to work in the kitchen (Escoffier, 1987; Harris & Giuffré, 2015). Science of course is no stranger to the commercial kitchen. It is well established that the advent of the modern industrial food system is attributed to principles of Taylorism, Fordism, and capital interests (Berry, 1977; Curren & Metzger, 2017; Edwards, 2005, 2010; Esteva & Prakash, 1998; Golley, 1998; Hawken, 2007, 2017; Kahn, 2010; Klein, 2014; Meadows et al., 2004; Merchant, 2005; McNeill, 2000; Orr 2004, 2016).
Science in Cooking

Science in cooking has transitioned from being in the background to now marking class distinction and status (Vileisis, 2008; Wilson, 2012). Vileisis (2008) explained that the propping up of science and modernism in food began during World War II. Advertisers “adopt[ed] a new strategy… seiz[ing] upon the repute of technology and science to cast manufactured foods as highly modern and, once and for all, as highly desirable” (p. 151).

Similarly, modern gastronomy or modernist cuisine, as some differentiate it, is the intentional application of science to the cooking process—more so than ever before. It produces a high-level, elite culinary cuisine with as much pomp and circumstance as French haute cuisine. With modern equipment, the approach to cooking removes many of the more traditional aspects of kitchen work, such as sautéing a steak or whipping eggs for instance and replaces them with technological “solutions” (Wilson, 2012).

This begs the question: solutions to what problems?

Wilson (2012) pointed out, that solving problems can be problematic in-and-of-itself. Such as in the case of modernist cuisine founder, Nathan Myhrvold, a wealthy ex-chief technology officer for Microsoft, who Wilson explained, seeks to disprove kitchen lore perpetuated by mothers:

…in his book, mothers are repeatedly criticized for holding ‘common-sense’ notions about food that turn out to be wrong (such as cooking pork until it is well done). Modernist Cuisine does not tell us about any of the times when the culinary common sense of mothers has been proven right. In contrast to ‘culinary professionals,’ Myhrvold notes, mothers and grandmothers in the past were ‘only cooking for
themselves and their families.’ Only! As if feeding those close to you were an act of no
importance (p. 258).

Reaffirming Harris & Giuffre’s (2015) precarious masculinity theory, it seems even a
millionaire chef, scientist, and industry celebrity, feels as though he must distance his work
from that of women by disparaging hers to elevate his.

It is true that certain modernist techniques, such as sous vide cookery reduces human
error, but it comes at a cost. As Wilson (2012) further pointed out, it nullifies the need to trust
the senses. To perceive smells, visual cues, and flavor, is to trust instead a machine’s software
to cook foods in a vacuum—literally. Wilson quoted farm-to-table chef, Alice Waters, where
she supposed “…it didn’t ‘feel right’ to her… ‘[it] can be very amusing but it’s more like a
museum to me. It’s not the way of eating we need’” (p. 258). Separating sensory perception
from cooking adds another dualism to the list. In the high affluence of modernist cuisine, there
has been a disregard for human knowledge and community knowledge in favor of positivist
truths (Esteva & Prakash, 1998; Vileisis, 2008). Such an approach removes the humanity from
cooking and the kitchen, resulting in a kind of progress trap, a “…short-term social or
technological improvement that turns out in the longer term to be a backward step”
(Kingsworth, 2017, p. 137). Phenomena like the colonization and commercialization of food,
and the deskilling and devaluing of home cooks and cooking, places the very human practice
of cooking in jeopardy. To escape modern paradigms in cooking and food, Esteva and Prakash
(1998) called for the decolonizing of the mind in order to regenerate ourselves. Freire (1970)
and Greenwood (Gruenewald, 2003) seemingly would agree in that reflection on one’s
situation can lead to action. Instead of perpetuating these problems, how can a chef help
alleviate them?
Dualism and Cartesian Cooking

Investigations into the separation of theoretical and practical applications of culinary arts have persisted. Just the word culinary, paired with arts, denotes a separation as well as differentiating culinary craft or labor from artistic knowledge and ability. Even in vocational culinary education, daily grading and assessments tend to separate production scores—hand work, from theoretical scores—head work. Heldke (1992a) challenged such dualities and credited Dewey in “…eschewing the strict dichotomy between theory—the ‘knowledge gaining’ activity—and practice—the ‘getting-things-done’ activity” (p. 254). She went on to challenge Cartesian dualist thinking by claiming “these are not separate domains of human life, but two interrelated, independent domains” (p. 254). As Heldke (1992a) explained, her intention is not to employ cooking as a means of scientific inquiry to explore philosophical or scientific inquiry, but rather, to dive into the relationship between cooks, recipes and ingredients, where she posits cooking escapes absolutism and relativism. Such research prompts the question however, if cooking is simultaneously craft and art in both mind and body, head and hands, idea and action, all at the same time, then why do chefs, who learn and practice as one co-occurrence, believe they are separate phenomena?

Addressing the question, O’Neil (2015, 2017b) described Cartesian dualist thinking as being pervasive in western education, where it is “still under the paradigm such as that of philosopher/mathematician, René Descartes (1596-1650) who proposes a clear divide of mind from body, rationality from emotion, self from other, and, I extend, human from nonhuman” (O’Neil, 2015, p. 128). Here, O’Neil argued that cooking and eating “engage all the senses” (p. 129), that the kitchen is a “sensory rich learning environment” (p. 129), and that it is time to accept “…all our senses as entangled in the learning process—potentially a performative
transformative learning process” (p. 129). Fellow educator, Belliveau (2007) shared such a view as she has experienced the kitchen to be “…one of those environments where mind/body, subject/object [melt] away” (p. 19). Reassembling knowing and doing is a common endeavor among interdisciplinary scholars.

Hernandez and Sutton (2003), researched embodied memory through cooking and kitchen tool use, mental *blueprints*, and deskilling through modernization (p. 31). Through their investigations, they have come to find compelling interconnections and interdependencies between the mind and the body in food preparation, sensory analysis, habit building, and embodied memory making. Sutton’s (2006, 2010) own scholarship on food and the senses reaffirmed the same interdependence and compels him to believe “we have moved a long way, theoretically speaking, from the problems of structuralism and other Cartesian approaches to mind and body…” (2010, p. 220). The two researchers premise the query: if cooking necessitates tasting as a skill, which requires the use of senses to inform judgment, guided by memory, then how can there be any difference between 'hand work' and 'head work'?

O’Neil (2017b) introduced neuroscience to assert connections between mind, body, and emotion processes that are mutually dependent. Employing her theory of “…kitchen-based learning as a vehicle for affective, social, and conceptual learning” (p. 273), she provided evidence that “…human and nonhuman material in cooking, eating, and interaction with others are embodied activities that significantly enhance learning” (p. 273). O’Neil determined this by using a multisensory relational living story pedagogy as well as diffractive analysis in her research study of participants in an environmental cooking course. Through her highly relational approach to the study, she “…was able to understand how cooking, sensing, eating,
and human relationships performed learning and transformation” (p. 285). Describing them as “entangled,” O’Neil concluded,

When students describe what they taste, feel, smell, and so on, they are relating visceral (felt) feelings of emotion into conscious thought. Their worlds become ‘doings in action.’ In other words, their emotions are relationally performative intra-actions with what they are doing. In this way of learning, not only does knowledge change, but being (of the world) changes. This is a performative transformative onto-epistemological shift in being and knowing. It is not what one student is doing or learning, it is the student’s relational being with others doing and learning—a felt performative dynamic all at once (p. 296).

How did the notion that the human mind, emotions, and the body were somehow autonomous come to be so widely accepted the world over?

*Dualism and Inequity*

Despite such sturdy evidence and impassioned efforts by theorists to reunite mind, emotions, and the body, the culinary trade remains entrenched in a Cartesian outlook because of its traditional master/apprentice ideology, and long history of dualism in practice. Brown (2005a) explained that French food became modern cuisine around the middle of the seventeenth century, when “critics applied Cartesian rationalization, order, and system to it” (p. 47). Here, Brown joined Hegarty and O’Mahony (2001), to point out that separating the practice of cooking from artistry of the craft has helped distinguish the practice from everyday cooking (Brown 2005a, 2005b). What these culinary scholars fail to address however, is that it is also responsible for creating power and equality dynamics such as what Harris and Giuffre (2015) demonstrated in their precarious masculinity theory. Heldke (1992c) illustrated that this
is a contradiction: “this philosophical emphasis supports and is supported by a class, gender, and race bias against those who engage in physical labor” (p. 204).

**Culinary Arts as Fine Art or Craft**

In reviewing Eisner’s educational philosophy, Brown (2005b) looked past these issues to point out that differentiating art from labor helps students learn important mental skills such as critical thinking and problem solving. In a report to the *National Endowment to the Arts*, Eisner (1997) cited art appraisal as the key to critical assessment, stating “the recognition of achievement in art is the result of making a judgement rather than applying a standard” (p. 64). Schön (1987) considers this as the difference between reflection-in-action rather than knowing-in-action, where “…the practitioner reflects-in-action in a case he perceives as unique, paying attention to phenomena and surfacing his intuitive understanding of them…” (p. 72).

Brown (2005b) matched up Eisner and Dewey in his analysis, comparing the two’s emphasis on progressive curriculum, such as in school experiences, to their importance on the quality of experience, explaining that “these experiences cannot be separated from the responsibility of educators” (Brown, 2005b, p. 92). Brown then leveraged Eisner’s theory to make a case for culinary arts to be considered a fine art, claiming incredibly that “humans do not have to cook food to survive… humans cook food to demonstrate their ability to differentiate themselves from others and to set themselves apart” (Brown, 2005b, p. 96). This elitist line of reasoning is shared by Hegarty and O’Mahony (2001) who argue that gastronomy be considered a fine art. They posited “human-kind does not have to cook food: they do so for symbolic reasons which serve to demonstrate that they are humans, not beasts” (p. 4). Unfortunately, these arguments are grounded in the objectification of food, disparaging of animals, and in the common assumptions, competitions, and masculinities associated with
positivist thinking. Hegarty and O’Mahony (2001) even presented a very Baconian quote by historian and anthropologist Bronowski (1981) to make their case:

Man is a singular creature, he has a set of gifts, which make him unique among the animals; so that unlike them he is not a figure in the landscape, he is the shaper of the landscape, the ubiquitous animal who did not find, but made, his home in every continent (p. 13).

The endeavor to elevate culinary work as fine arts does carry merit, but when argued in these ways, it seems to buttress the unsustainable positivist traditions of the trade. Considering this, can the culinary arts be elevated in some other way?

*Skills versus Knowledge*

Separating foodmaking from human need and separating the discipline of culinary arts through elitist distinction is a dangerous path, as it has not only reinforced a separation of mind and body but has led to the favoring of one over the other. In her summary of Morin’s (1992, 1999, 2001, 2007) leading research into complexity, Kuhn (2008) explained that reductionist approaches which simplify phenomena for the purpose of undertaking inquiry are ignoring the “…multi-dimensional, non-linear, interconnected, far from equilibrium and unpredictable…” (p. 174) aspects of individual human beings, associations of individuals, and the human endeavor. She quotes Morin (2001) to explain “a complexity view is that ‘in human beings, as in other living creatures, the whole is present within the parts; every cell of a multicellular organism contains the totality of its genetic patrimony, and society inasmuch as a whole is present within every individual in his language, knowledge, obligations and standards’ (Morin, 2001, p. 31)” (as cited in Kuhn, 2008, p. 175).
Wheelahan (2015) provided context, warning that vocational education “about skills and not knowledge” (p. 750), causes and reproduces social inequality and classism, compromising human agency. She set out in her research to demonstrate why experience is insufficient by addressing the assumptions associated with vocational education, and recommending solutions which provide opportunities for students to access critical thinking and other “higher order concepts in disciplinary systems of meaning” (p. 757). Frisk and Larson (2011) made a similar point, positing that the lack of efficacy in sustainability-related education programs are at least partly due to such assumptions “…about knowledge automatically leading to action…” (p. 1). Such an argument for balance between traditional and progressive education echoes Dewey (1938; see also Hickman, Neubert & Reich, 2009). Deutsch (2014), Hegarty (2014), and Wheelahan (2015) also call for a reunified, balanced approach which provides opportunities for critical reflection.

*Culinary as Applied Science*

Modern science is underpinned by the assumption that science is neutral and free from opinion and biases. Science, however, has not honored this supposition in reality (Capra, 2002; 2016; Merchant, 1980; O’Sullivan, 1999). O’Sullivan (1999), stated “…almost all organized scientific efforts have a dominator motive: control of nature, military power, economic growth, economic power, beating the competition, maximizing prestige and honor, and making money” (p. 138). Such motives have resulted in keeping the hegemony of male privilege and the race for power and dominance firmly in place, while women and the environment pay the cost (Greenwood, 2010; Merchant, 1980, O’Sullivan, 1999). Since culinary arts are considered an applied science, the sales-driven, meritocratic, capitalist industry, too is implicated. O’Sullivan (1999) provided an example when considering the political ecologies at play in Central
America, where countries are militarizing, growers are being pushed off their land, and tropical rainforests are being cleared “…for the production of cash crop agriculture to suit the over-indulged food needs of the US population to the north” (p. 140). Chef’s using products without knowledge of their origins are implicated in this chain of domination. Ignoring or avoiding value-based judgments can be likened to operating in an ethical vacuum (Shani, Belhassen, & Soskoline, 2013).

Food sourcing aside, O’Sullivan went on to expose the perverseness of the modern masculine militaristic cult, its obsession with biblical expansionism in the same vein as Manifest Destiny, the utter destruction of natural environments, and its prospects of causing omnicide—the deliberate ending of all life on the planet by human hands. It seems, as science continues to seek domination over the natural world, an ecology of violence follows (O’Sullivan, 1999, p. 144).

Hierarchies of Domination

Despite the nuances between all the axes of difference, O’Sullivan (1999) illustrated with Frye’s (1983) bird cage metaphor how each rung (or social difference) in a cage may seem insignificant when viewed by itself, but once viewed from a broader perspective, reveals an interconnected and insurmountable obstacle for the bird to get past. As O’Sullivan (1999) explained, “in reality these social forces are, more often than not, systemically related to one another” (p. 160). From feminist perspectives, this phenomenon is commonly described as intersecting oppressions due to the entangled relationships and entanglements at play (Collins & Bilge, 2016). O’Sullivan (1999) postulated, education focusing on non-sexist, peaceful, non-violent, anti-racist, and class-conscious distinctions, may help pave a way forward toward what he calls, critical transformative education—a paradigm compatible with transformative
sustainability education. Modern education still falls short of this vision. Why has there not been enough movement for change? Is critical transformative education not enough? How could restorative ecological consciousness and transformation help?

**Analysis of Critique of Culinary Arts**

This critique identified the root causes and shortcomings to sustainability in the modern culinary industry and culinary education. Figures 2 and 3 illustrate the topic threads and their relationship with each other. A negative feedback loop representing the self-balancing and self-feeding of culinary tradition, modern culinary education, and the current culinary industry, is also presented. Capra & Luisi (2014) define feedback loops as a,

…circular arrangement of casually connected elements, in which an initial cause propagates around the links of the loop, so that each element has an effect on the next, until the last ‘feeds back’ the effect into the first element of the cycle… (p. 89).

Negative feedback loops are negative runaway effects which reinforce detrimental conditions in a cyclical system (Capra & Luisi, 2014; Lange, 2012). Lange (2012) describes them as “…limiting loops that keep people rooted in familiar patterns” (p. 203). Figure 2 illustrates this feedback loop and its effects on culinary education today. Figure 3 illustrates the potential future for culinary education where transformative sustainability education converges with existing culinary education to become a transformative culinary education as sustainability
In Figure 2, the world of culinary education in the modern era is represented by a blue circle. The yellow arrow loop represents influences which permeate culinary education’s world. This yellow arrow originates in the past from culinary traditional values. It then projects forward to foster the modern culinary education worldview, and in turn, the culinary industry of the modern era. Such influences reinforce each other as time goes on. Culinary tradition influences culinary education. Culinary education influences the culinary industry. The culinary industry values and reinforces culinary tradition. Culinary education seeks to match its educational prevue with industry need. This interconnected loop of cause, effect, and reinforcement is considered a negative feedback loop as it self-sustains and causes/reinforces unsustainability in all three vectors: culinary tradition, modern culinary education, and the culinary industry in the modern age.
In Figure 3, the negative feedback loop is broken and dissolved as the world of sustainability education, represented in green, merges into the world of culinary education in the postmodern era. This vision is presented in the proceeding thread of this literature review. As sustainability education merges, a new vector emerges from the overlapping of the two worlds: transformative sustainability education as sustainability. This figure depicts a visual representation of how a culinary sustainability education can be formed. The “as” in transformative sustainability education as sustainability signifies Sterling’s (2001) third-ordered learning and change—a theoretical level of learning which transforms individuals and society toward more sustainable practice and being. This convergence will be explored in the final thread on pedagogy and learning of this literature review.

**Thread 2. Finding a Vision**

**Food Revolution & Vision for Sustainable Culinary Arts**

The rough-and-tumble patriarchal and monarchical culture of the culinary industry has been prevalent since the inception of the apprenticeship in Europe centuries ago. It was
imported to America in the early 1900’s, where it continues to be reinforced to this day in culinary schools and modern apprenticeship programs (Brown, 2005a; Woodhouse, 2015, 2016). That is not to infer culinary schools and modern apprenticeship programs condone brutal work conditions, sexual and gender harassment, or workplace bullying, but rather, are structured, cultured, and operated by historic influences, or *holdovers*, from the industrialization and Fordism factory line approaches prevalent in the industry (Brown, 2005a; Mac Con Iomaire, 2008; Woodhouse, 2015, 2016).

Examples of this can be found in the meritocrat and military hierarchy of the institutions; the continued use of Escoffier’s *brigade system* with draconian protocol and uniform regulations; the conditioning for long work hours; sanctioned and unsanctioned endorsements of competition; competency-based performance assessments; submissive master/apprentice etiquette (as in “yes chef!”); and finally in the role of the head chef or instructor as the hierarchal organizational masculine leader archetype. Jungian archetypes, such as *the father, the hero, the savior, and the king*, in their shadow side, can point to leaders who are unquestionable in their knowledge, driven to be idealized for their achievements, and beholden to the belief they are the only person in the kitchen with all the answers. This is more fitting of a *tyrant leader* shadow archetype than that of a noble leader (Lindegger 2006; Steyrer, 1998; Tallman, 2003). Escoffier called for culinary to be like an art, fluid and responsive to society’s needs, making it ironic that today’s educational and professional culinary trades look toward tradition for guidance instead (Woodhouse, 2015).

As the surrounding media continues to glamorize the occupation with stories that reinforce the segregation of men and women chefs, and the industry continues to reward men chefs for pushing boundaries while rewarding women chefs for sticking to family and cultural
traditions (Harris & Giuffre, 2015), it is difficult to imagine cultural change any time soon. Exacerbating the problem is the obsession in culinary schools with conformity and industry traditions, keeping power relations between master and apprentice the same, and shaping success in the industry as something which is earned through status achievement when one is “worthy of the title [chef]” (Harris & Giuffre, 2015, p. 191).

Nevertheless, Harris and Giuffre (2015) suggested that historical forces can be altered. The culture of a kitchen is determined by choices made by the chef, “not [by] the natural result of cooking professionally” (p.195). This means the chef and educator have the power to choose the pedagogy and praxis in which to perform the practice and learning of cooking. It seems paramount that if culinary education is going to adopt sustainability concepts such as social equity, ecological and socioeconomical food justice, corporate citizenship, resource management, and systems thinking, among others, that it may need to seek out an alternative paradigm of teaching and learning in order to foster transformative sustainability learning experiences.

**A Revolution in Food**

Progress toward the United Nations Educational, Scientific, and Cultural Organization’s (UNESCO) Sustainable Development Goal #12, *Sustainable Consumption and Production*, continues to fall short of targets on the global stage (United Nations Economic and Social Council, 2017). Pressure is building in the arena of public opinion as increasingly consumers are demanding more sustainable food practices such as locally sourced menus, environmentally sustainable options, and healthful foods (Edwards, 2010; National Restaurant Association, 2017). This *food revolution* as Edwards (2010) called it, is pushing for a more honest food system where food producers recognize the importance of food to humanity, and
their obligation to grow, harvest, source, and produce/prepare it in more sustainable ways. Even the US government cannot deny the importance of food on people and the ecosystem. The Centers for Disease Control and Prevention ([CDC], 2012) outlined:

Food impacts almost every component of our lives. The production, processing, packaging, and transportation of the majority of our food are highly dependent on the use of fossil fuels and chemical fertilizers. These can greatly harm our health and the health of the environment. In response, a move toward sustainable food has become an important component of public and environment health (p. 1).

Due to such pressures from consumers, industry members, and local and national governments, The National Restaurant Association (2018a) reported that the foodservice industry is “…integrating sustainability practices into their daily business operations” (p. 1). Further, various other industries, organizations, and governments at the local, national, and global stage have also prioritized food sustainability high on their agendas, opening a prospective job market for sustainability related careers. Far-ranging opportunities have arisen in food policy, food advocacy, supply chain management, foodservice management, food product development, and entrepreneurship, among others. According to the Bureau of Labor and Statistics (2018):

Sustainability professionals help organizations achieve their goals by ensuring that their business practices are economically, socially, and environmentally sustainable. Sustainability is a diverse field that includes a wide variety of professionals. Sustainability professionals can be business managers, scientists, or engineers; or they can come from other backgrounds. Although their specific career paths might differ,
sustainability professionals promote environmental protection, social responsibility, and profitability (p.1).

Speaking on the importance of sustainable chefs in food services, even Nestle’s executive, Veldhoven (2017), claimed it is the way of the future. Career opportunities provided in the field of food sustainability not only address industry demands for sustainably minded, food literate foodservice professionals, but address broader markets throughout the food system as well. Change extends into food supply, distribution, retail, and food companies within the economic system, and in food recovery, waste management, land management, and environmental advocacy in the biological system, as well as in community centers, education, and food hub coordination in the social system.

It all begins however at the source, where prospects for more sustainable practices in agriculture, food production, and seafood harvesting are present. At the regulatory level in the political system, opportunities in policy making, trade, and advocacy exist. Such a diverse food system presents many spaces for sustainability and unsustainability to occur, challenging colleges and educators to consider how to teach sustainability concepts to future industry leaders.

The food revolution, also known as the local food movement, illustrates a global-to-local push for local, honest, morally just, environmentally friendly foods which are organically and equitably grown, bought, sold, and consumed (Capra, 2002; Duram, 2010; Edwards, 2010; Hawken, 2007; Hesterman, 2011; Robbins, 2010; Vileisis, 2008). It showcases a slowed down food system, such as in Carlo Petrini’s *Slow Food Movement*, and brings families back to not only the dinner table, but to the kitchen, and to local growers as well (Duram, 2010; Edwards, 2010; Hawken, 2007; Hayes-Conroy & Martin, 2009; McMichael, 2000; Pollan, 2006; Smith,
Duram (2010) spoke of social sustainability, with support for small farms which would otherwise have been bought out by larger farms, and reestablishing community food networks. She joined Robbins (2010) and Hawken (2007) to note environmental benefits such as increased biodiversity, reduced wildlife impacts, lower food miles and fossil fuel consumption, and elimination of harmful chemicals such as pesticides, herbicides, and fertilizers.

The initiative has gained momentum. Edwards (2010) identified the food revolution as shifting the way food is grown, distributed, prepared, and accessed. He explained further, “as the marketing avenues for farmers have increased, so has the public’s yearning for contact with local farmers and access to local foods” (p. 129). However, increased consumer demand has some negative effects, as Hesterman (2011), Pollen (2006), and Duram (2010) presaged “…organic food is becoming a victim of its own success; in some places its popularity has caused profit-seeking corporations to overshadow small farms” (Duram, 2010, p. xii). Hesterman (2011) went further, “…some of the organic farming world has lost touch with the principles of equity and economic viability” (p. 44). In defiance, Duram (2010) posited, many consumers are now looking more toward local foods as “…the new alternative” (p. xiii).

Many literary voices have stepped in to lead the movement with a collection of top selling books, such as Lappé, (1971) and daughter, Lappé (2010; see also Lappé and Terry, 2006), Schlosser (2001), Pollan (2006, 2008, 2009, 2013), and Nestle (2003, 2010, 2013, 2018; see also Nestle & Baer, 2015), among others. These food pedagogues provide direction and authority for consumers, but are not free of criticism from academics themselves (Coveney, 2000, 2006; see also Coveney, Begley & Gallegos, 2012; Flowers & Swan, 2012a, 2016; Guthman, 2007; Hayes-Conroy & Hayes-Conroy, 2008; Lewis & O’Neil, 2019; Leahy & Pike,
Regardless of where the messages are coming from, Hawken (2007) pronounced the movement is growing, where,

…thousands of NGOs around the world are organizing around localization of the economy, particularly where cities and entire regions have been gutted by globalization, and where people are preparing for a different future. By rejecting the deterioration of the quality and variety of food, localization creates food webs that produce fresher, higher quality food, and provides food security, because it lessens dependence on distance sources (p. 157).

In terms of social movements, Capra (2002) surmised,

… these recent developments show clearly that today’s worldwide grassroots movements have the power and the skills to change not only the international political climate, but also the game of the global market, by reorienting its financial flows according to different values (p. 229).

Additional scholarly voices challenging neoliberal food globalization forces include Guthman (2006, 2007, 2008a, 2008b, 2014), Sumner (2015), and Flowers and Swan (2012a, 2012b, 2016; see also Swan & Flowers, 2015), who applied critical perspectives to the modern food system and its effects on humans and their communities. Similarly, Slow Food dismantles globalized and industrialized food structures, albeit in a more nuanced way. Hawken (2007) claimed the movement is not overtly “…anti-globalization; [but rather] they are pro-localization” (p. 156). He elaborated:

Slow food supports the re-creation of networks of traditional food producers with customers so that both may thrive. It is about conserving the heritage of the exquisite variety of tastes humankind has created, which means organizing farmer’s markets and
ensuring both that varieties of fruits and vegetables and rare breeds of animals do not become extinct, and that people who are artisans of food are supported and can pass on their craft to future generations (p. 155).

Moreover, Hawken asserted that the movement is about slowing down, a concept reminiscent to Orr’s (2002) essay on fast knowledge versus slow knowledge. This points to distinctions drawn between the technological and destructive globalized economy culture of today, and the resilient, harmonized, and connected cultural ways naturally present in slow-paced cultural matriculation. Ironically, Orr observed that “slow knowledge really isn’t slow at all. It is knowledge acquired and applied as rapidly as humans can comprehend it and put it to consistently good use” (p. 42). Hawken (2007) would agree, and in his assessment of slow food, spoke to the benefits of bringing people back together around food, claiming “taste is social” (p. 156), with a communal kinship experience of sharing a meal with one another. Klein (2014) would consider this more of a regenerative approach, rather than a resilient one because as an active position she believes it empowers people to be “…full participants in the process of maximizing life’s creativity” (p. 447). In describing the power of food, Sumner (2013a) added that “food is central to human existence as learning—people eat every day” (p. 194). Alice Waters, one of the most famous chefs held up as a figurehead of the food revolution in America, found eating together to be “…a socially progressive act…” (Kamp, 2006, p. 131).

Waters (2007), like other famous chefs, spoke to the revolution and provided guidance for fans and followers alike. Her vision of the local food movement is conceptualized as a “delicious revolution” (p. 3). She provided the following meditative guidance:

eat locally and sustainably…

eat seasonally…
shop at farmers’ markets…
plant a garden…
conserve, compost, and recycle…
cook simply, engage all your senses…
cook together…
eat together…
remember food is precious (p. 6)

Another renowned chef, Barber (2014), takes a pragmatic view of what the food revolution has done, what it has not done, and what it needs to do. “Our job isn’t just to support the farmer; it’s really to support the land that supports the farmer” (p. 182). Barber’s (2014) vision is one where those who cook create dishes from ingredients available in their local region, rather than imposing on their local region to make available those ingredients needed to make a certain dish. Barber touted that chefs are well equipped to do the latter. He rationalized “Carlo Petrini, the founder of Slow Food, once said, ‘A gastronome who is not an environmentalist is stupid,’ and I think he’s right” (Barber, 2014, p. 247). Hawken (2007) similarly evoked Petrini, claiming “food lovers who are not environmentalists are naïve, and an ecologist who does not take time to savor his food and culture leads a deprived and sad life” (p. 155).

Though food literacy plays a large part in understanding the origin of food, it also contributes to a better understanding of food systems and community health as well (Coveney et al., 2012; Sumner, 2013b). While considering the kinds of learning associated with food movements, Sumner (2013b) postulated,
learning to prepare healthy meals using local food, to understand where our food comes from, to appreciate the cultural significance of heritage foods, to resist the marketing messages associated with junk food, and to practice [sic] mindful eating lays the groundwork for food literacy. Such learning can open up the practice of the possible and encourage people to become more than the neo-liberal subjectivities the market encourages (p. 88).

Guthman (2003, 2006) both supported and challenged this conclusion. She investigated how neoliberal rationalities in the form of consumer choice, localism, entrepreneurialism, and self-improvement, can recreate neoliberal forms themselves. As an example, she used the concept of foodie-ism to challenge the “yuppification of food” (p. 1175), pointing out that cooking shows, celebrity chefs, and popular food writing have grown into neoliberal industries themselves. In considering the politics of the possible, she called “…for closer attention to the micro-politics that shape various initiatives” (Guthman, 2006, p. 1171). Thus, she concludes knowing where one’s food comes from is not enough. Like Hesterman (2011), she suggested a shift in public policies, rules, and regulations, which would have a greater, more meaningful impact (Guthman, 2006). This premise is relevant to the chef, who participates in the food system as a central player not only in sourcing and preparation, but also in local food politics and voice. A chef cognizant of impact as a change agent can influence the food revolution effectively, meaningfully, and in far-reaching ways.

**Chef Graduates as Change Agents**

Experiential learning has been a mainstay in culinary education since its inception, but experiential culinary education knotted to sustainability concepts—or a culinary sustainability education—has the potential to create change agents with far-reaching social and
environmental impacts. Such a change is to switch from Schiro’s (2008) social efficiency ideology to a social reconstruction ideology, where the aims of education are redirected to facilitate construction of a new and more just society. This ideology first assumes an unjust, corrupt and failing society which must be critically analyzed (Schiro, 2008). Following this, is taking corrective action. The combination of critical analysis and taking action are not novel, however.

Another educator, Breunig (2005, 2009), applied the concepts of critical theory and experiential education together, asserting that the two are compatible and complimentary. By intention, both set out to make “…a more socially just world” (Breunig, 2005, p. 106). For instance, critical theory is often criticized for lacking action—being just a pedagogical exercise practiced in the abstract walls of academia, while experiential education is simply reduced to *play* if not designed with “…intention, purpose, and direction” (p. 107).

Freire (1970) and Dewey (1938) would have agreed, Freire searched for unity between the two (Breunig, 2005), and Dewey (1938) emphasized the importance of meaningful experiences in curricula design. Breunig (2005, 2009) connected their theories with the aim of creating a theoretical underpinning to inform and give purpose to pedagogical planning. To her, the combination allowed critical theory to inform experiential design. In turn, the approach sets up applied praxis, without which “…the mere transmission of theoretical knowledge about these concepts [would] not ensure that students are acting upon the justice-oriented intentions that the theory purports” (Breunig, 2009, p. 250). In 2009, Breunig set out to test her assertions by conducting interviews to inquire how students actually engage with critical pedagogy in experiential ways. Among her conclusions were strong correlations to Deweyan mainstays: poorly constructed experiences can be *miseducative*; and “…the presupposition that
knowledge and attitudes about justice lead to changed actions and behaviours may be a myth” (p. 260).

In the right setting, culinary education can leverage Breunig’s (2005) findings. Applied to a culinary education centered on sustainability, Breunig provided a bridge between two traditionally separate theoretical frameworks, critical and pragmatic, but also a pathway for sustainability learning to occur. Sterling (2001) envisioned it would take such a blending of theory and practice for society to break free from transmissive education in order to instill values and embody sustainability. Student chefs can apply critical theory by researching, developing, and preparing decolonized menus with community members; examining food policy issues and proposing applicable solutions; working within community organizations to create good food projects which address socioeconomic food challenges; or demonstrating easy family dinners using local produce. For chef learners, the combination of critically analyzing socioeconomic food justice issues within their food system community alongside the ability to act by literally cooking up real practical change, exemplifies Breunig’s (2009) blend of approaches.

Transformational Opportunities

The effects of human activity on the planet, such as overpopulation, fossil fuel use, loss of biodiversity, industrial food production, climate change, and massive social inequity—to name a few, are detrimental to future prospects of survival (Curren & Metzger, 2017; Edwards, 2010; Golley, 1998; Hawken, 2007, 2017; Kahn, 2010; Klein, 2014; Merchant, 2005; Orr 2004, 2016). The way learners have been educated in the modern era has been deficient in garnering the appropriate response (Sterling, 2001; see also Jickling & Sterling, 2017; Orr, 1992, 2002, 2004, 2016). Woodhouse (2015) claimed there is some movement in the culinary
arts education community which is challenging this status quo. In a culinary sustainability education, sustainability issues could be explored through an experiential culinary education, where students would critically analyze issues in sustainability today, and propose solutions which they could apply in the real world.

Such applied praxis seems paramount in Freire’s (1970) theory of social-emancipatory transformative learning, where researcher Lange (2013) summarized “education can contribute to social transformation by enabling learners to understand their historical conditions, become conscious of group interests, and organize to advance their interests, thereby creating a just society” (p. 4). Such critical analysis, combined with critical self-reflection and experiential learning, help foster conditions where transformative learning can occur. Yet, it also introduces yet another dilemma for sustainability-conscious academics in terms of choosing a curriculum theory to employ.

Lange (2012) and Orr (1992) suggested polarized views on sustainable development and sustainability can be complimentary. Combining deep inner change with the need for outward social change, sets up an opportunity for a paradigm shift which can ripple both inward within individuals and outward into communities. Modern culinary arts education desperately needs such a transformation. It needs practitioners who are cognizant of ecological limits, social justice, the origins of food, and the importance of building relationships with food producers, customers, employees, and policy makers. The field needs leaders who have knowledge of their local food web and the issues which affect it, as well as those who have developed critical thinking skills and strong sustainability ethics. Acquiring such command of food sustainability requires a different kind of education. Frisk and Larson (2011) affirmed, it “requires that individuals adopt different values, attitudes, habits, and behaviors, which are
often learned and cemented at a young age” (p. 1). Shani et al. (2013) forecasted the implications,

food ethics education is likely to have a positive impact on the credibility of the culinary arts profession, at a time when there is a shift toward sustainability and ethical awareness; it is also likely to impact favorably on the opportunity of recruiting culinary professionals as agents of change regarding pressing moral challenges (p. 447).

The importance of the professional chef’s role in a more sustainable world cannot be emphasized enough. Chefs don’t just make food. They source and purchase it, set standards for it, manage its storage, use, and waste, and oversee operations which prepare, sell, and serve it to customers. Further, chefs employ workers in their trade, are participative members of their community, in local and national policy making, and they shape public attitudes around food (Trubek, 2008). Intrinsically, chefs’ numerous touchpoints in the food system reveal culinary education to be an ideal point to instill a sustainability ethic. To do so necessitates the creation of a new pedagogy termed, culinary sustainability education.

Entangled Menus & Ingredients

In an increasingly globalized food system, neoliberal interests control a battlefield of consumer choice, regulation, and sovereign rights. Casualties are innumerous, and appear in the form of manipulated markets, changed geographies, economies, communities, ethics, and social structures (Edwards, 2010; Guthman, 2002, 2009; Klein, 2014; McNeill, 2000; Robbins, 2012). The results of such a wicked and entangled food system, is winners and losers. This prompts consumer demands for transparency and information about ingredients, supply chains, and impacts from food choices (Blake, Mellor, & Crane, 2010; Eden, 2011; Edwards, 2010; Filimanau & Krivcova, 2017; Filimonau, et al., 2017). Positioned at the center of these
intersecting pathways is the obligated chef, who is tasked with planning menus which meet such requirements. Filimonau et al. (2017) added gravity to such responsibility when they stated “restauranteurs have a crucial role to play as architects of consumer choice as they can employ menus to effectively intervene into the [sic] customer decision-making process” (p. 23). The researchers reveal the power that menus have in directing consumers toward choices which are better for the environment and broader society.

The weight of consumer choice is hefty, as it determines the magnitude of the environmental, societal, and health impacts associated with foodservice products and services (Filimonau & Krivcova, 2017; Pulkkinen, et al., 2015). By applying a sustainability standard to their offerings, chefs can target more sustainable effects (Baldwin, Wilberforce, and Kapur, 2011). Sourcing sustainably in this tight space requires chefs to first be knowledgeable of their food web and ingredient impacts, as well as be morally adept when planning such menus for change. Vileisis (2008) proclaimed it is time for a change as “our industrialized food system has grown under a covenant of ignorance—with consumers not asking and producers not telling” (p. 246). Employing a critical perspective to research the political ecology of a chef’s provisions may uncover hidden truths and allow better informed decision making. Such an analysis, combined with applied values and action, should be cornerstone skills taught in a culinary sustainability education.

A Regional Focus on Food Supply

Considering the political ecologies of ingredients provides an opportunity to pull away the veil from an intentionally ambiguous food market. This can illuminate the nodes, connections, power struggles, and reverberations between ingredients and their sources, including their impacts on people, the environment, and other stakeholders (Blake et al., 2010;
CULINARY SUSTAINABILITY EDUCATION

Eden, 2011). Such an analysis can be challenging however, because this approach, as a tool, is a powerful tactic to reveal the *politics of power* (Eden, 2011). No place on Earth is untouched by humankind, and certainly neither is any ingredient. Such relationships can be complex, so research must be conducted mindfully to avoid exploiting marginalized communities, farmers, or workers (similar to *research theft*), or offering impractical or naïve solutions (Blaikie, 2010; Robbins, 2006, 2012). Researcher Galt (2016) suggested calibrating the range of analysis to a regional view when investigating agriculture and the food system, in order to overcome many of these common pitfalls. For the chef, a regional food system is relatively easier to examine than a global food system. It offers local options with shorter, more traceable pathways (Blake et al., 2010; Eden, 2011).

*Ethics and Unmasking Food Pathways*

Gordillo (2017) argued against capitalist apologists’ use of phrases like “feeding the world”, and “creative destruction”, to unmask and more properly label them as “destructive production” since they generate “…massive forms of ruination that are not sustainable in the long run (Gordillo, 2016)” (Gordillo, 2017, p. 798). He evaluated progressive models of accumulation that continue to rely on “the short-sighted nature of corporate models that prioritize profits and hyper-productivity over social justice and sustainability” (p. 797). Through this endeavor, Gordillo and other political ecologists that underpin his work, such as Gerhart (2017) and Hoelle (2017), revealed the disconnect between consumers from the global north, and the places which have been ruined in the global south—just to produce food ingredients offered on menus and in the grocery store such as salmon, beef, broccoli, and other common first-world food staples. In Gerhart’s (2017) case, his research into the Chilean salmon industry tied together “environmental history and political ecology in order to reveal
the complicated non-human and human collectives that constitute its ‘ecological rubble’” (p. 726). He asserted that the human workers are also part of this ecological rubble, as they become blind to non-human agencies and get lost in the hubris of “technocratic narratives of control” (Gerhart, 2017, p. 726).

Moragues-Faus (2017) used the concept of entanglement to explain how political ecologists “…employ analytical concepts such as socioecological systems or socio-natures to navigate how nature and society emerge and change by becoming entangled with one another…” (p. 278). Applying this conceptual approach to the political ecology of food, the researcher speculated that the ethics of entanglement would allow researchers to explore new methods Sundberg (2015) believed “takes responsibility for the epistemological and ontological worlds we enact through the everyday practices entailed in academic research” (Sundberg, 2015, p. 120). Moragues-Faus (2017) used this point as evidence that an ethic of entanglement provides room for “…experiencing and conceptualizing (sic) society-nature relations” (p. 278). For chefs and food production, one thing that stays constant is that there is always a connection and reverberation between an ingredient, its origin, people, and the places it comes from.

Just choosing to focus on a regional food system will not be enough for chefs however. Sound judgment based on values, attitudes, habits, and behaviors are also essential for sustainable food sourcing—all qualities Frisk & Larson (2011) believed are not being taught enough today to achieve transformative action. Similarly, Shani et al. (2013) advocated for ethics in culinary arts “…to prevent students from getting the impression that food exists within an ethical vacuum…” (p. 460). Heldke (2012) complicated such ethics from the position of consumption to draw attention to commonly held assumptions about what are good foods to eat and what are bad. Present culinary education, with its emphasis as an applied science, lacks
ethical analysis since modern science is in league with dominator systems obsessed with the control of nature, power, economies, capitalism, anthropocentrism, and money (O’Sullivan, 1999; Shani et al., 2013). With the role and responsibilities of the chef now being knee deep in sustainability responsibility, questions arise as to how chefs should be trained to develop values in sustainable culinary practice.

Shani et al., (2013) believe culinary education should include a pedagogical approach to food ethics in order to “expose culinary students to ethical concerns pertinent in their profession” (p. 459). As a required area of study within culinary programs, the scholars “…argue that food ethics education has the potential not only to assist students in solving ethical dilemmas and with decision making, but also to advance their skills and understanding in relation to the different aspects of culinary arts” (p. 459). An education such as this, the scholars espouse, would prepare students to understand and act on their responsibilities socially and environmentally.

Questioning assumptions about culinary education and critically assessing the dualist nature of the trade, including the thinking and behavior of the actors involved, can identify gaps to inform and inspire a more sustainable approach. One which cultivates knowledge and life-long growth, considers knowing and doing the same, and values both as interdependent equals. Introducing culinary sustainability education as a new paradigm can potentially create systemic change by imbedding generations of sustainably minded chefs who have agency to make a difference.

Implementation Challenges

A dilemma arises in higher education institutions when educators must decide how to deliver sustainability curriculum. Finding a position and methodology along a spectrum of
delivery modalities must be considered, where on one end of the spectrum, an all-encompassing sustainability competency could be implemented across all majors, and on the other end of the spectrum, a stand-alone degree program in sustainability could be developed. Anything short of a full, campus-wide implementation of sustainability doctrine into every major and at every level, might be considered a narrow sort of sustainability, however, this notion would neglect the fact that such a large initiative in today’s traditional western education system would likely be instituted by what can be described as a shallow sustainability (Gould, 2014; Klahr, 2012; Lange, 2012; Sterling, 2001; O’Neil, 2018; Orr, 1992).

The fear is that sustainability by non-sustainability experts, would be implemented in an arbitrary, green-washed, sort of way. Gould (2014) encapsulated the choice well, as educators, the question that we face concerns whether we think of sustainability as a subject to be taught or as an underlying principle in helping to design new learning environments for this emerging world. Coupled to this question is the prevalence of reductionist thinking that leaves one with the dilemma of thinking systemically about our students' future but acting within silos of past thinking (p. 89).

A great example of this dilemma can be found at JWU, where a plethora of majors as diverse as fashion design, business, technology, travel & tourism, equine management, hospitality, and culinary arts, are offered. Without a protean knowledge of how sustainability intersects with all these disciplines, only a superficial, shallow sustainability could be facilitated across the entire curricula. Oppositely, offering a full degree program in culinary sustainability might seem like the inferred solution, however, it would not be immune to the pitfalls of reductionism and isolationism by being siloed as a stand-alone major. Paralleling this duality with the
disputation between weak and strong sustainability in the sustainable development arena, a solution to this dilemma becomes evident.

O’Neil (2018) delineated differences between weak sustainability and strong sustainability. Using her environmental science background to provide context, she describes weak sustainability as “…the ability to measure and quantify environmental impacts, develop suitable regulatory apparatus, and use market mechanisms to encourage business toward desired goals” p. 370). Weak sustainability is best exemplified by Sterling’s (2001) concept of teaching about sustainability subjects, but not necessarily valuing or embodying them. Further, sustainable development as another example, is often accused of demonstrating a weak sustainability approach as it seeks to measure, quantify, and justify modernist progressive development agendas (Lange, 2012, Orr 1992). A strong sustainability, by contrast “…is known as ecological sustainability…” (O’Neil, 2018, p. 370), where nature is valued and considered “…intrinsic and basic to human survival…” (p. 370). In strong sustainability frames, humans are co-participants with non-humans in their existence on Earth, not the center of it (Bateson, 1972, 2002; Capra, 2004; O’Neil, 2018). Assuming the goal for any institution is to implement strong sustainability over weak sustainability, how can an institution do this while navigating the dilemma between standalone sustainability programs versus sustainability tenets spread throughout an institution’s entire curriculum?

A potential solution may be present with scholars Lange and Orr, where Lange (2012) channels Orr (1992) in proposing a remedy by “conced[ing] that these two polar views can be complementary” (p. 199). Through their interpretation, implementing a stand-alone program while simultaneously championing sustainability principles university-wide, may be the most
CULINARY SUSTAINABILITY EDUCATION

effective strategy in teaching and fostering a stronger sustainability in today’s higher education.

Incorporating topics into various fields through the proper methodology presents many opportunities for deep, paradigm shifting learning experiences to occur. As a case-in-point, O’Neil (2018) uses the concepts of weak and strong sustainability to underpin an argument for systemic change in “…epistemology and therefore transformative education” (p. 370), and Lange (2012) has combined sustainability and complexity theory to define qualities of transformative learning which are complimentary to ecological learning. As these examples illustrate, sustainability as a topic provides the flexibility to transcend disciplines (Klahr, 2012), affording educators innumerous pedagogical avenues to explore. For culinary educators, this can take the form of experiential learning at carefully chosen settings, critical analyses of sustainability issues, and critical reflection on those experiences. Such an approach can foster an environment conducive to transformative learning.

Thread 3. Pedagogy and Learning

Pedagogy in Culinary Arts

Woodhouse (2015, 2016), critically studied pedagogies which underpin present culinary arts education. He provided insights into “…the ‘underbelly’ of culinary arts and its associate pedagogies” (Woodhouse, 2015, p. 14, citing Palmer, Cooper & Burns, 2010). Through his critically reflective and emotive inquiry, based on Schön’s (1983) concept of reflection on action, Woodhouse (2015) exposed damning dualities in culinary pedagogical practice (praxis). Drawing critical conclusions, he revealed culinary learners have been disempowered through a reduction in their roles, where they are valued based on the skills and abilities they can reproduce for their masters. Such training proves to be classist and isolating,
where a separation of food preparation from service tasks reinforces a “us” versus “them” mentality. Further, the subjugation to a chef master robs learners of the ability to think critically, participate in public or civic discourse, or have any kind of agency (Illich, 1971; Bowles & Gintis, 1976; Woodhouse, 2015, 2016; Wheelahan, 2015). This kind of pedagogy standardizes authoritarian delegatory control by subjugating learners to disciplined conformity (Deutsch, 2014; Palmer et al., 2010). Standing in the face of such a conformist educational establishment, Woodhouse (2015) rationalized his phenomenological and reflexive approach as a call to make the lived experience a more accepted and valued way of knowing.

Woodhouse (2015) summarized critical authors who question education’s role and impact on learners and societies. Table 1 illustrates the researchers he has chosen, along with some notable concepts and touchpoints in culinary education.


**CULINARY SUSTAINABILITY EDUCATION**

**Table 1. Critical Researchers**

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<thead>
<tr>
<th>Theorist</th>
<th>Key Concepts</th>
<th>Application to Culinary Education</th>
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<tbody>
<tr>
<td>Freire (1970)</td>
<td>• Power relationships between teachers and learners;</td>
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<td></td>
<td>• Dehumanization;</td>
<td>Dynamics of power must be addressed in contemporary culinary education both in practice and in structure.</td>
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<td></td>
<td>• Liberation as praxis;</td>
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<td></td>
<td>• Knowledge banking;</td>
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<td></td>
<td>• Objectification of people;</td>
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<td></td>
<td>• Culture of silence;</td>
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<td></td>
<td>• Cultural invasion;</td>
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<td></td>
<td>• Learners must problematize their lives to see past their oppression.</td>
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<td>Illlich (1971)</td>
<td>• Societal de-schooling;</td>
<td>Formal culinary training still modeled after the master/apprentice framework, requiring learners to acculturate, conform, and reproduce to gain legitimacy of earned knowledge; Such a process strips learners of their creativity, enthusiasm, and interest in learning.</td>
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<tr>
<td></td>
<td>• Knowledge as a commodity;</td>
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<td>• Technocratic institutes of control;</td>
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<td>• Schools are the new world of religion;</td>
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<td></td>
<td>• Conferment of earned knowledge required institutional approval</td>
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<td></td>
<td>• Dependence on formalized education;</td>
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<td></td>
<td>• learners lose the ability to think critically or creatively and incentive to grow independent.</td>
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<tr>
<td>Bowles &amp; Gintis (1976)</td>
<td>• Schools &amp; social reproduction;</td>
<td>Culinary education systems also reproduce social and hierarchical relationships which exist in industry; Laborers as laborers; Cultures of competition, merit-based rank, and competency-based benchmarking are created and reinforced in culinary education; Learners conform to their expected position in the workforce, become subordinate to those who manage them, and socialized to their expected place in society; State as regulator continues to drive the stratification of knowledge.</td>
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<td></td>
<td>• Meritocratic ideology;</td>
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<td></td>
<td>• Correspondence principle;</td>
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<tr>
<td></td>
<td>• Legitimization, acclimatization &amp; stratification.</td>
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<tr>
<td>Apple (1979, 1982)</td>
<td>• Social reproduction ;</td>
<td>Culinary education sets students for economic trajectories compatible with social-reproduction expectations in terms of class and positions as a service force; Barriers to entry of schools predetermines hierarchical position and path of potential; Culinary schools also leverage their cultural capital as labor force trainers, deeming them the ultimate authority over what is legitimate knowledge in the trade.</td>
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<tr>
<td></td>
<td>• Legitimate knowledge ;</td>
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<td>• Hidden curriculum;</td>
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*Note: Adapted from Woodhouse (2015)*
Woodhouse (2015) also reviewed Foucault’s (1972) concept regarding “examinational gaze,” and disciplinary power, as well as Plato’s Allegory in order to question who is pulling such strings of power, why are they doing it, and what is the rationalization for who is chosen to benefit from such structures? Through his autoethnographic inquiry, Woodhouse (2015) examined his stories of experiences in formal and nonformal culinary education with critical theory. In Woodhouse’s (2015) analysis of the dualist and reductionist paradigms of colonial master/apprentice-based culinary arts ideologies he concluded:

So long as formalized culinary education continues to follow and present to the public the hierarchical and curriculum structures of Escoffier’s classical brigade system, Western culinary education will continue to perpetuate the hegemonic position that legitimate culinary knowledge comes from adopting a classical French position (p. 58).

He asserted that his criticisms were not to “…provide the positivist truth, or the way forward for the culinary arts community but to add to the body of knowledge within a critical paradigm” (p. 70). For him, like so many in the trade, he considered his calling to the culinary profession as “…a way of being” (p. 12), but added that his story was really about the transition from “…a cook who teaches to a teacher who cooks” (Woodhouse, 2015, p. 13).

**Holistic Experiential Learning.** The cooking in culinary arts education has always made it tantamount to action-oriented experiential education. Dewey (1938) utilized it to teach more than just skills, but primarily to democratize education. His work is often described as learning by doing, to account for the occurrence of learners engaging in direct experience rather than abstract knowledge (Belliveau, 2007; Belliveau & Heldke, 2019a; Roberts, 2012). As Belliveau (2007) asserted, problem solving, sensory perception, collaborative and participative learning, effective communication, self-reliance, and the potential for transformative learning,
are all possible when one cooks with others in a properly structured kitchen learning environment. Such attributes hint toward the potential of a well-planned culinary education sans modern culinary education’s sustainability shortcomings.

Lee (2007) conducted research on experiential education to discover findings complimentary with Dewey’s (1938) concepts of democratized education. Lee surveyed hospitality management students to evaluate their perceptions on experiences in and out of the classroom environment. Besides practical advantages, such as increasing career exposure and expanding networks, the researcher found growth trends stemming from out of classroom experiences in areas such as initiative, adaptability, increased leadership skills, and practical field skills such as financial management. Application outside of the classroom seems to be inspiring the kind of social empowerment, intelligence, and skills needed to enable societal change.

Emphasis on constructivist approaches such as these, are not without limitation, however. As Fenwick (2001) pointed out in her survey of experiential learning typologies, constructivism is criticized for not providing any sophisticated understandings of desire in the learning process. In her scholarship, she mapped out newer approaches to experiential learning theory which synthesized experiential education with critical perspectives and transformative experiences to account for more dynamic and inclusive perspectives:

(1) Psychoanalytic perspectives that illuminate desires and resistance emanating from unconscious dimensions of experiential learning;

(2) Situative perspectives emphasize the connection between individuals and their communities of practice in a collective explanation of experiential learning;
(3) Critical cultural perspectives focus on how power and inequity structure experience and promote social transformation through experiential learning; and

(4) Enactivist perspectives uphold an ecological systems understanding of experiential learning co-emerging in systems of human action, organizations, cultures, and nature (p. 1).

These newer typologies account for perspectives including Mezirow’s (1981, 1990, 1991, 1997) well established psycho-developmental view of transformative learning. There are strong parallels with psycho-critical, planetary, and neurobiological transformative learning theories as described by Edward Taylor (2005, 2008). The latter of these theories, neurobiological transformative theory, has a proclivity to encompass volitional motivations, emotion, visceral sensing, and kinesthetic experience (Campbell, 2006; O’Neil, 2017b; Taylor, 2008)—all characteristics related to desire (Fenwick, 2001). Chef researcher Deutsch’s (2014) work toward culinary education values based on desire is compatible as it calls for dismantling transmissive culinary teaching models (what he calls recipe-based pedagogy) to introduce more sensory responsive problem solvers and critical thinkers in the kitchen. He explained, “at the core of such pedagogy is desire: professional, gastronomic, and intensely personal” (p. 6). Here, he emphasized the potential versatility of culinary education to stimulate all the senses, to allow exploring, creating, challenging and sharing through practice—whether with success or failure.

In O’Neil’s (2015, 2017a) research, she explored relational aspects of the cooking process in adult learners, including cooking, tasting, assessing, and discussing—what she termed cooking to learn, while learning to cook. Here, the pedagogue sought to reunify mind and body dualisms through the reflective reunification of the senses. In her work, she drew
from Sterling’s (2001) scholarship, but also noted that it lacked attention to affective learning and the experience of learning. Similar to O’Neil (2015, 2017a), Hegarty (2004, 2011) called for a new approach to culinary education which steps away from the transmissive and hierarchical traditions of the practice toward more participatory and critically reflective and reflexive applications.

Culinary pedagogy theorists like Hegarty (2004, 2011), Woodhouse (2015, 2016), and Deutsch (2014) add voice to this call for change while simultaneously emphasizing aspects of culinary experiential learning which also offer great promise. Schiro (2008) said when people interact with their “…physical, intellectual, and social environments” (p. 5), they are motivated to grow and construct meaning. This very Deweyan perspective is shared by many scholars (Belliveau, 2007; Breunig, 2005; Dewey, 1938; Kolb, 1992) and is cornerstone to experiential learning pedagogy. Transformative learning theorist, Cranton (2016), also suggested the dynamics of experiential learning can lead to transformative change. Accordingly, Cranton (2016) highlighted the importance of critical reflection to pragmatist philosophy. This is also a complimentary component to Deutsch (2014) and Hegarty’s (2004, 2011) assertion that critical thinking and critical reflection should be a major emphasis in culinary education. Taylor (2009) inferred the relationship is dyadic as well, since you simply cannot have critical reflection without some kind of experience.

In Kolb and Kolb’s (2011) paper on experiential learning as applied to management training programs, they asserted a holistic interpretation of experiential pedagogy, stating experiential learning theory “…is a dynamic view of learning based on a learning cycle driven by the resolution of the dialectics of action/reflection and experience/abstraction” (p. 43). The theorists also claimed that holistic whole person learning such as this takes place at every scale
“…from individual, to the group, to organizations and to society as a whole” (p. 43). If the goal of culinary sustainability education is to perpetuate a paradigm change, then it seems a holistic experiential learning approach has the potential scalability to meet that goal. Fittingly, Kolb and Kolb (2011) believe learning, as a holistic approach, is a “process of adaptation. It is not just the result of cognition but involves the integrated functioning of the total person – thinking, feeling, perceiving and behaving” (p. 43). They stated similar dual propensities as Taylor (2009).

Kolb’s ideas on experiential education are usually a lightning rod for discourse in academia, as Heron’s (1992) work shows. Heron challenged much of Kolb’s (1984) theory, from its phenomenological suppositions, to its personal and experiential validity, to its interest in privileging thought over feeling (York & Kasl, 2002). Addressing the former point, Yorks and Kasl (2002) posited a whole person learning approach to challenge the dominant overemphasis on critical reflection, suggesting there has been a “…theoretical inattention to the role of affect” (p. 176). To address this need, they channeled Heron’s (1992, 1996) scholarship, to draw attention to the power of learning-within-relationship, which they explained is fundamentally different than the Deweyan pragmatism so dominant in the American discourse. Essentially, affective, it suggested that the living experience also matters, not just the reinterpretation of it.

In terms of holistic learning and being, Miller’s (2019) research on the subject also emphasized a holistic, whole person approach which encourages consideration of the following elements:
• Aims for wholeness/well-being based on interconnectedness with our bodies, those that surround, and our experiences. Increases sense of well-being and happiness, accepts “…the ‘shadow’ within” (p. 8);

• Considers wisdom and compassion, seeing and acting on deep insights “…into the nature of things” (p. 8). It includes critical perspectives, showing compassion for not only the oppressed, but also those who oppress;

• Sees awe and wonder in the natural world, in the arts, and motivates through a relationship with curiosity;

• Fosters a sense of purpose/mastery in self and in learners. Helps us understand our role in the circle of life, in fulfilling our purpose, and in motivating us. Interests and roles in life are subject to change and evolution.

For culinary learners, both the affective experience and the reflection on experience are richly opportune in culinary education. Such experiences offer pathways towards transformative learning both in individuals and outward expansively. The question remains however: how can culinary education leverage its experiential learning propensities, holistically, to shift away from its modern form to foster a more sustainable approach?

**Pedagogies of Sustainability Education**

proposed, and what Lange (2018a) suggested “…is a profound act of hope in the future” (p. 2).

Lange (2010) provided a snapshot of the environmental education field to illuminate its breadth and complexity. Citing the work of Merchant (2005), Capra (1992), Edwards (2005), and Bookchin (1995), among others, Lange (2010) shared hallmark aspects of deep ecology, spiritual ecology, social ecology, environmental justice, ecofeminism, sustainable development, and sustainability, in order to tabulate their nuances and shared qualities toward a common vision for environmental education. Among her conclusions, she found environmental adult education to involve “…a fundamental rethinking of the purpose of adult education and its role in the human and more-than-human world. Asking the question ‘what is adult education for?’…” (p. 312). For chef learners destined to fulfill a workforce supply need, reflection upon this question is warranted.

Environmental or sustainability education targeting chef learners must be grounded in a pragmatic approach to be effectively adopted, much like Frisk and Larson (2011) proposed to assimilate behavior change research and sustainability competencies. The two researchers determined “the challenge lies in developing methods and actions through which students are effectively acquiring key competencies in support of sustainable actions” (p. 7). They offer a pedagogical approach which is output-oriented through the four competencies listed in Table 2.
Table 2. Preferred Competencies & Approaches for Sustainability Education

<table>
<thead>
<tr>
<th>Competency</th>
<th>Pedagogy</th>
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<tbody>
<tr>
<td>1. Systems thinking and an understanding of interconnectedness</td>
<td>Interconnections among the environment, economy, and society, including impacts, trade-offs, feedbacks, and unintended consequences of individual and collective actions</td>
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<td></td>
<td><em>Methods</em></td>
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<td></td>
<td>Real-world case studies with place-based lessons and activities</td>
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<td></td>
<td>Interdisciplinary approaches to problem-based learning</td>
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<td></td>
<td><em>Avoid ‘assembly-line’ fragmentation of subjects and oversimplification of issues as simply right/wrong or true/false</em></td>
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<tr>
<td>2. Long-term, foresighted thinking</td>
<td>Future orientation in terms of achieving inter-generational equity, in minimizing the long-term impacts of human actions, realizing societal visions of the future and developing transition strategies and evaluative techniques</td>
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<tr>
<td></td>
<td><em>Methods</em></td>
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<tr>
<td></td>
<td>Visioning exercises Forecasting &amp; back-casting activities</td>
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<td></td>
<td><em>Avoid ‘one-size fits all’ solutions in visioning activities</em></td>
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<tr>
<td>3. Stakeholder engagement and group collaboration</td>
<td>Democratic decision making, including intra-generational equity in participation and consideration of plural perspectives and transdisciplinary collaborations</td>
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<tr>
<td></td>
<td><em>Methods</em></td>
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<td></td>
<td>Group projects and collaborative activities</td>
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<td><em>Avoid evaluating student solely based on individual activities and outcomes</em></td>
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<tr>
<td>4. Action-oriented and change-agent skills</td>
<td>Transformational consumer actions, along with civic and community engagement</td>
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<td><em>Methods</em></td>
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<td></td>
<td>Experiential lessons including project-based learning, community service-learning, and place-based activities Commitment pledges</td>
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<td></td>
<td><em>Avoid informational learning solely based on declarative knowledge</em></td>
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*Note.* Adapted from Frisk & Larson (2011).
The researchers believed these competencies equip learners with the knowledge of concepts and the skills and abilities to challenge complex sustainability issues and become change agents (Frisk & Larson, 2011).

**Education as Sustainability.** Looking toward the future and realizing that education today is out of synch with the problems the world will face ahead, Sterling (2001, 2009, 2011) echoed a similar change. He notably pointed out the “…sedative mirages of consumption and materialism” (2001, p. 23) which blind and distract humankind from recognizing problems in the world and addressing them. Here, the researcher revealed the interlocking relationship between education, and social, economic, and cultural systems. Education mirrors the other systems, which in modern times shapes graduates to reflect the current status quo, rather than shaping them to address future needs in securing a more sustainable tomorrow (Blake et al., 2013; Greenwood, 2010). Sterling (2001) asserted it is sustainability education, a participatory ecological education, which strives to achieve transformative change. It does this by being “…essentially transformative, constructive, and participatory” (p. 35).

The researchers believed these competencies equip learners with the knowledge of concepts and the skills and abilities to challenge complex sustainability issues and become change agents (Frisk & Larson, 2011).

Sterling (2001, 2011) said that reaching such transformation can occur by transitioning through “…progressive responses, from accommodation, though reformation to transformation [which] may be made at any level—by an individual educator, an institution, or a whole educational system” (2001, p. 57). He tiered these three stages as follows:

- Education *about* sustainability;
- Education *for* sustainability; and
- Education *as* sustainability (p. 60-61).
Sterling’s stages build off of Bateson’s (1972) model of learning and change, which explains that education about sustainability is the easiest and most realistic to incorporate immediately into present transmissive educational structures (O’Neil, 2018). It teaches the subject of sustainability but falls short of achieving paradigm-shifting change. Sterling considered this phase as first-order learning, where learning fails to change structures, maintains the status quo, stays within accepted boundaries, and adapts to current systems, leaving “…basic values unexamined and unchanged” (p. 15). It is instrumental learning with no real action included.

Education for sustainability pairs with Sterling’s (2001) second-order learning stage, where value systems and capability bias are introduced to favor sustainable change. It involves an examination of contradictions stemming from unaffected deep structures, such as “unqualified economic growth” (Sterling, 2001, p. 60). Some reformation occurs as second order learning and change “…involves critically reflective learning, when we examine the assumptions that influence first-order learning” (p. 15). Sterling attributed adages like ‘thinking about thinking’ and ‘learning about learning’ to this order of learning and considers it to be an intrinsic form of education (2010a, 2011).

Education as sustainability matches Sterling’s (2001) third-order learning. This is a radical paradigm shift transforming both the individual learner and society overall. At this level, quality of learning and process are seen as being creative, reflective, and participative (Sterling, 2001). A level of learning integrating action, deep transformative learning is the most threatening to institutions as it “is in conflict with existing structures, values and methodologies, and cannot be imposed” (p. 61). Learners who have experienced transformative change through third order learning “…see things differently [because]… it is creative, and involves deep awareness and alternative worldviews and ways of doing things”
The possible disorientation (Lange, 2004; Sipos et al., 2008) from such an experience causes learners to reorganize their perceptions of themselves and the world structurally (Cranton, 2005; Lange, 2013; Mezirow, 1991). Sterling (2001) explained, these learners become more process, development, and action oriented. They gain an integrative and functional view which values critical and creative competencies (Sterling, 2001, 2011). Lange (2013) elaborated on the phenomena,

Adult frames of reference are comprised of meaning perspectives, the habits of mind or ways of thinking that comprise a personal paradigm or world view, as well as meaning schemes, the attitudes, ideas, and beliefs within a given paradigm. While it is easier for one to rethink their meaning schemes, it is examining the very premises of one’s thought system and confronting realities that no longer fit within one’s existing worldview, that is truly transformative (p. 2).

For adult learners, this experience may suddenly lead to shifts in values, attitudes, and actions which cause changes in their life with potential impacts on their work/profession, family, community and broader society. Societies who have experienced transformative change through third order learning intend to disturb current infrastructures (Lange, 2004, 2013; Sipos et al., 2008; Sterling, 2001). Lange (2004) explained that “…critical transformative learning is not just personal transformation but societal transformation so that individuals can be creative producers of self and of society and its political and economic relations” (p. 122), including educational relations.

Calls for sustainability education aim to transform the modern paradigm toward a more sustainable future. Schools of thought related to ecological thinking have us reconsider education in this era by looking toward systems thinking, long-term,foresighted thinking,
collaboration, and an orientation towards action. This challenges wicked problems in the world around us with enabled change agents. Transcending transmissive education toward a more holistic ecological education, such as in sustainability education, forges a path forward by enriching individuals and society, both inwardly and outwardly.

**Pedagogies for Transformative Learning**

Transformative learning theory has been well studied by scholars (Cranton, 2002, 2016; Freire, 1970; Lange, 2012, 2013, 2018; Mezirow & Taylor, 2009; O'Sullivan, 1999; see also O’Sullivan & Taylor, 2004), including conditions, characteristics, consequences, and typologies of approaches. Notions that: transformative learning cannot be taught or modeled; learners must be adults; the process is age dependent; and a disorienting dilemma is required, illustrate the remarkable breadth, potential, and intrigue of the field.

Lange (2013) premised her scholarship on modern transformative learning by tracing its origins to the Enlightenment, where “the fascination with transformation is connected to assumptions that emerged… such as the belief in the improvability of societies and individuals, and the desirability, even necessity, of profound change over tradition and continuity” (p. 1). Sustainability educators (O’Neil, 2017a, 2017b, 2018; O’Sullivan & Taylor, 2004) would agree, in context of the global challenges of today, the need for a societal shift has never been so paramount. Lange (2013) explained why: “education can contribute to social transformation by enabling learners to understand their historical conditions, become conscious of group interests, and organize to advance their interests, thereby creating a just society” (Lange, 2013, p. 5).

There are many different approaches to transformative learning, such as in Mezirowean, Jungian, and Freirean views on the theory. Cranton (2016) followed Mezirow’s
(2012) definition of transformative learning, which she described for the learner as “…a process by which previously uncritically assimilated assumptions, beliefs, values, and perspectives are questioned and thereby become more open, permeable, and better validated” (Cranton, 2016, p. 2). Under this premise, Cranton also drew distinction where she claimed influence from colleagues such as Dirkx (2012), who “incorporate imagination, intuition, soul, and affect into their understanding of the process” (Cranton, 2016, p. 2). Dirkx (1998) also distinguished the differences between the instrumental view of education and the transformative view, citing practitioners as having “a different end in view, often using quite different instructional strategies… different assumptions about the aim and process of adult learning” (p. 2).

**Theoretical Perspectives of Transformative Learning.** Dirkx (1998) surveyed four different strands of transformative learning and showcased key researchers who each contributed to the body of knowledge in distinctly different ways. There he contrasted their differences while sewing together similarities in order to present a unified vision toward achieving a transformative pedagogy.

In his first category, titled *transformation as consciousness-raising*, Dirkx (1998) presents a synopsis of Freire’s (1970) work in which he used emancipatory critical self-reflection to trigger transformative learning in Brazil’s poor and in other places where oppression took hold over people initially unaware of their circumstance. Freire (1970) called this theory of transformative learning through consciousness-raising, *conscientization* (Dirkx, 1998; Lange, 2013; Sterling, 2011), describing it as “…a desire for political liberation and freedom from oppression… a process in which learners develop the ability to analyze, pose
questions, and take action on the social, political, cultural, and economic contexts that influence and shape their lives” (Dirkx, 1998, p. 3).

Dirkx (1998) attributed his next category, transformation as critical reflection, to the work of Mezirow (1991). Widely associated with transformative learning in adult education, Mezirow (1991) believed transformative learning to be core to adult development (Dirkx, 1998; Lange, 2013), and though he was clearly influenced by Freire (1970), his approach to the theory is characteristically different. Dirkx (1998) explained, “…Mezirow’s view represents a distinct understanding of what transformation means within the actions of adult learning” (p. 3), where he focuses more on the “psychological and cognitive characteristics of the process” (p. 4). Mezirow’s (1991) interpretation of transformative learning emphasized the development of meaning making through reflection, critical reflection, and critical self-reflection from learners’ experiences. The pedagogue asserted such reflections trigger perspective transformation—changes in previously untested long-held assumptions. Also describing Mezirow’s work, Lange (2013) explained the ultimate purpose of transformative learning is “…to develop more inclusive, discriminating, permeable, better validated, and autonomous perspectives (Mezirow, 1991, 2000; Cranton, 2000, 2005)” (Lange, 2013, p. 2).

In Dirkx’s (1998) third category, transformation as development, he looked to the work of Daloz (1986) who suggests “…understanding transformative learning as growth” (Dirkx, 1998, p. 5). Daloz (1986) posited that learning experiences and developmental changes in life inspire transformative learning as adults try to construct meaning within their lives. A stark difference between Daloz’s explanation of transformative learning and that of Freire (1970) and Mezirow’s (1991) interpretations were that Daloz “…depends less on rational, reflective acts and more on holistic and even intuitive processes” (Dirkx, 1998, p. 6).
Transformation as individuation is the fourth and final type of transformative learning Dirks (1998) recapitulated. This interpretation of transformative learning is progressed by Boyd (1991; see also Boyd & Myers, 1988), who postulated a developmental perspective similar to Daloz (1986) and Mezirow (1991) focused on understanding and facilitating personal transformation, but from a Jungian perspective. Lange (2013) again summarized, “psychoanalytic transformative learning concentrates not on cognitive conflicts or social conflicts, but psychic conflicts…” (p. 6).

Drawing more critical conclusions, Lange, in 2013, offered a more updated review of transformative learning, albeit with some nuanced differences in the organization of Dirks’s (1998) categories. Notably, she interrogated transformative learning, submitting that its “…constellation of modernist ideas related to liberation, freedom and emancipation—whether for individuals, societies or both” (p. 1), is restrictive. She approached Dirks’s categories with four additional interpretations of transformative learning including, a spiritual perspective, feminist perspective, post-colonial perspective, and an ecological perspective (Lange, 2013).

In spiritual perspectives, Lange (2013) described researchers who challenge positivist rational systems to submit religious and cosmic transformative change which can transcend learners toward gaining greater wisdom and deeper ways of knowing and being, where they can experience “…holistic learning, spiritual practices, and humility rather than the mastery and achievement of the modernist world” (p. 9).

In feminist transformative learning, she introduced a number of feminist scholars who “…began disrupting the canons, discourses, theory-building, and institutional control carried out by academic men, including their domination in critical theory and critical pedagogy (Luke & Gore, 1992)” (Lange, 2013, p. 9).
In post-colonial transformative learning, Lange (2013) presented an emancipatory movement for Indigenous peoples to decolonize “…their minds and cultures of the positional superiority of western knowledge, addressing the divided consciousness of the colonized, and representing new knowledge back to the West” (p. 9).

In Lange’s (2013) ecological interpretation of transformative learning, the academic highlighted O’Sullivan’s (1999) cosmological perspective which aims to recombine “the human story” (Lange, 2013, p. 10) with the larger “Universe story” (p. 10) in an attempt to, transcend modernity to “…reclaim a sense of human purpose, and develop a planetary consciousness“ (p. 10). Attempting to meet a similar goal, Clover’s (2004) take on environmental adult education outlined a list of qualities such a pedagogy must encompass (Lange, 2013). It “…must critique the structure of globalization, teach key ecological principles, understand the natural world as a site of experiential learning and teacher in its own right, and develop an ecological identity” (Lange, 2013, p. 10). This interpretation is a far take from the four frameworks Dirckx (1998) originally summarized. Qualities he envisioned are complimentary to Clover’s (2004), but much more inward facing. He summarized his qualities of a transformative experience as constituting: “…what is learned has to be viewed as personally significant in some way; it must feel purposive and illuminate qualities and values of importance to the person or group” (Dirkx, 1998, p. 9).

**Transformative Learning as Holistic Practice.** In Lange’s (2004; 2012, 2013, 2017) scholarship, the researcher not only surveyed the transformative learning theoretical landscape, she also contributed extensively to it through a sustainability pedagogical approach. She stressed “the need for transformative learning theory to inform sustainability education and to help build sustainable communities is critical (Lange, 2012, p. 197). She categorized her own
contributions within the ecological perspective of transformative learning, describing her work as having,

…utilized complexity theory and sustainability to transform transformative learning, toward understanding; knowledge as emergent and participatory; the importance of relations between human and living systems – both self-organizing; transformative processes as highly participative; the dynamic balance between order and chaos; and the mind as trans-individual intelligence (p. 10).

Concluding his typology, Dirkx (1998) presented some broad characteristics of what transformative pedagogies encompass. He spoke of emancipatory qualities, where learners break from “…coercive influence through reflection, dialog, critique, discernment, imagination, and action” (p. 9), and move toward personal and social change—a means of enhancing freedom posited by all the scholars of his four main transformative learning types. He described transformative learning as “…essentially a way of understanding adult learning as a meaning-making process aimed at fostering a democratic vision of society and self-actualization of individuals” (p. 9).

**Setting Conditions for Transformative Learning.** Cranton (2016) asserted that TL centers around setting the right conditions. The researcher states that before learners can partake in critical self-reflection, that there is a “…prerequisite that the learner already be empowered to some extent or at least working in a context which is empowering and supportive” (p. 91). To underpin her assertion, she offered four ways to promote empowerment within a learning environment, as follows by:

(a) becoming aware of power relations in our practice;

(b) exercising power in responsible and meaningful ways;
(c) empowering learners to exercise power through and in discourse; and

(d) encouraging learner decision making (p. 93).

Cranton noted further that the consideration of individual differences in learners is also an important aspect, while reminding readers transformative learning, being a personal experience, cannot be ensured. She elaborated “learners must decide to undergo the process themselves; otherwise we are venturing into indoctrination, manipulation, and coercion” (p. 105). From there, she presented methods for prompting students with opportunities to participate in critical self-reflection and self-awareness, including questioning activities; consciousness-raising experiences; reflective journaling; experiential learning; recalling and summarizing critical incidents in one’s life; and art-based learning projects which promote “…transformative experience in their creation” (p. 119). Cranton (2016) also expressed the importance of support for learners, stressing the need for authenticity, strategies, and introspective self-aware educators. Taylor (2009) portended similar traits when he summarized what he considered to be the core elements of transformative learning: “…individual experience, critical reflection, and dialogue… [in addition to] a holistic orientation, awareness of context, and an authentic practice” (p. 4). Where his work diverges from Cranton’s (2016) is in his different degree of emphasis in the areas of holistic orientation, awareness of context, and learner-centered teaching.

Taylor’s (2009) take on holistic orientation underlined affective and relational “…other ways of knowing” (p. 10), which is a different tactic than the more commonly researched critical-reflection approach. In this method, emphasis is placed on emotional and cognitive psychological connections and a learner’s ability to “…question deeply held assumptions” (p. 11). Effective strategies, in addition to didactic pedagogies, include presentational and
expressive ways of knowing. These approaches are touted as being whole-person oriented and telling of “…the psycho- and sociocultural dynamics of the individual and the group within the classroom” (p. 11). Presentational classroom activities are similar in conception to Cranton’s (2016) art-based learning projects concept, while the expressive approach is more environmentally considered. Faculty must “…work on their holistic awareness, creating a learning environment conducive to whole person learning” (Taylor, 2009, p.11). This approach evokes “…experiences for greater exploration, help[s] learners become more aware of their feelings and their relationships to sense making, and help concretize an experience allowing the learner to reexperience the learning experience through expressive representation” (p. 11).

Strategies for fostering transformative learning cover a lot of breadth, illustrating many approaches and areas of focus available for the educator. For culinary education, some pieces are potentially there, such as art craft and creativity (through cooking), but the whole person, expressive, reflective, and affective elements are still missing.

Taylor (2009) stated the importance of contextual awareness for faculty planners, explaining that the surroundings of the learning event; the personal and professional situation of the learners (their prior experience); and the background context shaping society at the time, are all important considerations for the educator who is setting up exercises and conditions for transformative learning to occur. In his final point, Taylor introduced the paradox of the learner-centered teaching concept. From this perspective, Taylor described the teacher as a facilitator “…who strives to balance power with learners through shared decision making, evaluation, and other learning responsibilities…” (p. 14). This approach is isolated from his other propositions, in-that it is innately different from one perspective, and all-encompassing from another. The paradox is revealed based on which way you look at it. Is the faculty member
applying a method like any other in teaching, or since all education can be considered transformative, is transformative learning just regular learning? Taylor summarizes the question, “are learner-centered teaching and fostering transformative learning one and the same?” (p. 14). Based on the enigma, Taylor called for more research to settle on an interpretation but posits a good starting place would be in the “…theoretical orientation of transformative learning held by the educator” (p. 14). This study builds on these pedagogical theories (Appendix B).

**Challenges to Pedagogical Change**

Considering such a novel approach to pedagogical reform, implementing sustainability theory into western education will be a deep-rooted challenge. Procedures and expectations, outcomes and assessments, even students, teachers, administrators, and trustees of schools, all propagate familiar assumptions about what education is and what it ought to be for. Gould (2014) expounded “by not surfacing the assumptions found in schools, the consequence is that we lose sight of why the school was designed in the first place and, therefore, we try to make ‘new ideas and practices’ fit the ‘old structure’” (p. 94). This old structure has several causes, chiefly among them is the industrial mindset. Orr (1992) elaborated “foremost among these [assumptions] was the belief that the economy ought to be the central institution of modern life. We became Economies with societies instead of Societies with economies” (p. 178). Sterling too, while assessing today’s education industry, did not beat around the bush, declaring “…we all know, education is about jobs, and supporting economic competitiveness” (Jickling & Sterling, 2017, p. 32; see also Blake, Sterling, and Goodson, 2013). Greenwood (2010) mirrored this assessment, touting that a
…nationalistic and militaristic rationale means that the fundamental [sic] purpose of education in the U.S. and elsewhere is not to educate young people to better understand themselves and their relations to others with whom they share the planet, human and other-than-human, but to prepare them for the economic marketplace, an enterprise that has always been grounded in questionable intentions and has always produced questionable results for people and places worldwide. … (p.140).

This point is clearly exemplified in culinary education, where the first culinary schools were founded to solve labor shortages (Brown, 2005a), and even to this day market student career prospects over other gains of a higher education.

To address the shortcomings of education today, educators need to cultivate change agents for tomorrow. Sterling (2001) pointed to sustainable education as the solution to the paradoxes which haunt modern education, and to the systemic issues of our times. Wheelahan (2015) joined him, along with many prominent researchers (Burns, 2011; Jickling, 2017; see also Jickling & Sterling, 2017; Lange, 2004, 2012; O’Neil, 2015, 2017a; Orr, 2004, 2016; O’Sullivan, 1999; see also O’Sullivan & Taylor, 2004), all calling for changes in the way we teach and learn, and for personal and societal transformation. Much of this change is not only needed in general education, but also especially in culinary education, where dedication to tradition (with all its baggage), and a separation of mind and body, are still prevalent today. In developing a CSE which pushes for sustainable change in not only the culinary education field, but also the culinary industry, transformative sustainability education must be the priority.

Summary

Scholars postulate the modern culinary industry and in turn, culinary education, is unsustainable due to rampant hierarchies of inequity based on an allegiance to traditions
housed in a dualist paradigm separating thought and action as well as mind and body. Stuck in a negative feedback loop, learners in culinary education become indoctrinated to believe in power and competition pursuits, in established hierarchies of domination, in objectifying resources, food and each other, and in reductionist and positivist thinking. Researchers posit, these pupils learn to distinguish their work by disparaging “the other,” and by making food and cuisine less accessible. As these learners become the “masters,” they reinforce the negative feedback loop by instilling their knowledge and values onto the next generation.

Despite the current state of the culinary education and the culinary industry, the role of the chef still holds enormous potential in creating a more sustainable future. Many academics describe a revolution in food which defies the industrial food tradition and moves the industry in new directions. Others suggest chef learners who gain knowledge and a voice about their products and the people who produce them, about valuing equity, justice, community, environmental preservation, Slow Food, and each other, are primed to become change agents. Transforming the modern paradigm of the food system and culinary arts can secure a role for the chef in sustainability which can untangle a global food supply by localizing and regionalizing it. Through advocacy and action, chefs can help feed the world in more sustainable ways.

To realize the potential of chefs to challenge the modern culinary industry to operate and become more sustainable, educational sustainability pedagogues suggest an alternative paradigm of teaching and learning culinary education by integrating transformative learning into curricula augmented with sustainability themes. Still though, just adding subject matter topically is not enough to assure sustainable change. Transformative sustainability education theorists call for the teaching about, for, and as sustainability in order to provide more
opportunity for change in not only individuals, but also society as a whole. The combination of sustainable content like systems thinking applied to complex, entangled, and wicked food system challenges, provides a platform for learners to consider new value propositions while applying theory into practice. The ecological approach of the ten essential propositions for culinary sustainability education addresses many of the shortcomings and challenges revealed by the critical postmodern assessment of modern culinary education laid out in this chapter, while also projecting a path toward a transformational change in culinary education and the culinary industry. The next question prompted by the assembly of these propositions is in regard to how to test them, and in anticipating the challenges associated with their actualization. Embodying sustainability in action can help learners move the modern foodservice industry and culinary education beyond master and apprentice models, domineering reductionist mindsets, dualist and positivist rationalization, and injustice, to a more sustainable alternative future.
Chapter 3. Methodology & Research

Story 3. Humble Pie

Long before I became a faculty member at Johnson & Wales University, I had gotten my first taste of teaching as a master’s student. I was assigned to design and teach a cooking class for minority low-income mothers at a community kitchen. I was excited at the prospect of developing my first cooking program and a menu that would be easy, healthy, and appetizing for average American families.

Early in the course, I established great rapport with the mothers participating in the program. I was young, energetic, competent, and excited to be cooking with them. I loved teaching and knew I could be good at it, but sometimes I got carried away and even succumbed to the temptation to show off. I remember one lesson in particular, when one of the women was standing at the stove, stirring vegetables in a pan with a wooden spoon. I stepped in and began pontificating.

“Ladies, this is technically a sauté pan. Sauté is French for, ‘to jump,’” I announced. Then, I demonstrated how to tilt the pan forward, letting the vegetables slide to the front edge, before flipping it back with a flick of the wrist, tossing the vegetables in an impressive maneuver rather than simply stirring.

“You don’t need a spoon,” I said with bravado.

Some of the women “oohed” and “ahhhed.” But another wasn’t so easily impressed.

“Well there he goes again. ‘Look at me! Look at me! I’m a big hot chef!’” she mocked.

The message hit me hard. The room spun, and I felt disoriented. I lost my sense of security. I felt exposed. I felt embarrassed. And I knew that I deserved to feel that way.
What was I doing?! What was I thinking?! These women were there to learn how to produce healthy meals for their families on a limited budget. Here I was, living out some kind of celebrity chef fantasy, trying to impress them with what I could do, instead of helping them realize what they could do. Did these students really need to know how to cut a “brunoise” or toss vegetables with a flick of their wrist, or call a sauté pan by its proper name? Did they really need me to show them techniques that were unnecessary for home cooking? Had I made them feel bad about themselves, about their cooking? Who was I to do that? As the sole white male in the room, was I really flaunting my privilege? Who was I to do that? I realized at that moment, that I had been making cooking LESS accessible, the opposite of my charter. I felt chastised and ashamed.

I carried my shame with me into our classroom kitchen the next day, my confidence drained, my voice unsteady.

“I’ve been thinking about this all night, and I want to start today by apologizing to you all,” I told them. “It occurred to me yesterday that I have been getting carried away with showing off, and I think that has been wrong of me. You’re not here to see me prance around bragging about what I can do. This is supposed to be about you and your families. Not about me.”

The woman who had chided me the day before crossed her arms and jumped in with a sardonic, “Thank you!”

I started to say more but was cut off as a few of the other participants shook their heads and reassured me.

“I’ve been having a great time,” one of them said.

“I’m learning so much,” said another.
But really, it finally dawned on me, it was I who was learning, “so much.”

***

The experience I had as a young and naive educator in my first teaching role was not only humbling, but it also illustrated the importance of understanding a learner’s perspective. Programs may be designed with the best of intentions, but there is no guarantee how they will be experienced or if they will meet learner needs. In this research project, I wish to investigate the internal dynamics of educational programs from the perspectives of program participants, program architects and teachers, as well as post experience reflections. I will be employing a case study design as a method for analysis as a way to consider multiple perspectives.

**Overview**

This chapter will provide a synopsis of my research project plan. My theoretical framework and ten theoretical propositions for CSE will be presented, as will my methodology, research methods, the setting for my research, and a detailed review of my research subjects. The scope of my project will be laid out, as will my method for analysis. Finally, the trustworthiness of my study will be presented, ethics will be examined, and delimitations will be reviewed.

To investigate the relevance of my proposed ten goals of CSE for program design, I conducted an ethnographically-informed series of case studies. In this study, I sought to investigate the following three cases: first, I conducted semi-structured qualitative interviews from leading scholars in sustainability education related fields. This case group was named the *scholar informants*. Second, I conducted ethnographic participant-observations and semi-structured qualitative interviews with participants in a food related workshop program which is compatible with sustainability education programming. This case study group was labeled
the **workshop participants**. Third, I conducted semi-structured qualitative interviews with alumni of the Wellness & Sustainability Concentration which inspired the Bachelor of Science Degree in *Sustainable Food Systems Program* currently under development at my university. This case group will be called the *chef graduates*.

My research questions were:

- What constitutes a culinary sustainability education and what principles might guide future programming?
- How might traditional culinary arts programming be transformed and operationalized into a program plan for culinary education *as* sustainability? (structures, relations, goals, practices, conditions)
- What desired outcomes and barriers to this transformation is experienced by learners in a higher education setting?

Any risks associated with this study pale in comparison to the risks society faces ahead if humanity continues to operate in such an unsustainable fashion.

**Theoretical Framework**

Critical postmodern epistemology is a union of critical theory and postmodern thought. Lather (1991) stitched these together when she described the intent of this paradigm as “…’a critical social science’ in ‘the postpositivist intellectual climate of our times’…” (Briton, 1996, p. 95). Alone, critical theory was described by Horkheimer (1982) as being meant “…to liberate human beings from the circumstances that enslave them” (p. 244). To that point, Paulo Freire (1970) posited that emancipation is a primary goal of critical theory (Capra, 2002; Gadotti, 1994), where it is theorized to happen through reflection, transformation, and the sudden awareness of one’s own situation (Freire, 1970; Mezirow, 1981, 1990). Of striking
CULINARY SUSTAINABILITY EDUCATION

importance, Freire (1970) also charged that education in the western world is oppressive, where power and classism is reinforced, where dualisms continue, and where transactional, *banking education* arrests critical thinking, action for social change, potential for liberation, and human agency. hooks (2010) supported this assertion as she pushed for an engaged pedagogy to prompt participation between teacher and learner to apply critical thinking to the classroom.

Postmodern perspectives, as a whole, reject positivist claims of universal truths in the modern age, joining other new perspectives pushing toward a postmodern era. This dramatic transformational epoch since the 1960s is termed the “post-modern turn” which,

…involves an encounter with experiences, ideas, and ways of life that contest accepted modes of thought and behavior and provide new ways of seeing, writing, and living… leav[ing] behind the safe and secure moorings of realms of thought and experience… engaging emergent forms of culture and everyday life, as well as confronting the advent of an expanding global economy and new social and political order (Best & Kellner, 1997, p. ix).

Critical postmodernism joins this calling for a new postmodern age, where Briton (1996) described it as “…eclectic rather than unified, idiographic rather than nomothetic, and concerned with the quotidian, rather than the eternal” (p. 94). It is also situationally responsive, in-that it holds no universal truths, and considers all things within their situated meaning. To declare a truth would be “…a misrepresentation of the dynamic process that constitutes understanding” (p. 27). As with “…other postmodernisms of resistance…,” (p.94), Briton [cites Lather, 1991] asserted critical postmodernism contributes to the “theory and practice of liberatory education… to explore the implications of feminism, neo-Marxism and poststructuralism for developing inquiry approaches in the human sciences that move us
CULINARY SUSTAINABILITY EDUCATION

toward ways of knowing which interrupt relations of dominance and subordination.” (p. 95).
Briton also referred to Apple’s (1991) assessment of Lather’s (1991) critical postmodernism,
describing it as being similar to Freire, in-that it is a dialogical and mutually educative
experience which leads to a “self-sustaining process of critical analysis and enlightened action”
(p. x). Such characteristics are compatible for use in breaking down the power relations, dualist
objectifications, Fordist industrial mindset, and other such constructs at play in modern
culinary education and industry.

In Sterling’s (2001) evaluation of deconstructive postmodernism, he pointed out it is flawed, “…leav[ing] us drifting in a sea of relativism” (p. 50). Consequently, he claimed others
in the debate are looking for a “…postmodern, ecological alternative that is more adequate and
creative—and which gives us a basis for action” (p. 51). Due to its flexibility, adaptability and
propensity for action, critical postmodernism may be the ideal lens for which to gaze into the
dynamics of modern culinary arts education and the patron industry which informs it. In
Chapter 2, I researched how today’s modern foodservice industry is an industrial construct
designed for economic profit at the cost of ecological and human capital. This paradigm
originates from centuries-old patriarchal and monarchical structures which objectify humans,
nonhumans, and the natural world, reducing those who work in food to laborers vying for
power by perpetuating inequities which stem from Cartesian dualist tendencies prevalent in
western culture.

Aspects of critical theory pair well with elements of culinary pedagogy. Food is
commonly problematized through a critical lens by many researchers (Hayes-Conroy & Hayes-
Swan & Flowers, 2015). Investigations often look at social, environmental, and economic intersections of food and power, where food system dynamics and socio-ecological food justice are at play (Lewis & O’Neil 2019). Such a critical analysis of both entangled and objectified food connects well with an assessment of culinary pedagogy as learners strive to become chefs who get to choose how food is sourced, what food to cook, who to cook it for, how to cook it, how to talk about it, and who gets to help.

Critical theory also associates well with experiential education theory, a theory commonly evoked in culinary vocational education. In much of Breunig’s work (2005, 2009; see also Breunig et al., 2014), the researcher explored the combination of critical theory with experiential learning pedagogy, where she asserted both frameworks envision creating a more socially just world. Breunig (2005) referred to Dewey (1938) to suggest “…learning may be enhanced through an intentional experience” (p. 108), and Freire (1970) to assert “…educational praxis should combine both action and reflection as part of the educative process…” (p. 108).

In culinary education, such a combination would have learners applying critical perspectives to guide their experiences in taking meaningful actions to correct ills they have identified. For the educator, fashioning such experiential opportunities for critical reflection by students who work with intention is a key ingredient to deep learning (Belliveau, 2007; Breunig, 2005; Dewey, 1938; Freire, 1970). Without deep learning, such unreflected-upon experiences can be thought of as miseducative or simply play (Breunig, 2015; Dewey, 1938). Fortunately, educators are in the best position, as Kolb (1992) touted, “experiential educators are such ‘handy’ persons… as program designers, implementers and practitioners, they constantly adapt and modify practice according to feedback from the interaction of their
abstract and/or ideal mental models with the empirical ‘real’ world of educational practice” (p. 25). Here, Kolb drew out an important key feature, that experiential educators can, like their students applying critical action, receive immediate feedback to better inform future experiences. Experiential education, which can be considered both a philosophy and a methodology, centers on building habits of mind. For the critical pedagogues, questions may arise however as to how those habits are built, who decides how they are built, what is built, and at what cost?

Similar to Breunig (2005) and Dewey’s (1938) emphasis on the importance of the educator’s mandate to construct meaningful experiences, Greenwood (formally Gruenewald, 2003) challenged educators to carefully consider place as he combined place-based education and critical pedagogy into a “critical pedagogy of place.” In uniting these pedagogical traditions, Greenwood hoped to solve a long-known shortcoming of critical pedagogy—that its emphasis on human power struggles perpetuates an absence of ecological consideration. Greenwood (Gruenewald, 2003) argued that their convergence “…offers a much needed framework for educational theory, research, policy, and practice” (p. 3), stating they are “…needed so that the education of citizens might have some direct bearing on the wellbeing of the social and ecological places people actually inhabit” (p. 3). To that end, Greenwood (2010) preceded later researchers, like Blake, et al. (2013), in believing that the assumption that education should be driven by economic need, by neoliberal capitalistic, and meritocratic forces, is an assumption which must be contended with. Such supposed truths need to be reconsidered through a critical postmodernist lens.

Presently, the role of modern culinary pedagogy is to create a workforce, a siloed and silenced group whose job is to prepare food for others (Wheelahan, 2015). In culinary
pedagogy, place can play a large role in shaping a chef’s operating space. For instance, modern culinary education tends to limit place to a school kitchen, rather than a local or regional food system and its surrounding environment. Similar to how the absence of ecological thought in critical pedagogy (and education in general) perpetuates a lack of ecological consideration in learners, chefs trained to operate only in a kitchen vacuum will be unpracticed and lacking skills to work within their communities and local and regional food systems—often resulting in a “them or us” duality with the world (Palmer, et al., 2010; Woodhouse, 2015).

Like Greenwood (Gruenewald, 2003), Kahn (2010) also concerned himself with critical theory’s absence of ecological consideration, taking it further to identify dualist propensities in objectifying animals, the Earth, environment, and other non-humans as objects or resources to fight over. Even in Freire’s (1970) work, such dualities are evident. For Kahn (2010), like so many critical ecological pedagogues before him (Klein, 2007; Merchant, 2005; Sterling, 2001, 2010a; Orr, 2003, 2004, 2016), he draws a wide net to capture a snapshot of sustainability issues plaguing society in the modern era. Everything from the carbon economy to unsustainability in the food system, to the treatment of fellow humans, animals, and nature—all are implicated by Kahn (2010) in his diagnosis of western-caused unsustainability the world over. Boiling it down to ecoliteracy, Kahn (2010) stated that the increase in natural and social disasters around the world which result from the exploitation of natural resources and the environment in favor of economic gains, requires critical knowledge of “…the dialectical relationship between mainstream lifestyle and the dominant social structure, requir[ing] a much more radical and more complex form of ecoliteracy than is presently possessed by the population at large” (p. 6).
Kahn (2010) further exposed environmental literacy as being hijacked by corporate interests. This causes additional social and environmental angst perpetuated by a seemingly self-serving anthropocentric worldview. He then turned to Collins’s (1993) *Matrix of Domination* concept to describe the perturbing aspects of this condition as follows:

“…a global techno-capitalist infrastructure that relies upon market-based and functionalist versions of techno-literacy to instantiate and augment its socio-economic and cultural control…; an unsustainable reductionistic, and antidemocratic model of institutional science…; and the wrongful marginalization and repression of pro-ecological resistance through the claim that it represents a ‘terrorist’ force that is counter to the morals of a democratic society rooted in tolerance, educational change, and civic debate…” (Kahn, 2010, p. 9).

To illustrate what is at stake for the world at-large, Kahn (2010) cited a *United Nations Environment Programmes GEO-3 report*, which warned of societal and ecological upheavals by 2032, proceeded by potential planetary extinction. Such discourse prompts an urgent need for actionable change. It is imperative that if the world is to survive, humanity must adopt a new way of existing. To that end, Kahn (2002) brought in Capra (1984) to provide perspective that such a crisis also presents an opportunity for correction, adjustment, and the prospect to create a more sustainable future. As culinary pedagogy is concerned, such opportunities are present in abundance as students learn habits of mind and body by practicing and doing—habits they will take into their careers. The remaining question is how will learners learn about sustainability, how to value it, and how to embody it? To address this question, I outlined a framework for transformative sustainability education in culinary education based on ten essential propositions that emerged from the literature review.
CULINARY SUSTAINABILITY EDUCATION

Culinary arts education has been incredibly effective at teaching students the habits of mind and body to take into their professional practice. To perturb existing pedagogies, I needed to test these propositions for the development of culinary sustainability education programs to ensure they would be accurate, relevant, and important to achieving sustainability in culinary arts. It was determinable that conducting case study research to gather data from multiple perspectives was the best way to do so.

**Theoretical Propositions**

**Formulating Propositions**

The review of the literature on culinary sustainability education informed the creation of ten essential propositions necessary in the formation of a culinary sustainability program which embodies sustainability at a level strong enough to spur transformational change not only in learners, but throughout the culinary industry and broader society as well (Bateson, 2002; Brundtland, 1987; Sterling, 2001). Programs designed to encompass the essential propositions face the challenge of trying to account for seemingly immeasurable internal changes of perspective (Cranton, 2016; Taylor, 2009). However, many pedagogues suggest establishing conditions for such experiences to occur may be an effective strategy for triggering transformative learning within students (Cranton, 2016; Dewey, 1938; Schiro, 2008; Taylor, 2009). The formulation of program outcomes and course objectives guided by the ten essential propositions can help operationalize a culinary sustainability program and create an effective programmatic plan.

These propositions encompass an ecological learning perspective as applied to culinary education. Here, learners are encouraged to move away from traditional forms of culinary education which are modeled after master/apprentice, positivist, colonial, dualist, and
mechanistic approaches to teaching and learning. Such traditional formats are proven to be teacher-centered, power-laden, reductionist, meritocratic, and creatively-repressing (Deutsch, 2004; Sterling, 2001; Wheelahan, 2015; Woodhouse, 2015). Workforce supply narratives in these structures also endorse capitalistic and neoliberal interests by pushing learners toward conformity to fulfill social efficiency needs (Brown, 2005a, 2005b; Deutsch, 2004; Greenwood, 2010; Orr, 1992; Schiro, 2008; Sterling, 2001; Woodhouse, 2015). These propositions for CSE also emphasize the importance of action, change, adaptability, and transformation, while encouraging relationality within communities of humans and nonhumans to create more sustainable food systems and societies (Capra, 2002; Edwards, 2005; Hawken, 1993; Stephens, et al., 2008; Sterling, 2001, 2010a, 2010b; Orr, 1992, 2004). Reflexive and reflective practices in learners are valued, while cooperative, life-long learning, problem solving, active citizenry, environmental stewardship, and cultural responsiveness are emphasized (Hegarty, 2004, 2011). Such a shift takes learners from traditional oppressive, transactionary, and transmissive education systems to more just, equitable, and resilient systems (Freire, 1970; Jickling & Sterling, 2017; Sterling, 2001, 2010a, 2010b).

**Proposition 1. Beyond Master/Apprentice toward Facilitating Cooperative and Experiential Learning**

Historical influences in formal culinary pedagogies trace their lineage from the master/apprentice learning models taught within guilds of the Middle Ages, to the 18th Century Industrial Revolution where state-sponsored vocational programs transferred apprenticeship programs to workplaces (Woodhouse, 2015). It is at this time where the considerable influences of Escoffier, his organizational *brigade system*, and its reductionistic, meritocratic, and creativity-repressing effects on learners of the trade, took root (Woodhouse, 2015). A
marked change in vocational education aims in the 1990’s suggests that culinary vocational education began to formalize and legitimize with college and universities by offering accredited degrees or certifications with rounded academic cores (Hegarty, 2004; Woodhouse, 2015). These programs offered an instrumental approach to technical knowledge; however, the master/apprentice framework remains unchanged in most culinary education programs today (Woodhouse, 2015). Cranton (2016) traced these struggles back to issues of power, which many critical food pedagogues espouse continues to plague culinary education (Flowers & Swan, 2012a, 2016; Guthman, 2007; Harris & Giuffre, 2015; Heldke, 1992a, 1992b, 1992c; Julier, 2004, 2008, 2013; Sumner, 2008, 2012, 2013a, 2015). Emphasizing conformity over individual thought, capitalistic, neoliberal interests are partly to blame since they have traditionally reduced culinary education to workforce training for “utilitarian services” (Woodhouse, 2015, p. 23). Recently however, special interests have begun to push back to challenge and transform the social efficiency stigma in culinary education.

Such calls point to a shift from oppressive, transmissive, and reductionist educational systems toward more just and equitable sustainable education systems. Cranton (2016), Dewey (1938), Freire (1970), and Hegarty (2004, 2011) posited more cooperative approaches to learning and teaching are key, while Taylor (2009) and Schiro (2008) described a learner centered ideology, where Schiro proclaimed “the potential for growth lies within people” (p. 5). In such an ideology, the educator’s job is to carefully create environments for this meaning-making to occur (Dewey, 1938, Schiro, 2008). Such conditions are of vital importance to experiential learning where they can even extend to transformative learning opportunities (Cranton, 2016).
Another learner-centered approach, where teachers act as facilitators, is a “…learner-directed or a codirected (teacher and learner) process” (Cranton, 2016, p. 81), but with emphasis toward transformative learning potential. In an emancipatory learning setting, teachers can also play the role of reformists, provocateurs, and co-learners, to aid students in critically questioning their assumptions and provoke critical thinking (Cranton, 2016; Freire, 1970). In this setting, teachers are participants in the process of learning, “…discovering, challenging, and changing” (Cranton, 2016, p. 83) with their students.

It is the caution and the woes of the master/apprentice model and Schiro’s (2008) scholar academic tradition which makes for the incorporation of sustainability tenets such as fostering social equity, critical thinking, and adaptive problem solving into culinary education an important and worthwhile task. To do so requires educator approaches which are learner centered, cooperative, participative, and set conditions where deep meaning making can occur. This prompts questions for culinary educators and program developers: how can such learning conditions be constructed? Would such a perturbation to traditional culinary ideology foster deeper learning and transformative change? Could this be considered an element of culinary sustainability education curricula design?

**Proposition 2. Beyond Recipe-based Pedagogy toward Knowledge-Rich Thinking and Creative Questioning**

Leaning heavily on another chef and researcher, Woodhouse (2015, 2016) established a movement for change in culinary pedagogy through the work of Deutsch (2014), who was often cited by Woodhouse for positing that culinary students should not only being saying “‘oui chef!,’ but ‘why, chef?’” (Deutsch, 2014, p. 10). In Deutsch’s scholarship, he too cited the common ills of master/apprentice culinary pedagogy, describing them as a “…recipe-based
pedagogy [emphasis added] where the chef teacher demonstrates a dish and the student replicates it for the lecturer’s approval” (Woodhouse, 2015, p. 25). Deutsch further affirmed Woodhouse’s (2015) findings in his indictment of culinary pedagogy today, explaining that the conforming nature of the practice “…devalues the individual and, in turn, their creative thinking process” (Woodhouse, 2015, p. 25). Most alarmingly, Deutsch said that pedagogy which produces skilled technicians instead of critical thinkers, inhibits the ability to adapt and solve unexpected challenges. In such uncertain times as these (see Chapter 1), the ability to apply creative solutions to complex and ever-shifting problems is a competency sustainability education theorists project will be in great demand in the coming years (Capra, 2002; Edwards, 2005; Hawken, 1993; Stephens et al., 2008; Orr, 1992, 2004). Cognitive learning focused on producing knowledge-rich graduates is an essential component to achieve such capabilities.

Sharing a similar view to Cranton (2016), Deutsch (2014) was quick to chide, stating that instrumental approaches, such as demonstration/replication styled instruction, do have practical uses. He stated,

…there is value in learning through replication. I have a good means of cutting an onion that I learned from a mentor. It’s the best way I know. I should share it with my students rather than giving them a knife and an onion and saying, ‘Learn through project-based inquiry’ (p. 5).

Cranton (2016) said such approaches to teaching and learning can provide opportunities for critical thinking as students apply solutions to various problems within their technical areas. This is a very limited form of critical thinking however, as it tends to only focus on challenges within the students’ discipline, and does little to challenge current structures of teaching and learning. Wheelahan (2015) espoused these methods favor skills over knowledge, robbing
learners of opportunities to apply critical thinking in transdisciplinary ways, within their communities, and into their civic commons. Such practices reinforce inequality and classism upon learners, prompting Wheelahan (2015) to propose “…a ‘knowledge rich’” (p. 750) alternative to vocational education and training (VET) curriculum. To Wheelahan (2015), such a curriculum would need to,

address questions such as the nature of knowledge, the distinctions between theoretical and everyday knowledge and between different types of theoretical knowledge, the relationship between knowledge and skill and the implications of this relationship for VET curriculum and the conditions under which students access and integrate knowledge and skill (p. 760).

Wheelahan’s (2015) approach aimed to provide opportunities for learners to become active citizens with the adaptability skills and agency to make changes, participate in important discourse, and “…judge knowledge claims, and overtime, change the terms of the debate” (p. 160). As Wheelahan indirectly alluded, turning the corner comes not just from knowledge richness, but also from skill learning since knowledge alone is insufficient at leading to action (Frisk & Larson, 2011). It is with the combination of skill building, problem solving, and creative questioning with knowledge-rich, cognitive learning which offers the best chance at creating change agents with the tools necessary to take action and the knowledge base to know how to do so.

Proposition 3. Beyond Universal Truths toward Critical Reflexivity and Reflective Practice

nature of the practice. Though Hegarty’s interest in privileging culinary arts above everyday cooking practice situates his positions away from those of sustainable education theorists, his advocacy for reflexive and reflective practice, cooperative and life-long learning, problem-solving, active citizenry, environmental stewardship, cultural responsiveness, and transformational learning, make some of his positions highly compatible with aspects educational sustainability theory. Such an approach to teaching and learning applies a postmodern turn away from positivist frameworks toward more critical and emancipatory education.

The idea behind critical reflection itself is grounded in the belief that questioning and evaluating deeply held personal assumptions can lead to transformative change and the reconsideration of positivist universal truths (Brookfield, 2000; Cranton, 2016; Taylor, 2017). Foundationally conceived out of critical theory, Mezirow developed theories pushing critical reflection to become more of a psychological process instilling the kind of transformative change Sterling (2001) calls for (Taylor, 2017).

In Hegarty’s (2004, 2011) case, many of his positions are reflective of Schön’s (1983), whose analysis of technocratic professional neoconservatism led him to recommend reflective thought on action and reflective thought in action to provide better solutions to complex and unanticipated problems in the workplace and broader society. Much of Schön’s work in turn was inspired philosophically by Dewey (1933), who established reflection as it related to personal learning and growth, demonstrating that reflection in a learning context is not just a passive recall of an event, but an active and deliberate process (Dewey, 1933). In both Schön (1938) and Dewey’s (1933, 1938) case however, affective emotion seems to be overlooked or not considered. This is where Deutsch’s (2014) work is relevant as the chef and scholar asks if
culinary education should be more inclusive of desire, sensory input, and emotion. Without which imagination, critical thinking/problem solving, and desire “…to cook, to eat, to savor…” (Deutsch, 2014, p. 5) is lost.

Ignoring emotion’s effects on reflection can be a critical mistake, as emotions can have an enormous impact on one’s decision making process (Boud, Keogh & Walker, 1985). So too can affective sensory inputs (O’Neil, 2015; Sutton, 2006, 2010). Each must be taken into consideration through a reflexive and reflective process of self-evaluation in order to mitigate for influences effecting the experience and recall of events and actions. In order to get to Sterling’s (2001) goal of education as sustainability, where he claims learning and processes are creative, reflexive as well as participative, then affective emotional reflexiveness and reflection must be included in the mix (O’Neil, 2015).

**Proposition 4. Beyond Colonial Invasion toward Decolonization and Reinhabitation**

Capitalizing on his experience as a culinary educator, Woodhouse (2015) applied his own frames of reference to his postmodernist leanings. In reviewing historical positions of knowledge, power, and identity, he joined Hegarty (2004; see also Hegarty & O’Mahony, 2001) to challenge the assumption and “…normalized way of thinking” (Woodhouse, 2015, p. 37), that education is for building a workforce economy. While laying out his foundational underpinnings for his critical lens, Woodhouse highlighted Freire (1970) and drew attention to his concept of cultural invasion, where those who are conquered lose their culture to their invaders, eventually believing their own culture to be inferior. This tends to be a strong theme for Woodhouse (2015, 2016), as in his dissertation and a subsequent work, where he tells the story of his own indoctrination into the dominant cultural ideologies of French cuisine, concluding that in order for students “…to have their knowledge legitimized they must submit
their practices to the culinary culture and ideologies of the French and, as Freire (1970) would conclude, this constitutes an act of cultural invasion” (2016, p. 3).

Woodhouse’s (2015, 2016) reflection on his “situationality” in the culinary industry has allowed him to change his relationship with it. In Greenwood’s (Gruenewald, 2003) argument for a critical pedagogy of place, he echoed Freire (1970) to surmise “…that acting on one’s situationality, what I will call decolonization and reinhabitation, makes one more human” (Gruenewald, 2003, p. 4). Greenwood believed decolonization and reinhabitation are co-dependent concepts, and he cited Bowers (2001) to presage “…decolonization as an act of resistance must not be limited to rejecting and transforming dominant ideas; it also depends on recovering and renewing traditional, non-commodified cultural patterns…” (in Gruenewald, 2003, p. 9). In culinary arts education, this may be likened to developing one’s own standards and sensibilities toward good tasting food and culinary practice, rather than relying on enculturated Eurocentric standards and expectations. Such approximations leave space for creative questioning which originates from within (Lange, 2018b).

Greenwood emphasized there is a local environment aspect as well. Stating rehabilitation “…will depend on identifying, affirming, conserving, and creating those forms of cultural knowledge that nurture and protect people and ecosystems…” (Gruenewald, 2003, p. 9). Effectively, Greenwood’s explanation of reinhabitation and decolonization exemplify Woodhouse’s (2015, 2016) experience:

If reinhabitation involves learning to live well socially and ecologically in places that have been disrupted and injured, decolonization involves learning to recognize disruption and injury and to address their causes. From an educational perspective, it means unlearning much of what dominant culture and schooling teaches, and learning
more socially just and ecologically sustainable ways of being in the world (in Gruenewald, 2003, p. 9).

This concept of localization and of decolonizing the mind encompasses and proposes the reestablishment and regeneration of our communities to restore *ourselves* rather than *our selves* according to Esteva & Prakash (1998, p. 106). This explanation also provides a way forward for culinary sustainability educators who, like Woodhouse (2015, 2016), are looking for ways to recognize and change their relationships with traditional culinary education, and who endeavor to bring their practices away from the auspices of French colonial rule toward more sustainable ways of learning, knowing, teaching, and being. A future culinary arts, free from elements of power, control, elitism, and invasion, offer the resurgence of *comida*, the living organic memory of our connected senses and practices around food (Esteva & Prakash, 1998). Chefs adopting *comida* into their culinary culture are no longer participating in the industrial cooking and eating process, but rather are nourishing a relational communion with others to dismantle the capitalist, industrial food complex.

**Proposition 5. Beyond Dualism toward Holism and Participation**

Sterling’s (2001) work revealed the irony between the education and business worlds. While education continues to produce graduates poised to work and conform to mechanistic classical business structures and powers, today’s business world is instead looking ahead to find graduates who are direction and process oriented, focused on relations, adaptive, critical, and self-evaluative. Capra (2002), Edwards (2005), and Hawken (1993) have exposed modern day education’s inability to take lead in meeting these recent industry needs. According to Sterling (2001) “sustainable education… would nurture human qualities that progressive
businesses and organizations interested in social, economic and ecological sustainability, are now seeking” (p. 48).

Reuniting holistic human elements with the modernist view of detached labor does not come easy however. Through positivist assimilation and acculturation, learners are taught from birth they are separate from nature, that the reality of living systems, Earth, and cosmic connections is that they are independent of the human condition (Higgins, 2016; Spretnak, 2011). Here is where the ecological world view synonymous with sustainability education comes into conflict with the dualist, mechanistic, and reductionist modern western view dominating the world today. Leveraging “…participation, empowerment and self-organization” (p. 49), Sterling challenged the positivist paradigm with a strong vision of a more participative worldview, where “…how we see the world shapes the world, [which,] …in turn shapes us” (p. 50). As a self-fulfilling prophecy, this asserts a change of worldview by members of a society which can influence perspectives, priorities, education, lifestyles, careers, and even technocratic markets towards a more holistic unified approach. Spretnak (2011) and Higgins (2016) both emphasized relationality as the key “…to pursue a grand correction” (Spretnak, 2011, p. 18). In holistic education theory, relationality speaks towards connectedness and interdependency, and is further augmented with situational context and greater meaning (Miller, 2019). Changing education and the present modernist value system in this direction would shift emphasis away from unchecked neoliberal capitalistic mindsets, towards those which are more holistic, participative, and sustainable.

Such a vision summons contentions for how to approach such a change. For example, there is still the longstanding argument between instrumental and intrinsic views of education’s purpose. An instrumental view of education intends for learners to be educated
toward an end goal of changing the learner and society through the educative process. Such a perspective is opposite to an *intrinsic* view of education, where the process of education itself has innate value and purpose (Sterling, 2001, 2010a). The tension between these two philosophies may actually be obstructing education’s ability to help “…achieve more resilient social-ecological systems and a more ‘sustainable world’ at a time when the need to realize [sic] transformative change is increasingly urgent” (Sterling, 2010a, p. 511). Sterling worked to reconcile these perspectives by asserting educational sustainability—a transformative education paradigm, as the solution “…which necessarily integrates instrumental and intrinsic views and which nurtures resilient learners able to develop resilient social-ecological systems in the face of a future of threat, uncertainty and surprise” (p. 511). This approach to education has the potential to disarm the positivist and dualist culture in higher education today by holistically reuniting mind and body while providing purpose for action (Spretnak, 2011; Sterling, 2001). Other approaches inclusive of relational ways of knowing and being, such as posthumanisms and Indigenous ways of knowing, are just as promising (Higgins, 2016; Cajete, 1994). In culinary sustainability education, the assimilation of intrinsic and instrumental views together is one way forward. As chef learners begin to understand that their education is more valuable than just skill training, they will embody and spread the concept in their practice, communities, and throughout society (Sterling, 2001; Wheelahan, 2015).

**Proposition 6: Beyond Mechanistic Views toward a Living Systems Perspective**

Sterling (2001) argued for a living systems perspective, which has the potential to challenge an educational system which currently serves “…vocational and socializing roles and purposes…” (p. 32). He suggested going from a “…model of education as one of social reproduction and maintenance, toward a vision of continuous co-evolution where both
education and society are engaged in relationships of mutual transformation…” (p. 32). Sterling (2001, 2009, 2010a), Meadows (2008) and Capra (2002; see also Capra & Luisi, 2014; Capra & Jakobsen, 2017) leveraged systems thinking to illuminate connections at different contextual levels to promote a multifaceted and systemic approach to sustainability in not only the environmental world, but in the cognitive, social, and in Capra’s case, living and biological realm. One of the chief principles of Capra’s systems view of life, is in the concept of nested systems. Nested systems subsume that all systems are living systems, even human-made constructs like the economy. As a living system, it inescapably exists within the larger Earth/Gaia system nested within and interwoven with other living systems, like “…society, culture, politics, [and] nature” (Capra & Jakobsen, 2017, p. 836). From a living systems perspective, mechanistic world views are an illusion. There can be no separation from living systems and the interconnectedness of reality in this universe.

The emergent and rhizomic nature of reality reveals a complex web of connections made of energy in living motion. Process thinking confirms this constant movement, where in nature, these connections are kept in dynamic balance through responsive and constant self-corrections performed through feedback loops (Lange, 2018b). This natural cycle exists in not only wild nature, but in human constructs as well since humans and their reality are products of nature which are existing in nature (Capra, 2002; see also Capra & Luisi, 2014; Lange, 2018b). Recognizing this primal truth of reality and its unpredictable nature is part of taking on a more holistic worldview—a critical step in living systems theory and one which can lead to transformative learning (Lange, 2018b).

Narrowing in on the potential of the learner, Sterling (2010a) asserted ecological systems thinking to see the student as a ‘resilient learner’, who can actually build “…resilient
sustainable social-ecological systems” (p. 525). The way Sterling uses the term “resilient” means that the student will need to build strength to persevere through potential perturbation in the learning system. The outcome of which may lead to transformation of a new, more sustainable view of the world. He warned, as progress is made toward a more ecological perspective, that such learning may be uncomfortable for many and lead to transformative experiences (Sterling, 2001). Driving home his point, he cited Wenger (1998): “transformative learning ‘changes who we are by changing our ability to participate, to belong, to negotiate meaning’” (Sterling, 2001, p. 57). For chef learners, this could not be truer. A perspective change away from mechanistic and dualist views toward relational, systems perspectives, can provide opportunities for culinarians to work within their communities and local food systems to empower them and constitute effective, disruptive, and disorienting change for the better.

**Proposition 7. Beyond Unsustainable Food Systems toward Just and Sustainable Food Systems**

The combination of sustainability with food systems is gaining momentum, but as a topic, sustainability must be understood before a food system can be manipulated to be more sustainable (Sumner, 2012). The modern concept of sustainability is attributed to such pioneers as Henry David Thoreau, Ralph Waldo Emerson, John Muir, Aldo Leopold, and Rachel Carson (Edwards, 2005). These founders created an environmental ethic which pervades every facet of living on the planet, in personal lives, careers, communities, and nations. Present day theorists sustain the message, as they stress sustainability’s logical relevance since human existence requires functioning Earth life-support systems in order to endure (Curren & Metzger, 2017; Edwards, 2010; Golley; 1998; McNeil, 2000; Meadows et al, 2004; Stribbe &
Luna, 2009). It is not surprising then, that food, as a particularly important life support system, would be considered with sustainability in mind.

*Sustainable food systems*—a lot goes into a name. Sumner (2012) leaned on Shearman (1990) to explain the modifier, *sustainable*, actually infers that food systems by themselves are not inherently sustainable. By happenstance, this logic also “…indicates a way out of the problem” (Sumner, 2012, p. 330), signifying that sustainability is the solution to the unsustainability of food systems. Summarizing the ideal characteristics of a sustainable food system, Hill (1984)—who was supposedly the first to formally consider both sustainability and food together, outlined goals such as “…nourishment for everyone, fulfillment, justice, flexibility, evolution, and sustainability” (as cited in Sumner, 2012, p. 330). Sumner (2012) elaborated that food systems should be “…more environmentally sound; more economically viable for a larger percentage of community members; and more socially, culturally, and spiritually healthful” (p. 330). She added additional insight from Feenstra (2002) which alludes to the circular relationships in a food system:

They tend to be more decentralized, and invite the democratic participation of community residents in their food systems. They encourage more direct and authentic connections between all parties in the food system, particularly between farmers and those who enjoy the fruits of their labor—consumers or eaters. They attempt to recognize, respect, and more adequately compensate the laborers we often take for granted—farmworkers, food service workers, and laborers in food processing facilities, for example. And they tend to be place-based, drawing on the unique attributes of a particular bioregion and its population to define and support themselves (p. 100).
While examining these ideas behind sustainable food systems, Sumner (2012) found a common thread in the building of a civil commons. It allowed her to conclude “a sustainable food system involves an interdependent web of activities that build the civil commons with respect to the production, processing, distribution, consumption, and disposal of food” [emphasis is original] (p. 330). The scholar summarized that a sustainable food system should be in the public domain where it is governed for the benefit of society and the environment, and that it would “…follow natural cycles and close loops as tightly as possible, so that positive synergies could be achieved” (p. 330).

In academia, achieving sustainability in the food system is a worthwhile aim, and one which should be targeted through concepts taught in all disciplines—food related or not. Curren and Metzger (2017) advised “initiating them into living well in ways that do not destroy opportunities of others to live well is the only basis in which we can legitimately establish the moral authority to educate all” (p. 178). To expand Sumner’s (2012) rationale, compounding all educational disciplines with the prefix, sustainable, not only illustrates the shortcomings present in that segment, but it also insinuates how to fix them by transforming them into a more sustainable version of themselves. To move toward a more sustainable food system, learners must first understand the present shortcomings of their current food systems, then they must set out to challenge them to become more participative, relational, inclusive, respectful, fair and equitable, while also being place-based and community oriented (Feenstra, 2002; Sumner, 2012; Hill, 1984).

A food system is in every respect an alive network within an ecological community. Lange (2008b) expounds “all members in an ecological community derive their essential properties and, in fact, their very existence from relationships, in the continual cycles of energy
and resource exchange” (p. 294). As members of the food system, chefs have a responsibility to reciprocate what was given to them in order to foster a sustainable, enduring system. The first step in this process is understanding they are a member of the food system, and not the dominator of it.

**Proposition 8. Beyond Structures of Power and Domination toward the Power of Relationality**

In many ways, food is about power (Friedman, 1993; Heldke, 1992b, 2012; McMichael, 2000, Sumner, 2008, 2012, 2013a, 2013b, 2013c; 2015), and the food system, which encompasses food’s origination to its eventual breakdown, is no exception. Global corporate food businesses pervade the modern food system and aggressively dominate it (Friedman, 1993; Sumner, 2012). Domination serves these capitalistic and corporate interests through manipulation, coercion, and control (Johnson, 2000). Slogans like, *feeding the world*, and *support the American economy*, are widely accepted as being of higher priority than animal welfare, environmental protection, and human rights (Johnson, 2000). In Collins’ (1990) matrix of domination theory, the researcher espouses that models of oppression are housed in Eurocentric, masculine, and dualist thought processes. Such thinking has divorced the relationship between people and their food systems. Edwards posited that it has been global corporate food businesses which have had a “…detrimental impact on natural systems…” (p. 49), resolving it will be the way business is conducted now and in the future which will have to change. Corporate control, shareholder prioritization, profiteering at the cost of the environment, humans, and non-humans, prompts a sustainability response to change the systems of control (Sumner, 2012).
To equip future leaders with the skills and know-how to produce such a response, sustainability in higher education which emphasizes relational thinking has been interlaced into every discipline just as it must in every aspect of the real word (Bartels & Parker, 2012; Burns, 2011; Sterling, 2001; O’Sullivan, 1999; O’Sullivan & Taylor, 2004; Wheelahan, 2015). Sumner (2012) and Edwards (2010) both considered food systems to be relational and connected, leading Sumner (2012) to conclude, as products of social systems, can be changed and reconstructed (Sumner, 2010). Fittingly, Collins (1990) proposed to challenge models of oppression, suggesting they be replaced with “…interlocking ones [to create] possibilities for new paradigms” (p. 555). To that end, Sumner (2012) pronounced “…spaces have opened up for constructing more sustainable alternatives—alternatives that are re-embedded within, and serve, society” (p. 328). These strategies to emancipate the food system from structures of power and domination validate Capra’s (Capra, 2002; see also Capra & Luisi, 2014; Capra & Jakobsen, 2017) nested systems principle in living systems theory where we are reminded that businesses must reconnect and rebuild relationships within the social and ecological networks they are members of.

This relational approach “…rejects either/or binary thinking… [while it] embraces a both/and frame” (Collins & Bilge, 2016, p. 27). It is ecologically system based, where “…entities in the natural world, including us, are thoroughly relational beings of great complexity, who are both composed of and nested within contextual networks of dynamic and reciprocal relationships [emphasis original]... all of reality is relational” (Spretnak, 2011, p. 4). Described as the relational turn (Lange, 2018b), such a paradigm aligns with being modes of existence instead of having modes of existence (Fromm, 1995; Spretnak, 2011), and is a shift in personal and societal perspective that “…opens up intellectual and political
possibilities” (Collins & Bilge, 2016, p. 27). The concept is cornerstone to ecological worldviews, where pioneers such as Muir, Carson, Leopold, and Bateson shared through their writings “...profound dynamics of interrelatedness” (Spretnak, 2011, p. 13), which led to modern understandings of how networks, systems, and relationships are a part of every entity in reality (Spretnak, 2011).

Within existing frameworks neither small farms nor large corporations have to go away, but rather, the focus of food production needs to shift from profit-centered models to models which provide “…nourishing food for everyone, within the ecological limits of the planet” (Sumner, 2012, p. 333). Sumner (2012) described both top down and bottom up approaches which can help foster such a transition, including community support of grassroots projects and local farmers, cooperative and democratic local government, protective legislation, and the implementation of a national food policy to support civil-commons programs. She posited a reminder to remove current structures that incentivize and subsidize the exploitation of the food system. If such a change is to occur, structures need to be overhauled, special interests must be overcome, and recognition and financial support must be provided. She drew from Deumling et al. (2003) to illustrate what is at stake:

The beauty of a sustainable food system is its ability to generate benefits in numerous areas: health, biodiversity, ecological restoration, energy savings, aesthetic values, and economic justice. None of these benefits alone may outweigh the apparent short-term gains of the current destructive system. But the sum of these benefits will make society far better off and help to avoid the trap of increasing production at the expense of people and the planet (p. 9).
Culinary sustainability education can support this assertion by instilling the power of relationships within their learners. Chefs operate within the food system—a web of relations which must be supported and nurtured to prosper. To do so, they cannot lead or dominate it, but instead work within it. Synergistic partnerships with members and enterprises within the food system community, the environment, co-workers, and those who consume food products, are paramount for a sustainable chef to topple structures of power in order to build a more just and sustainable future.

**Proposition 9. Beyond Status Quo Programming toward Transformative Higher Education**

Sterling (2009, 2010a, 2010b, 2011; see also Jickling & Sterling, 2017), Schumacher (1974), and Orr (1992, 2002, 2016) posited, old educational paradigms are the root of the problem, and believe this need can be addressed through sustainable education, where Orr (2004) famously echoed Schumacher (1974) to state “it is not education, but education of a certain kind, that will save us” (Orr, 2004, p. 8). Stephens et al. (2008) espoused that it is institutions of higher education where the potential exists to “...facilitate societal responses to the plethora of sustainability challenges facing communities around the world” (p. 318). To help transition society toward sustainability, the quintet of researchers, provided four perspectives to consider. Firstly, they proposed that higher education institutions must first
model sustainability in their operations, facilities, and institutional hierarchy, in order to spread such culture within their institution and outward toward others.

Secondly, they pointed out that higher education institutions leverage concentrated learning, where in sustainability curricula, emerging skills teach learners how to incorporate and apply systems-thinking to address complex problems and challenges in sustainability. Thirdly, the researchers posited that gaining knowledge for knowledge-sake cannot be the goal of higher education any longer, as *use-inspired* research, “…research motivated primarily by a desire to affect social change…” (Stephens et al., 2008, p. 322), is needed in such urgent times as these. To address issues of unsustainability in this world, students must learn to learn for themselves through practice, rather than be subjected to traditional transmissive knowledge transfer from teachers. Under these conditions, the authors promoted interdisciplinary and institutional approaches to problem solving from different disciplines as a novel way for students to apply dynamic solutions. This tactic also provides a segue to their final perspective, where they extend the interdisciplinary approach to problem solving to the societal level. Here, they urged higher education institutions to integrate with, and influence society through a transdisciplinary approach which extends beyond an interdisciplinary approach at an individual institution to include the broader community. In this format, they emphasize open engagement, with examples like “…policy-making, non-formal education, community development and planning, and technology assistance” (Stephens et al., 2008, p. 322). As these strategies expand from individual learners throughout their institutions and into society beyond, transformational change will follow.

At the learner level, Taylor (2009) presented the core elements of transformative learning as encompassing individual student experience; promoting critical reflection;
enabling dialog; taking a holistic orientation toward teaching; being aware of context; and fostering authentic relationships. As a process, those undergoing transformative learning experience structural change and a reorientation of their perceptions which reposition their orientation in the world permanently. This effects how they view personal and societal relationships, and alters how they interact with the world (Morrell & O’Connor, 2002). Morrel and O’Conner (2002) distend transformative learning allows learners to reevaluate power structures related to “…class, race, and gender, our body awareness, our visions of alternative approaches to living, and our sense of possibilities for social justice, peace and personal joy” (p. XVII). Perception change in individuals is where transformative change begins, but with enough learners becoming critically aware of their own previously unchallenged assumptions, their relationships with living systems, and their place in the world, transformative change can flex outward into societies to trigger a paradigm shift (Lange, 2012; O’Sullivan, 1999; Sterling, 2001, 2011).

**Proposition 10. Beyond Theory toward Integrative Practice**

The perspectives recommended by Stephens et al. (2008) to help higher education transition society toward sustainability have a common thread in tangibility and performativity. Discussing theory without actionable change does not satisfactorily address the dire issues humanity presently faces in the world (Breunig, 2005). Despite the dualism, culinary arts education is commonly construed through theory and practice, where students, graduates, and organizations are measured based on their capacity to perform theory-based actions. Whether it is through exemplifying sustainable food operations and practices, such as in campus dining, composting programs, or with student-led projects employing systems thinking, critical perspectives, and problem-based learning in food sustainability, the practice of CSE can
provide a tangible and transmissible demonstration of sustainability in action which addresses real world challenges in the present.

A chef’s capacity for action has to be based on more than just a check list of best sustainable practices however. If chefs are to be adaptable enough to address unanticipated and ever-shifting challenges they will come across in the future, they must embrace more embodied ways of knowing and develop an ethic of reciprocity. Lange (2018b) explains “recognizing the reciprocity between oneself and the food and water they intra-act with shifts learners into more embodied ways of knowing” (p. 293). This means being mindful and fully aware of their place in not only the food system, but in the entire web of life (Barad, 2007; Lange, 2018b). Lange (2018b) positions that living within such a paradigm where one can act on this awareness, can itself be considered ethical as it comes with obligations and a “…commitment to enable and protect processes of life” (p. 294).

Considering the societal need for higher education to teach sustainability with tangibility, ethical integrity, and the characteristics of culinary education in practice, sustainable culinary training in adult education seems a fertile place for actionable sustainability theory to be planted. Wals et al. (2017), backed such multi-disciplinary pairings when they claimed “educators need strategies for anticipatory engagement with changing socio-ecological realities—both in present and future—in order to be effective within their various embodied contexts” (p. 19). Navigating these challenges educators face will provide better opportunities for transformative learning to occur for students. CSE as the framework may be a prime place to pioneer such societal-changing sustainable, alternative futures as well, but only with the adoption of more embodied ways of knowing through holism ethics where learners consider the full ecosystem and their place within it (Lange, 2018b). Assembling a
combination of experiential education, like in exploring a food system, with hands on cooking, relational thinking, critical reflection, and critical assessment, will allow students to analyze issues, reflect on experiences, their sense of being, and apply solutions to problems with the potential to change meaning structures.

**Methodology and Rationale**

My goal in this endeavour was to inform the development of a CSE program which has the power to catalyse a paradigm shift in culinary education. In-other-words, a program constituting a culinary education as sustainability (Sterling, 2001). In order to achieve this goal, the guiding propositions had to be tested for their effectiveness at addressing my research questions. My research questions were:

- What constitutes a culinary sustainability education and what principles might guide future programming?
- How might traditional culinary arts programming be transformed and operationalized into a program plan for culinary education as sustainability? (structures, relations, goals, practices, conditions)
- What desired outcomes and barriers to this transformation is experienced by learners in a higher education setting?

In determining what kind of data to collect for analysis, I realized I needed information from multiple stakeholder perspectives since a culinary sustainability education would need to serve not just educators and students in the short term, but in the long term as well. My research questions could not be addressed if only from limited perspectives. To achieve these requirements, I conducted a thematic analysis around food related sustainability programs to test the relevance of the proposed propositions.
Merriam (2009) described case studies as a, “…particularly appealing design for applied fields of study such as education,” (p. 51). It is appropriate to education given that the “…processes, problems, and programs can be examined to bring about understanding that in turn can affect and perhaps even improve practice” (p. 51). Case study research, according to Creswell and Creswell (2018), consists of,

…an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals. Cases are bound by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (p. 14).

The case study analysis method was chosen to provide a deep and multi-perspective view of culinary sustainability programming (Creswell, 2007). It is inclusive of design, user experience, and deep insights into case subjects’ perceptions. Such capability adds credibility to Yin’s (2009) claim that “…the case study’s unique strength is its ability to deal with a full variety of evidence” (Yin, 2009, p. 11). Resultantly, gathering data from different case studies provided a multi-representative view of culinary sustainability programming in design, application, learner outcomes, and overall effectiveness. Moreover, case study methodology also enabled me to stay true to my theoretical lens throughout the analysis process (Creswell & Creswell, 2018; Yin, 2009).

Rudestam and Newton (2007) recommend “…it is better not to think of your potential dissertation as using the case study method but rather to think of applying a method to a single case” (p. 51). To that end, each of my case studies took place with a different type of research subject group. In each instance, my data collection methods included semi-structured interviews, and ethnographical observations as a co-participant with two of the case groups.
For the interviews, critical to my research was the formulation of well-designed questions delivered conversationally more than structured, guided along my line of inquiry, and introduced in unbiased ways (McGregor, 2018; Yin, 2009). Equally as essential, was operating as a participant-observer to gain insider perspectives with fellow workshop participants while avoiding common ethical conflicts (Creswell, 2007; Erlandson, et al, 1993; Fahy & Rau, 2013; McGregor, 2018; Merriam, 2009; Yin, 2009).

Interviews are qualitative data collection methods which are essential to collecting case study data (Yin, 2009). Most in case studies are semi-structured (Merriam, 2009), thus more guided than scripted, and more “…fluid rather than rigid (H.J. Rubin & Rubin, 1995)” (Yin, 2009, p. 106). Such flexibility allows the researcher the ability to probe deeper into topics pertinent to the inquiry while fostering a more easing setting for participants to open up (Merriam, 2009; Yin, 2009). During the process, I stayed aligned with my broader research questions. Creswell (2007) explained the questions “…are a narrowing of the central question and sub-questions in the research study” (p. 133).

As a consequence of the open-dialog approach to data gathering, participant data has to be corroborated with information from other sources since it’s subject to subjective bias, poor recall or poor wording (Merriam, 2009; Yin, 2009). Multiple sources of evidence, such as participant observations, are needed as a major principle to data collection (Yin, 2009). Participant-observation was defined by Yin (2009) as “…a special mode of observation in which you are not merely a passive observer” (p. 111), but instead a participant in the case study. The purpose of this was to investigate deeper than interviewing alone could provide by probing from insider observations. Creswell (2007), Yin (2009), and Merriam (2009) all agreed, in participant-observation, the insider role of the researcher allows distinctive
perspectives unavailable to an outside researcher, such as the ability to garner data more accurately.

Such a position can provide greater access to information for a researcher, but it does not come without its own risks. The potential for biases, role confusion, distractions, and logistics such as time management and physical proximity to subjects in the site, are all concerns (Creswell, 2007; Merriam, 2009). Creswell (2007) stressed the seriousness of these considerations warning that they could make or break a study. Accounting for the significance of these challenges, Merriam (2009) laid out suggestions to help conduct a sound participant observation. She offered strategies for observational actions and considerations, such as conducting self-checks (reflexivity), navigating participant relationships, and additional logistical advice. Following her suggestions helped me navigate the field research process to help ensure reliability.

Based on the attributes and advantages of case study design, notably its investigative range and flexibility, it was determinable that a thematic and cross case analysis from multiple perspectives, coded through the theoretical assumptions characterized in the essential propositions, was the preferable approach to collecting, analyzing, and drawing conclusions from data. This process would be inclusive of my experience as told through narrative stories and my role as participant-observer.

**Research Methods**

As a framework for analysis, I applied a case study method encompassing two different research sites with three different research groups. Each site was selected because it informed a different aspect of food-related sustainability education programs that will answer my research questions: scholar instructors as program architects; the experience of participants in
a sustainable food workshop; and the viewpoint of foodservice professionals who have already taken a culinary sustainability program in their past.

Each of these groups brought their own perspectives and experiences. All shared an association with sustainability and food themed programming in some way. How they recalled and interpret their experiences had the potential to provide evidence of transformative learning; conditions which potentially fostered it; learning as sustainability; and instances of holistic experiential learning. Yin (2009) offered analytical techniques which will help in “…linking data to propositions [emphasis original]: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis (p. 34). Such an analysis provided data on-which conclusions could be drawn to address my research questions and inform my problem of practice. Resultantly, I developed four propositions for analysis from the literature to help identify indications of transformative learning; conditions conducive to transformative learning; qualities of transformative sustainability education; and holistic experiential education (Appendix B). This tool was used to build my codebook for data collection. Overall, it was my goal that this empirical analysis would inform the development of culinary education as sustainability in not only a theoretical design, but also situated in action as an actual CSE program development guide.

**Research Process**

Merriam (2009) claimed case studies result “…in a rich and holistic account of phenomenon” (p. 51), but in order to get there, I had to chart methodological steps. These case studies took a multi-legged approach to data collection, coding, and analysis, in order to inform a program design which would be effective in reorienting culinary education towards a more sustainable practice. Figure 4 illustrates the path of my research design. Similar to a learning
model, it displays the trajectory of discovery I followed as I conducted my study to produce recommendations addressing my problem of practice.

Figure 4. Path of Research Design.

**Step 1. Experiences, Foundations.**

Coming into my doctoral program as a practitioner, I brought many experiences which form my foundation of understanding in and out of my field. This includes not only my positionality, and formal culinary training, but also my sense of ethics, values, and personness. One of my first steps in the program was to recognize this foundation of experience and to identify my positionality in it. My previous experiences in culinary education, first as a student and later as a teacher, led to the discovery of my problem of practice. Some of these experiences were shared through the autoethnographic stories spread throughout this dissertation.

**Step 2. Literature Review.**

My next step after identifying my problem of practice was to research the field. I conducted a literature review on three primary areas which informed my inquiry. In the first, I applied a critical postmodern lens to modern culinary education and its accompanying industry
in order to identify its shortcomings when it comes to sustainability. In the second, I researched literature which created a vision for a chef’s role in sustainability by revealing their potential as change agents. The third thread of literature focused on learning pedagogies, namely culinary pedagogy; sustainability pedagogy; and transformative learning theory. I concluded the literature review with a list of essential propositions needed in the development of a culinary sustainability program.

**Step 3. Theoretical Framework.**

In reviewing approaches to analyzing information relevant to my inquiry, I found that applying a critical postmodern lens to identify and analyze issues of sustainability in modern culinary education was the most advantageous to address my problem of practice. Such an approach reveals shortcomings to sustainability and prompts action-based solutions grounded in Dewey’s (1938) theory of experiential education. Freire, (1970), Hegarty (2004) and Kolb and Kolb (2011) add an emphasis on praxis to this formula with the incorporation of critical reflection, and researchers like O’Neil (2015, 2017a, 2017b) and Miller (2019) add an emphasis on affect and holistic whole personhood respectively. This framework is designed to converge culinary arts’ pedagogy grounded in experiential education with sustainability education pedagogy and transformative learning theory to constitute transformative change in culinary arts education.

**Step 4. Study.**

Following a case study method, I conducted three areas of research in order to seek varying relevant perspectives to test my ten propositions for CSE. For the first two case studies, I attended the *John Dewey Kitchen Institute Workshop* as a participant while simultaneously conducting research. I anticipated conducting semi-structured qualitative interviews and
conducting an ethnographic participant observation in this setting. In my first case study, I interviewed three key scholar informants in educational sustainability related fields. All three of these scholars are connected through their work in the development, implementation, and/or analysis of the workshop. Second, I interviewed and observed fellow workshop participants who teach in various other disciplines and age levels. Regarding observation, I paid close attention to interactions and impressions students shared with each other, myself, and the workshop instructors. I also took close observational notes on the environment. In my third case, I qualitatively interviewed in a semi-structured format chef graduates of the Wellness & Sustainability Concentration at Johnson & Wales University.

For my research study, I had to develop a research plan for all three of these elements and submit them separately to the University of Wisconsin Stevens Point, the University of Vermont, and Johnson & Wales University. All protocols had to be in place and approved before I could proceed (see protocol sheets in Appendix C and approvals in Appendix D). My method for recording data was with notebook and a phone application called Rev, which also provided transcription services. I also took photos of workstations and handwork absent of identifying features.

Step 5. Analysis.

Once I collected my data, I transcribed the recordings from my interviews and organized my notes. From there, I followed Creswell (2007), Creswell and Creswell (2018), Merriam (2009) and Yin’s (2009) methods for case study analysis and coding in order to tease out patterns in the data to reveal themes and cross themes to build explanations for phenomena (Yin, 2009). My final stage of analysis was inclusive of my autoethnographic stories and the emergent theme from the case study analysis.
Step 6. Findings, Conclusions, Implications.

Findings from my study provided the data I needed to draw conclusions and validate the ten propositions for CSE and rename them the ten principles for CSE. The ten principles for CSE were designed, assessed, and validated to make recommendations for the creating of culinary as sustainability programs. The potential for change is presented in order to determine the implications of the data in the real world.

Setting and Consent

The location of most of my study was at the University of Vermont in Burlington. There, the school offers an annual summer workshop under its Environment & Sustainability programs, and targets it to appeal to teachers, instructors, and faculty members of educational institutions. As a three-day long experiential professional development workshop focusing on food, philosophy, and teaching, the program is fittingly called the John Dewey Kitchen Institute. The course was modeled around John Dewey’s tenets of democracy in education. Doctors Cynthia Belliveau and Lisa Heldke designed and operate the course with the intention of illustrating experiential learning at the “…intersection of food, philosophy and teaching…” (“John Dewey,” n.d.). Under this banner, the course operates in an experiential kitchen setting where participants discuss Deweyan principles combined with sensory exercises and experiential cooking in their kitchenroom (O’Neil, 2015). Belliveau and Heldke have received input and assistance for the program from Trubek.

This site was selected for the majority of my study for the following purposes: the gathering of so many scholars relevant to my study in a single place for the better part of a week; the workshop participants are educators themselves; the fact that the program is a food related educational program compatible with sustainability education through its democratized
and systemic approach; the convenient summer timing; and the doubling of the site as the location of my applied residency.

In the scholars’ interviews and through my participant observation, I was looking at the intended outcomes for the JDKI Workshop, as well as the identified ten propositions that a culinary sustainability program should exhibit. I also asked direct questions about their workshop design, outcomes, and my observations, to code and later analyze the validity of the ten essential propositions for CSE design. As an ethnographic observer, I was also be able to conveniently set up interviews with workshop participants for my second case, which is where I qualitatively interviewed them.

Participants attended the program to gain deeper perspectives into applied experiential education through practice in the workshop. The qualitative interviews I conducted with some of the program participants discussed experiences, revelations (if any), and transformative moments (if any) within the program. The observations and interviews at the workshop were meant to directly inform my problem of practice, potentially helping me better understand the triggers of transformative learning and how experiential program design might contribute to it.

According to the UVM’s (n.d.) program materials, the learning objectives and outcomes for the JDKI program include:

1. To explore and understand the complex and indivisible interaction between practical and theoretical learning by using an experiential learning setting designed to focus on cooking and eating.
2. To explore the JDKI tenets of inquiry and begin the process of incorporating them into your teaching and learning contexts.
3. To cook, taste, and eat.
To meet these objectives, the course lesson plans are laid out with deliberate sensory exercises, culinary demos, theory discussions involving mental scaffolding, group analyses on Deweyan tenets, and team cooking time. If developed with intention, these concepts are meant to do more than just connect activities with outcomes. Workshop participants can embody the concepts by combining action, theory, belief, and being (O’Neil, 2015). Such an approach exemplifies Dewey’s (1938) idea that “… there is an intimate and necessary relation between the processes of actual experience and education” (p. 20). This provides fertile ground for personal, inward transformative learning to emerge among program participants. Summarily, the program teaches teachers how to teach experientially with purpose and intent by providing them with the very experience they seek to offer. O’Neil (2015) and Sterling (2001) would describe such learning as potentially transformative, making a strong case for the JDKI program to be categorized as a type of educational sustainability program.

Gaining access to this site required applying as a participant to the summer program while concomitantly contacting Belliveau to seek her permission to conduct my study there. As the director of the program, Belliveau acted as my chief informant for coordinating my study at the site, in addition to her role as one of my research participants. With her consent, I was free to apply for permission from the IRBs at UWSP and UVM.

For the scholar informant interviews at UVM, I first introduced myself and my research study via an email template which was approved by both IRBs. Then, I followed the IRB approved protocol which included my interview questions specifically designed for the scholars (Appendix C).

The final stage of gaining access to this site was for the participants of the workshop to grant me permission to ethnographically observe them and interview them. The workshop
participant observation and interview protocol sheet (Appendix C) also includes protocols approved by the UWSP and the UVM’s IRBs to request this consent. The protocol contains a script and procedures for introducing myself and my study to fellow workshop participants. In the narrative, I explained that the workshop would continue as normal, that I would be merely just another participant, and that I would be doing ethnographic observations followed by semi-structured interviews at scheduled times with them outside of class if they agree to be interviewed. I explained to them that I would do my best to ensure they would not be identified in my study; that I would use pseudo names. I also warned there was always a very small chance their names could be discovered as no research is one hundred percent infrangible. Additionally, I explained my audio recording protocols, and the member checking process where I confirmed statements I planned to use in my study. Also included in my protocol was an oral consent statement which was read at the beginning of the workshop when I introduced myself and my study. Students were asked to verbally agree to be a part of the study or opt out. Later, when meeting with fellow program participants for scheduled interviews, I began by following the protocol script thanking them for participating and reminding them of the purpose of the interview, and their option to not participate or to cancel at any time. Then I explained there are no right or wrong answers, and that I would like them to feel comfortable saying what he/she really thinks and how he/she really feels.

For the third case study setting, I reached out to alumni of the Wellness & Sustainability Concentration at JWU, where I am presently employed as a faculty member. I was researching graduates from sustainability-themed culinary program to capture impressions from past student experiences, and to see what influences remain on participants. To gain access to this group, I advertised the study openly with a social media advertisement, but targeting a specific
audience—alumni, over 21 years old, who have completed the Wellness & Sustainability Concentration during their time attending JWU. I requested they contact me if they would be willing to participate in a study. The contact information I provided was from my UWSP email account to suggest distance from my affiliation with JWU. In response to emails from interested persons, I sent an IRB approved consent form in addition to initial questions confirming they qualified. I asked them to fill it out and electronically sign, then email it back to me. At that point, I worked with them to setup an interview time and accessible platform such as Skype. The consent form also mentioned my audio recording protocols, and that I would be reaching out to participants at a later date to member check their responses to ensure accuracy and provide fair opportunity for corrections, clarifications, and adjustments to recorded answers. Through this process, I interviewed three people from this population.

Participants

Scholar Informants

My first leg of research constituted semi-structured qualitative interviews with three leading scholars in related sustainability fields. As leaders in their fields, the three scholars are prominent theorists in themes compatible with sustainable education principles, such as critical pedagogy; applied action through experiential education; transformative learning; and sustainability programming. With their formal approval, the scholars’ identities are revealed in the research (see scholar informant information & consent forms in Appendix D). As theorists and educators, each of these scholars bring a unique perspective to my study. In answering my questions, their experience writing food-related, experiential, sustainability learning programs and curriculum, experiences as pedagogues, and researchers of pedagogy, will provide a unique point of view as compared to the other case subjects in this study. Insights
into sustainable program design, purposeful experiential learning and transformative learning activity planning, and personal motivations, helped to inform questions I posed related to program design, learner-centered approaches, and effective and affective teaching. Moreover, this line of questioning aimed to answer deeper questions related to structures and ideologies in the culinary and food pedagogies, as well as identify challenges in implementing sustainability-related programs. I chose these scholars for three primary reasons: their involvement in the John Dewey Institute Workshop, their pedigree as scholars, and their convenient convergence at the workshop. All three of the participants in this group are professionally accomplished female scholars within an age group of 50-60’s.

Further, I expected potential critiques would possibly arise from the scholars which would challenge the master/apprentice and scholar/king ideologies, Cartesian dualism, as well as the organizational structure of the industrial factory line or brigade model. This includes its focus on efficiency and the meritocratic power struggles therein, and offer strategies for addressing these. I also suspected the scholars’ previous experiences may offer suggestions for replacing these ideologies as well as the gendered model of precarious masculinity with more holistic and equitable approaches (Harris & Guffrey, 2010a; 2010b; 2015).

Dr. Cynthia Belliveau is Dean of Continuing Education at UVM and teacher in the school’s Department of Nutrition and Food Science. Dr. Belliveau is a Northern European-identified woman who came from a background in food and cooking which informs her scholarly and teaching endeavors. Her founding of the John Dewey Kitchen Institute Workshop and co-founding of the program Sustainable Business: Practices in Support of People, Profit and Principles, are some examples of her program development experience in sustainability related fields (“Cynthia Belliveau,” n.d.). Her position in higher education, combined with her
background in food, experiential learning, food sustainability, and program design, made her an ideal informant for my study.

Dr. Lisa Heldke is a renowned philosopher and professor at Gustavus Adolphus College in Saint Peter, Minnesota, where she teaches in the Gender, Women, Sexuality Studies Program and the Philosophy Department (“Lisa Heldke ’82,” 2019). She is a White-identified woman, and the publisher of scholarly works involving food, race, and feminism. She serves as the director of the Nobel Conference—a colloquium bringing students, educators, and others together to discuss issues in science and ethics. Dr. Heldke’s works critically analyzing food, race, and social justice match well with the expertise needed to inform my study.

Dr. Amy Trubek is an associate professor in the Department of Nutrition and Food Sciences and the Faculty Director for the Food Systems Graduate Program at the UVM (“Amy Trubek,” n.d.). As an anthropologist and leading scholar in her field, Trubek has written extensively on diverse food studies topics. She is also White-identified, and her areas of research “…include the history of the culinary profession, globalization of the food supply, the relationship between taste and place, and cooking as a cultural practice” (para. 1). Dr. Trubek’s scholarship and areas of interest were a strong match for my investigation into historical influences in culinary arts, effects from globalization on culinary education and the modern culinary industry, and relational cooking.

Workshop Participants

As a participant-observer, I observed the participants of the JDKI. Some participants were qualitatively interviewed in a semi-structured format throughout the duration of the course. Participants were all educators themselves, as the workshop was designed as a professional development activity for teachers. Their age, gender, class, and race were random
and had no bearing on whether they would be observed, or why any of them would be interviewed.

To qualify for my participant observation, participants had to be enrolled in the class and to agree to participate in the study (see workshop participant information sheet in Appendix D). Interviews were given to any participants who volunteer to be interviewed. No one was excluded unless they did not provide consent or opted out. These interviews were intended to gain a learner’s perspective in the program and to search for evidence of transformative change. The ethnographic participant-observations I made and the qualitative questions I asked may also have revealed connections or gaps between the students’ experience of the workshop and the experience and outcomes intended by the scholars. This identified shortcomings or congruencies relevant to the ten propositions for CSE. Such an analysis helped to compare the intentions of programmatic design to the realities of the student experience, affording insight into the dynamics between them.

**Chef Graduates**

Three JWU graduates who attended the Wellness & Sustainability Concentration were qualitatively interviewed in a semi-structured format to ask about their lasting impressions on their experience from the program. An advertisement was posted on social media (Facebook and Instagram) seeking alumni of the program who would be interested in being interviewed (see Alumni Recruitment & Interview Protocol Sheet). The first three respondents over 21 years of age who are an alumnus of the program were chosen. Sex, race, and class had no bearing on deciding who will be interviewed. The age limit of 21 was required by JWU’s Internal Review Board (IRB) to approve the advertisement. The purpose of interviewing this group of research subjects was to inquire if they are aware of any lasting impressions in their
careers and life from the program they attended. I sought evidence of transformative moments which occurred within the program, and the settings where they may have occurred. Semi-structured, qualitative interviews had been chosen for similar reasons as before: to allow room and flexibility and deeper insights. Providing ample space for graduates to recall their experiences from the program was intended to provide an opportunity for more profound results. By design, these questions intended to flush out past student experiences in a culinary sustainability program which provided lasting effects that might still be driving sustainable behaviors today. If such lasting behavioral effects did exist, finding out how and if they perturbed the food system would help inform the design of a culinary education as sustainability program.

**Ethical Issues**

For this study, a case study methodology was chosen because it “offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon (Merriam, 2009, p. 50). Investigating complex social units is not without risk, however. As a researcher I had to layout strategies to deter ethical issues in my research and to protect my research subjects. Despite the known and unknow risks however, Merriam (2009) suggested “case study is the best plan for answering the research questions; its strengths outweigh its limitations” (p. 50). With ethical challenges and the need for safeguards in mind, provisions were taken to ensure an ethical and appropriately sized case study research project was arranged which was low risk to participants.

The study was considered low risk since it consisted of qualitative interviews and ethnographic observations of average no-risk groups, two-thirds of which were coded with
alias names. Careful consideration was given to all aspects of the research project to ensure it would be ethically compliant and provide uncompromised data.

Overall, IRB applications had to be submitted to three different institutions for each component of the case study analysis. Though navigating between different sets of protocols proved to be challenging, the process also reinforced the study’s methodological steps and theoretical and ethical soundness. By design, the study was intended to be low risk and therefore had potential to receive exempt status from the three IRBs. None of the research case subjects were considered at-risk populations. Since my doctoral program is hosted by UWSP, approval for exempt status from there was the preeminent requirement. Following that, approval from UVM, where the JDKI Workshop was held, and where three important data points were collected, was next. At the JDKI Workshop, I applied to conduct scholar informant and workshop participant semi-structured qualitative interviews, as well as ethnographically observe the workshop and both groups in action. With the alumni from the Wellness & Sustainability Concentration, I was also conducting semi-structured qualitative interviews. All three letters of approval can be found in Appendix D.

My relation to my different case research subjects varied. To the academic scholars, I was a doctoral candidate conducting research toward my dissertation. Differences in race, class, or gender, did not seem to hold significant importance. Specifically, to Heldke and Belliveau, I was also a participant in their workshop. This could have presented conflict at times during my participant observation if the two teachers found my observational tasks to be interfering with my (or others’) workshop participation. Merriam (2009) and Yin (2009) warned of this possibility, explaining participating while observing members in the workshop provides some challenges with time available to take observational notes (Merriam, 2009; Yin,
Being mindful of this, I conducted my participant observations subtly with brief notations in my handheld notebook which I expanded upon privately later when reflecting on the day. Belliveau alone was also my site contact and the gatekeeper to the site. As such, she held power over my study and was able to dictate what I could or could not do at her site. Having an open conversation prior to the research day regarding details, operating parameters, and protocols, such as when I could request interviews with workshop participants for instance, was an important preparatory and conflict avoidance step.

I had no prior relationships with the workshop participants I participatory observed and semi-structurally interviewed. As a participant observer however, I did interact with some fellow participants as part of the group work within the workshop. This relationship may have helped me facilitate interviews with other participants—a major benefit to participant observation (Creswell & Creswell, 2018; Merriam, 2009; Yin, 2009), but it may also have introduce elements of conflict if interviewees felt obligated to maintain a reciprocal relationship with a fellow teammate. I attempted to mitigate these conflicts by, a) reassuring participants that their involvement would be completely voluntary; b) that there would be no right or wrong answers; c) that they were under no obligation to participate in interviews or observations ; d) and they could leave the study without any effects on their workshop status at any time.

On another level, I also had to be mindful of my status as a doctoral candidate, and separately as a White male. Since the workshop participants were all teachers, those who did not have a doctoral degree might potentially consider me differently. The workshop participants were women, men, and of different races and ages. As a middle-aged male educator, I might have been thought of differently as well. I have seen such dynamics in my
own experience teaching in higher education. Mixed feelings or stereotypes held by workshop participants were possible and potentially unpredictable. To anticipate for this possibility as best as possible, I had to reinforce my position as an equal workshop participant—no less, no more. I indicated in my scripted protocols and in regular interactions that I had no additional responsibilities for the workshop and held no power over fellow participants. I made all interview requests outside of the workshop time, and I communicated there were no special privileges or incentives for myself or any interview volunteers. Details on the procedures I followed can be found on the workshop participant observation and interview protocol sheet, as well as on the workshop participant information and oral consent form (Appendix D).

In the chef graduates’ group, all participants are former students of mine at JWU who took the Wellness & Sustainability Concentration. As alumni, I no longer held power over them formally as a faculty member, however, due to the nature of modern culinary arts culture, I did have to anticipate a potential sense of loyalty emanating from them. Further, regarding the subject matter, past students were aware of my reputation and passion for sustainability in the culinary industry. Graduates still addressed me as chef and viewed me as being in a position of respect even now as a colleague and past teacher. This provided me with the advantage of insider status but came with the burden of ensuring I control for bias. To control for these potential biases from the chef graduate interviewees, I explicitly expressed in my protocol for that group that there would be no preferred answers, and no ill-effects from answers given to questions. I mentioned that they would not be thought of differently based on their responses, and that they would merely be informing my practice. As a further control, my research questions were crafted carefully to not posit responses which seem to insinuate preferred answers. Chef graduate protocols and interview data can be found in Appendix D.
Though limitations are common among all forms of research design (Merriam, 2009), Yin (2009) explained how they apply to participant-observation: “Participant-observation provides certain unusual opportunities for collecting case study data, but it involves major problems” (Yin, 2009, p. 112). Opportunities include gaining closer access to research subjects and unique points-of-view inaccessible to outside passive observers, and the ability to “manipulate minor events,” (p. 112) such as in the case of arranging meetings with an individual or group (Yin, 2009). Such manipulations “…will not be as precise as those in experiments, but they can produce a greater variety of situations for the purposes of collecting data” (Yin, 2009, p.112).

Despite the positives, this approach to research also offered challenges. Merriam (2009) and Yin (2009) both warned of the perception of potential biases, but Merriam (2009) also cited Shields (2007) to contest such perspectives as “…missing the point” (Merriam, 2009, p. 52). Shields (2007) argued,

“The strength of qualitative approaches is that they account for and include difference—ideologically, epistemologically, methodologically—and most importantly, humanly. They do not attempt to eliminate what cannot be discounted. They do not attempt to simplify what cannot be simplified. Thus, it is precisely because case study includes paradoxes and acknowledges that there are no simple answers, that it can and should qualify as the gold standard” (as cited in Merriam, 2009, p. 52).

Shields’ (2007) position compliments a postmodernist perspective which argues the separation of mind from body, personhood from objective truth, and opinion from positivist fact, is impossible. Despite the argument, Creswell and Creswell (2018) contended, this is why researchers “…explicitly identify reflexively their biases, values and personal background, such as gender, history, culture, and socioeconomic status (SES) that shape their interpretations formed during a study” (p. 183).
In this study, such reflexivity was identified in my positionality statement and expressed throughout my autoethnographic narrative entries, where I told stories of my experiences as a culinary student, later a culinary instructor, even later as a doctoral candidate, all in order to draw questions and conclusions from those experiences. In these instances, I reflected on my realization that modern culinary education was devoid of sustainability topics, that master and apprentice allegiances seemed to be imbedded into me from such trainings, and that I suspect a transformative paradigm shift may be the key to changing such trends. Expressing how my experiences shaped my interpretations is a key component to ethical case study design, and it is a component which continues into the analysis stage of my study (Creswell & Creswell, 2018). Creswell and Creswell recommended continuing reflexivity into the coding process to gather “…observations about the process of data collection, hunches about what you are learning, and concerns about reactions of participants to the research process” (p. 184). The researchers claimed such notes help reflect on the process which shapes code and theme development, and once all potential influences from experiences have been fully realized in the investigator, proper reflexivity will have been achieved.

During the data collection process, I used the mobile phone application, Rev, to record the interviews on my personal, password protected mobile device. For the scholar informants, because they were identified by name, I did not need to use aliases on their transcripts, however, I still had to hold their personal contact information. That information was secured on a handwritten note stored in a lock box in my home office. Observational notes from the participant observation was kept in a personal notebook which stayed with me at all times during the data collection process. When identifying the workshop participants and chef graduates, I used alias names, but there is always a slight risk of their identities being revealed.
as no study can be one hundred percent secure. Such risk, though minimal, is unavoidable and occasional in research studies which do not reveal participants’ identifications. The coded names of the workshop participants and chef graduates was recorded on a hand-written note secured in the same lock box with the scholar informants’ personal information. When not in use, the personal notebook was stored in the lock box as well. Like in the case of the scholars, personal data from all other case study participants, like contact information needed for member checking, was kept in the lock box. All electronic material saved on my personal computer was saved on my UWSP OneDrive with additional password protection. This protocol was shared with all study participants.

During the data collection process, only I had access to the identification data of all study participants. Following UWSP protocol, a faculty of record had to identify as the principal investigator overseeing my doctoral study. Henry St. Maurice, emeritus faculty member at UWSP, served that function in this study. He and my dissertation committee were only be able see data from my study without identifiable information. Such data included transcribed, interpreted, and coded material absent of identifying information. Transcription services were also provided by Rev on their password protected app and website, absent of identifying information of participants. As my study continued to come together, the final compiled and interpreted data was added to my dissertation research report where it was analysed and investigated by committee members, defended, and eventually published for public dissemination. After publication, all research materials, including that of identifying information and analysed/coded information, will continue to be stored separately for seven-years and then subsequently destroyed or deleted. Ultimately, case study challenges can be
diverse, but it is a researcher’s job, “…to illuminate the obvious and subtle dimensions of this context” (Erlandson et al., 1993).

As outlined in Chapters 1 and 2, modern culinary pedagogy is unsustainable in practice and in principle (Deutsch, 2014; Woodhouse, 2015, 2016). Many of these principles are imbedded in habits formed in culinary education. Such culinary pedagogy is based off a master-apprenticeship model hailing back to the Middle Ages, and an industrial factory mindset adopted during the Industrial Revolution (Deutsch, 2014; Woodhouse, 2015, 2016). Like other dualist western establishments, modern culinary education reinforces social inequity, ignores environmental destruction, and is destructive and unsustainable in the long term. The risks taken by continuing to operate in this way far outweigh any risks associated with this study.

In setting up interviews with the different case populations, I explained my research in broad terms, stating my study is designed to determine how sustainability should be taught in culinary education. As outlined in all my information protocol sheets and consent forms (Appendix D), I sought to setup an interview without coercion or deception. I notified participants that their participation was not required, they could opt out at any time, and there will be no consequences for them opting out of the study. To do so, any study participant could either decline consent up front, or opt out by notifying me in person, or later by email.

As evidenced by three IRB low-risk designations, potential benefits and risks to study participants are minimal and vary by group. Risks posed to them are no greater than risks experienced in everyday life. For the scholar group, though Heldke, Belliveau, and Trubek are very well known and regarded as leaders and in their field, having their input in my dissertation
research with the intent to publish, is another opportunity for the researchers to further affirm their positions as thought leaders within their particular arenas.

The workshop participants did not directly benefit from this study; however, semi-structured qualitative interviewing does prompt reflection in interviewees, which could or could not have trigger a transformative and emotional moment. Such risk was minimal however, and no more likely to reasonably occur than any ordinary daily event. The line of questioning in this case was not provocative or intended to be deeply expressive. If a negative reaction were to have occurred during an interview, I would cancelled it and attended to the interviewee as appropriate. It was possible the workshop participants could have been be at risk of becoming uncomfortable with the participant observations should they have seen me writing notations on their behaviours. To avoid that appearance, observations were taken with discretion during opportune times. Using abbreviated notes, I expanded upon the field notes later in private while reflecting on the day’s events.

For JWU graduates who attended the Wellness & Sustainability Concentration, participants would not directly benefit from being interviewed, but indirectly, could be affected if the macro goal of the dissertation study succeeded in outlining what a culinary sustainability education encompasses and then was widely adopted. A shift in paradigm would affect not only participants, but all associated with a food system since a healthier, more sustainable food system benefits humans and non-humans alike. Those who stand to lose would be those who have been advantaged in the current paradigm with power and privilege over others.

Many researchers (Bateson, 2002; Capra, 2002; see also Capra & Luisi, 2014; Curren & Metzger, 2017; Freire, 1970; Fromm, 1995; Orr, 1992, 2002, 2004, 2016) promoted scholarship arguing the opposite, that an opportunity at equality promoting relational, holistic,
and sustainable living with others and the world around us would make winners out of everyone. In recruiting this group for interviews, I avoided coercion with the social media advertisement for recruitment. This group was at minimal risk with the exception of a possible negative or emotional response if a transformative movement were to occur during the chef graduate’s reflection. Again, if such a response, however unlikely, were to occur I would stop the interview and tend to the interviewee.

**Data Collection**

Semi-structured qualitative interviewing was the primary means of data collection chosen in this study for gaining insights into research participants’ experiences and opinions. It was an ideal way to gather deep data which could inform the development of culinary sustainability programming (Creswell & Creswell, 2018; Merriam, 2009; Yin, 2009). When practiced effectively, researchers claim such an approach to the interviewing process provided a holistic and naturally conversational approach which results in richer data (Creswell & Creswell, 2017; Erlandson et al., 1993; Merriam, 2009; Yin, 2009). With that goal in mind, Merriam (2009) offered important qualities for the semi-structured interview format:

- Interview guide includes a mix of more and less structured interview questions;
- All questions are used flexibly;
- Usually specific data is required from all respondents;
- Largest part of interview is guided by list of questions or issues to be explored; and
- No pre-determined working or order (p. 89).

My interview schedules were designed based on these considerations. My questions were structured enough to meet IRB standards, but flexible enough to allow discussions to
gravitate toward themes and issues in conversational ways (as opposed to more scripted approaches). These interviews were audio recorded and later transcribed using a secure phone application and web platform called Rev. It was then reviewed and coded using an application called NVivo 12. This coding methodology was guided by Creswell (2007), Creswell and Creswell (2018), and Yin’s (2009) approaches to case study analysis.

Merriam (2009) stressed “the case study offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon” (p. 50). Accordingly, the three different interview groups provided a comprehensive view of the investigatory content by being categorically distinctive. Targeted questions were scripted for each individual group in order to answer components of my inquiry their case group best aligned with. For the scholar informants, their content knowledge and intentionality in program design was intended to provide the perspective of the theorist and educator planner of educational experiences and programs. For the workshop participants, the perspective of student learners was focused on, and potentially critically enriched by their familiarity as teachers themselves. For the chef graduates, their experience in a culinary sustainability program appended by their recent career experience afforded a potentially dynamic view of what may or may not have been impressionable and what may or may not have resonated into their careers or personal lives. The information gleamed from each of these three groups was intended to provide broad insight into different perspectives of a food-related sustainability program, as well as rich data to code and analyze. Such an analysis can be used to improve existing programs as well as inform the development of new programs (Merriam, 2009). Interview questions framing the semi-structured qualitative interviews can be found in Appendix C.
In arranging interviews, challenges occurred between the semi-structured holistic approach to qualitative interviewing and the strict, comprehensively scripted interview guidelines laid out for human protections as enforced by the three IRBs I applied to. Flexibility in interviews is key to rich data (Yin, 2009; Merriam, 2009) but problematic when applying for IRB approval. To navigate this challenge, I scripted out all my key qualitative questions in an interview schedule, including a few follow up questions. Other follow up questions which emerge from the dialog naturally, were anticipated. This was explained in my IRB protocol applications. Question structures followed recommendations by Merriam (2009), Yin (2009), and Sunstein and Chiseri-Strater (2007) to help guide “…conversations rather than structured inquiries” (Yin, 2009, p. 106). As the researcher, needed to operate on “…two levels” (p. 106), driving my line of inquiry “…while simultaneously putting forth ‘friendly’ and ‘nonthreatening’ questions…” (p. 106).

Challenges during interviewing which I anticipated coming across included “…common problems of bias, poor recall, and poor or inaccurate articulation… a reasonable approach is to corroborate interview data with information from other sources” (Yin, p. 109). Tactics I considered would do just that included cross referencing the interview data from all the participants during coding to search for patterns. In that way, some rare and random data would drop off, while more consistent data would reveal significance. Creswell and Creswell (2018) called this process “winnowing the data” (p. 192). In case study analysis the process of finding what stands out as statistically significant can take place through the triangulation process. As Creswell and Creswell (2018) explained,

*Triangulate* [emphasis original] different data sources by examining evidence from the sources and using it to build a coherent justification for themes. If themes are
established based on converging several sources of data or perspectives from participants, then this process can be claimed as adding to the validity of the study (p. 200).

Cross-case comparisons are similar mechanisms for comparing data (McGregor, 2018), while the practice of member checking is also an important component to ensuring validity (Creswell & Creswell, 2018, p. 200). To member check, I shared each person’s transcript with them so they could confirm accuracy. As submitted to IRB, any participant could withdraw from the study at any point, including at the analysis stage. If any interviewee disagreed with their script, I would correct it if possible, or omit it from the study.

Facilitating interviews was a carefully considered element of the interview process as well. For the scholar informants, requested to set up interviews with each of them in a private location (see scholar informant interview protocol sheet in Appendix C). For the workshop participants, I initially invited anyone who would be interested in being interviewed to let me know. More specifically, during my participant observations, informal discussions helped me “…discover those who should be interviewed in depth” (Merriam, 2009, p. 105), and invite them again to be interviewed. No one interested in being interviewed was turned away. For the workshop participants, I scheduled these interviews after the workshop and in a private setting. For the chef graduates, the IRB approved social media posting was the recruitment tool for soliciting prospective interviews. Those interviews took place at the participants’ convenience using the Skype application.

For the participant-observation component of my research, different considerations had to be taken into account. After receiving approval to conduct my study and registering to be in the workshop myself, I presented my study and intentions to the scholars and my fellow
workshop participants at the beginning of the program. There, I followed the outline and script in my workshop participant information and oral consent form (Appendices C & D). Among the conditions of my study, scholars and workshop participants were guaranteed the ability to opt out of my ethnographic observation at any time, where any previously recorded data would be erased. Regarding the capturing and security of their data and any other data relevant to the study, I secured digital information such as downloaded interview scripts and contact information onto a password-protected computer each day, while physical documents, like class handouts and my class notebook, were locked in a lock box.

My data collection tools were my personal observations of, and conversations with, the scholars and participants; my personal experience in the workshop; course work materials; and any other relevant observations I took notice of. Conversations I had with individuals from the two groups during the workshop are considered unstructured/informal, according to Merriam (2009). She suggested the following qualities are associated with this kind of informal structure:

- Open-ended questions;
- Flexible, exploratory;
- More like a conversation;
- Used when researcher does not know enough about phenomenon to ask relevant questions; [and]
- Goal is learning from this interview to formulate questions for later interviews… (p. 89).

Data was recorded hand scribed in a handheld notebook for field notes and some photos were taken of workspaces or hand actions, but not of anyone’s face or with any identifiable
personal objects. These photos were taken as a precaution, but not used in the study. Standard benefits from this insider approach to research included richer data collection, closer contact with research subjects, ease in scheduling interviews, and the ability to build rapport more easily than I would if I were just conducting interviews (Yin, 2009). Yin (2009) stated “another distinctive opportunity is the ability to perceive reality from the viewpoint of someone ‘inside’ the case study rather than external to it. Many have argued that such a perspective is invaluable in producing ‘accurate’ portrayal of case study phenomena” (p. 112).

The standard limitations did apply however: I had to be careful that my insider role did not inject bias into my research, that I would not enculture myself into the group, and that I would not be too busy participating to make good or meaningful observations (Yin, 2009). To account for these potential problems, I remained reflexive and reflective in my approach. I divulged my position as a participant observer and researcher to the group and adhered to my protocol and interview scripts/schedules. My field notes were expanded upon after reflecting on the program at the end of each day. I also reflected on program materials.

As one such artifact, Belliveau and Heldke (2019a) handed out ten Deweyan tenets they drafted which they described as “…a compact philosophy of kitchen-room teaching and learning (p. 1). They present the list each year during the program. Table 3 illustrates the tenets and provides an explanation for each.
Table 3. John Dewey Kitchen Institute Tenets

<table>
<thead>
<tr>
<th>Tenet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Education is a practice of democracy</td>
<td>The aim of education is the creation of a thriving democracy; the activity of education is itself an embodiment of democracy. You cannot do this alone. Thus, our teaching and learning actively work to create democratic community.</td>
</tr>
<tr>
<td>2. All inquiry is value-laden</td>
<td>The desire to know emerges in response to human problems and questions. To the degree that our inquiry addresses those problems, it is rooted in human values; aesthetic, ethical, and discipline-specific. There is no such thing as “value free inquiry.”</td>
</tr>
<tr>
<td>3. Education is experience</td>
<td>Education is best understood as “intelligently directed development of the possibilities inherent in ordinary experience.” While all experience is educative, some is mis-educative. Instructors must create learning contexts that will foster genuinely educative experiences--those that will promote further intellectual growth.</td>
</tr>
<tr>
<td>4. Theory is practice</td>
<td>The relationship between theory and practice is actually a relationship between two modes of practice. When theory and practice operate together effectively, learners act reflectively and inquiringly; act, that is, with a sense of purpose and for the sake of learning.</td>
</tr>
<tr>
<td>5. Education begins where students do, and is focused on learning as an activity, not as a product</td>
<td>Learning emerges from experience, with a question or confusion. It leads to further experience--and new confusions. Thus, we seek to create conditions in the classroom, which enable students to learn how to ask, “the next question” rather than to come up with “the next answer.”</td>
</tr>
<tr>
<td>6. Aims and means interact in education</td>
<td>For the student, a “true aim,” as opposed to one externally imposed (by a teacher, for instance), is one that will actually inform how one chooses to act. True aims thus translate themselves into means that a learner can understand, in which they can become engrossed, and which they can see to the end. Thus, in teaching we work to enable students to identify and own their own true aims.</td>
</tr>
<tr>
<td>7. Play is vital in learning</td>
<td>Play is “interested absorption in activity for the sake of activity itself” (“Growth in Activity”). Defined thus, it is far from trivial; it is the heart of education. Therefore, we treat play with serious respect, and make opportunities for it. Play is also not easy; it requires us to be willing to suspend presuppositions, prescriptions and “known facts” that we carry into inquiry. When we willingly suspend, we free ourselves to experience the familiar as strange and full of surprises.</td>
</tr>
</tbody>
</table>
CULINARY SUSTAINABILITY EDUCATION

<table>
<thead>
<tr>
<th>Tenet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Chance and change</td>
<td>Uncertainty is part of the fabric of our world, the fabric of experience. Our interactions in the world must “live” with that situation. Educators are thus called to create in our students the capacity to function flexibly in a world of chance and change.</td>
</tr>
<tr>
<td>9. Mind is a verb</td>
<td>The human “mind” is not an organ, but a general character or attribute that infuses all of a human being. “Minding” involves our entire, sentient bodily selves. To inquire, to investigate, to “mentally” explore our world always involves bodily engagement with that world.</td>
</tr>
<tr>
<td>10. Experience is both instrumental and consummatory</td>
<td>Human experiences are potentially either “instrumental” or “consummatory” or both; they lead us to a further experience, or they are enjoyed for their own sake. Education draws upon and creates both kinds of experience.</td>
</tr>
</tbody>
</table>

Note. Adapted from Belliveau & Heldke (2019), University of Vermont.

Table 4 presents the case study components and the process and rationale for each, while my codebook shows alignment of my interview items with my research questions and relevant literature (Appendix E). For this instrument, I intended the last column to contain not only data from empirical studies, but also supporting literature from the field. All collected data from interviews and observational notes was used in the case study analysis portion of my study.
Table 4. Data Collection

<table>
<thead>
<tr>
<th>Source</th>
<th>Process &amp; Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary:</td>
<td>I took part in the workshop as a fellow participant and researcher in order to gain a deeper student perspective. I kept a notebook and pen in my apron for taking notes on all activities, including interviews, and I operated in the course with fellow participants who were aware I was a participant-observer there for doctoral research on their experience in the program.</td>
</tr>
<tr>
<td>Notes from semi-structured qualitative interviews, classroom observations, conversations, lecture, activities, thematic analysis of reflective stories.</td>
<td></td>
</tr>
<tr>
<td>Primary:</td>
<td>Using an iPhone 8 application called, Rev, I audio record interviews with the scholars who developed the program as well as fellow participants experiencing the program firsthand. I did the same for the chef graduates. The app also provided transcription service I used to collect and analyze my data for chapters four and five of my study.</td>
</tr>
<tr>
<td>Audio and transcription data.</td>
<td></td>
</tr>
<tr>
<td>Secondary:</td>
<td>Data available on the program website was used to describe the program and its intended outcomes. Educational materials used throughout the workshop provided additional data resources to help describe participant experiences and scholars’ intentions.</td>
</tr>
<tr>
<td>Workshop web, marketing, and educational materials.</td>
<td></td>
</tr>
</tbody>
</table>

**Data Analysis**

As Yin (2009) explained “data analysis consists of examining, categorizing, tabulating, testing, or otherwise recombining evidence, to draw empirically based conclusions” (p. 126). Yin (2009) said that “…every case study analysis should follow general analytic strategy, defining priorities for what to analyze and why” (p. 126).

My analyses was based on my theoretical propositions, as follows:

- Identifying causes of transformative learning;
- Conditions which foster it;
- Indications of Sterling’s (2001) learning as sustainability; and
- Signs of holistic experiential learning by doing.
Figure 5, based on Creswell and Creswell (2018), details the steps I followed in my analyses.

*Figure 5. Data Analysis Process*

Note: Adapted from Creswell & Creswell (2018), p. 194. © SAGE.

Upon deciphering the transcripts, I identified what was relevant to my inquiry, then sent the materials to interviewees for member checking. No one else had access to the transcripts except myself and the individual participants. Data was reviewed and coded carefully using my codebook (Appendix E) and the application *NVivo 12*. Participants’ names were hidden by using aliases. In addition to interview data, my observational notes were also available to analyze as well. With these data sets, I then conducted what Yin (2009) described as a “cross-case synthesis” (p. 156) to compare information.

After initial coding, I conducted a first-level thematic analysis comparing my findings within the themes and codes I anticipated, in addition to the themes and codes which emerged unanticipated during the study. This analysis was followed by a second-level cross theme
analysis, where I found intersections between themes which led to new avenues of discovery. I compared these findings to my ten propositions for CSE. To conclude my study, I conducted a third-level analysis, where my research questions, findings, autoethnographic narrative stories, and conclusions were considered together with the literature to make my recommendations.

I identified, isolated, and analyzed data which related to my theoretical propositions (Appendix B). More specifically, characteristics representing transformative learning and holistic experiential learning constructs were laid out in order to develop tools for coding data. I had hoped to identify causes of transformative learning, conditions which foster it, indications of Sterling’s (2001) learning as sustainability, and signs of holistic experiential learning by doing (Appendix E). Yin (2009) recommended analysis based on theoretical propositions “…which in turn [reflect] a set of research questions, reviews of the literature, and new hypotheses or propositions” (p. 130). The coding and analysis process outlined in this research project, combined with theoretical mapping, met Yin’s threshold by utilizing my theoretical propositions to inform my codebook for testing my inquiry in different cases.

Throughout the research project, I included validity checks including the identification of potential biases through the process of reflexivity of the author; member checking transcripts as presented in Chapter 4; data triangulation through the comparative analysis of the three cases and participant-observations within the case study; the identification of delimitations limiting the scope of the study; and the documentation of the procedures and protocols guiding the case study.
Research Trustworthiness

As I considered my positionality while conducting my study, I aimed to remain reflexive and be aware of predispositions in order to obtain valid results and control for biases (Creswell & Creswell, 2018). Applying checks in the study design was one way to help ensure this. In my study, an explanation of my research was provided to all study participants and an IRB-approved protocol was reviewed for each. Consent was obtained in each leg of the study, and no participants were incentivized in any way. A risk assessment was conducted, and all three IRBs determined the study to be low risk. The confidentiality of the scholars’ personal contact information was stored securely, even though their identities are to be divulged in the final report. For the two remaining participant groups, their identities and contact information remained hidden through coding and securing under password protection on my home computer. Lines of questioning for study participants were approved by respective IRB committees and considered, again, low risk.

In reviewing challenges to the component parts of a case study analysis, Creswell and Creswell (2018), Yin (2009), and other methods researchers (Erlandson et al., 1993; Merriam, 2009; McGregor, 2018; see also Creswell, 2007) delineated limitations to qualitative and participatory approaches.

Delimitations are boundaries set by a researcher to control the range of a study. McGregor (2018) delineated between delimitations and limitations, explaining the former “…are within the researcher’s control and refer to earlier decisions pursuant to setting the scope of a research project before it starts” (171), while limitations refer to influences on the study which cannot be controlled. Delimitations to this study include its case study design methodology since it is the most ideal way to gather data about qualities of a culinary
CULINARY SUSTAINABILITY EDUCATION

sustainability program from various perspectives (Creswell & Creswell, 2018; Merriam, 2009; Yang, 2009). Data was to be collected from four distinctive points within three cases. One group of participants was chosen for their authority related to educational sustainability design and theory, called the scholar informants. Limitations within this study included: the range of information sought was limited to program design; their experience in sustainability education including the JDKI; and their opinions surrounding food, education, power, and culinary arts. Any interview script data unrelated to the topics being considered in the inquiry was removed through the process of winnowing (Creswell & Creswell, 2018).

The next case study group, the workshop participants, was chosen for being learners experiencing a program which applies experiential food practice to Deweyan principles of democratized education, a program compatible with educational sustainability design and food/culinary practice. In researching this group, similar to the scholars, I organized semi-structured qualitative interviews with individual participants. Within these interviews, I limited my questions toward investigations relevant to my research in the workshop experience, and I again, winnowed the data to remove answers divergent from the areas I was researching.

The workshop where the scholar informants and workshop participants interact was also doubling as the setting for my participant-observation. As such, it provided an anchor to triangulate interview data against while also providing important background context for the study. Observations made which were not important to the study were trimmed away.

Much like the other interview case groups, the third case group had been chosen because they provided another perspective for the study. As graduates from a culinary sustainability program, this group is now in their careers and was able to provide a unique perspective reflecting back on their experiences in their program. Like the other cases,
information gathering was aimed at the research inquiry. Any information collected otherwise was left out.

To further ensure trustworthiness and validity of a study, Creswell and Creswell (2018) recommended taking *quality reliability* measures. To do so, a researcher would need “…to document as many of the steps of the procedures as possible…” (p. 201) to set up “…a detailed case study protocol and database…” (p. 201). The theorists also recommended checking manuscripts often and periodically revisiting coding definitions to ensure a drift in coding does not occur as transcripts continue to be processed. In this case study, these steps were accounted for throughout chapters three and four where the research project and its findings were laid out in their entirety—and in practice, where coding definitions map to characteristics of theoretical propositions outlined in Appendix B. The process of triangulation also served as an effective exercise in double checking coded transcript information between the four sources of data as well.

**Summary**

The purpose of this study is to transform culinary education toward culinary education *as* sustainability. The research design employs a case study methodology to research such phenomena in order to determine findings, draw conclusions, and speculate on implications. Steps along this process were outlined, and data collection methods were listed, and interview protocols were presented. Interview questions were mapped to research questions and literature concepts, and my plan for data analysis was described. Finally, ethics, intentions, biases, controls, and safeguards were considered to determine the benefits and risks of the study, while limitations and delimitations were also reviewed.
Chapter 4. Findings

Overview

In Chapter 1, I laid out challenges to sustainability in the foodservice industry and deduced that culinary education’s dedication to culinary tradition creates and reinforces beliefs and practices which are counter to sustainable practice. This feudal industrial model reinforces through a negative feedback loop traditional issues of power, equity, and dualist thinking, among other modernist proclivities. This is what is responsible for the sector’s inability to respond to the call for societal change. The specific kind of education I suggested was a culinary education about, for, and as sustainability (Sterling, 2001), that is to say, a culinary sustainability education. I further speculated that culinary educators are challenged with determining how culinary education can be transformed holistically toward sustainability. It was my purpose to formulate a vision for chef educators that would lead them out of the instrumentalist, modernist view of culinary education and practice into a critical postmodern perspective which shared a sustainable vision of culinary arts. I proposed undertaking empirical research to identify pedagogical strategies that would transform the learning experience of chef students away from the current paradigm to one of sustainability. To achieve this ambition, it was determined that the negative feedback loop presented in Figure 2 must be severed. To that end, I proposed the following research questions:

- What constitutes a culinary sustainability education and what principles might guide future programming?
- How might traditional culinary arts programming be transformed and operationalized into a program plan for culinary education as sustainability? (structures, relations, goals, practices, conditions)
What desired outcomes and barriers to this transformation is experienced by learners in a higher education setting?

My aims were to address my research questions using semi-structured interviewing of three groups surrounding a type of food sustainability program. A UVM special summer session for educators at the JDKI was the setting for two of my cases and for my participant observations. As my third case, I interviewed graduates of the Wellness & Sustainability Concentration at JWU, including their perspectives of a first attempt at transformative programming. Between interviews, I transcribed and coded scripts for use in data analysis. The following sections present findings with a level 1: thematic analysis and a level 2: analysis across participant groups and the story of transforming my stance as an educator. A critical analysis of my themes are woven throughout.

Level I: Thematic Analysis

Interview data from the scholar informants, workshop participants, and chef graduates was deductively coded into three predetermined themes as follows:

- Critique of culinary modernism and sustainability challenges;
- Vision for sustainability; and
- Pedagogy and learning.

These themes mirrored those proposed in my literature review, which also served to assess my ten culinary sustainability propositions. In addition, I inductively coded 42 subthemes. Appendix E shows the structure of all the themes, subthemes, and codes, as well as the number of instances that each were found in interview responses by each group and as a total. Subthemes and codes were organized based on the most prevalent to least prevalent within a theme.
Theme 1. Critique of Culinary Modernism and Sustainability Challenges

The first theme was assembled based on my postmodern analysis of culinary education and the culinary industry. It contained three subthemes, as follows:

- Power;
- Modernism; and
- Roles.

Findings from the first theme can be found in Table 5.

Table 5. Critique Theme, Subthemes, Respondents and Frequencies

<table>
<thead>
<tr>
<th></th>
<th>SI*</th>
<th>WP*</th>
<th>CG*</th>
<th>n**</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critique of Culinary Modernism and Sustainability Challenges</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>40</td>
<td>15</td>
<td>10</td>
<td>8</td>
<td>65</td>
</tr>
<tr>
<td>Power and Food</td>
<td>21</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>36</td>
</tr>
<tr>
<td>Hierarchy</td>
<td>11</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Gender Issues</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Modernism</td>
<td>21</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>41</td>
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<tr>
<td>Globalization &amp; Capitalism</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>17</td>
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<tr>
<td>Positivism &amp; Dualism</td>
<td>5</td>
<td>6</td>
<td>0</td>
<td>5</td>
<td>11</td>
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<tr>
<td>Food Waste</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>7</td>
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<tr>
<td>Factory Taylorism</td>
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<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Roles</td>
<td>18</td>
<td>9</td>
<td>4</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>Social Efficiency</td>
<td>14</td>
<td>4</td>
<td>1</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Traditional Culinary</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

* SI = Scholar-Informant; WP = Workshop participant; CG = Chef Graduate

** Number of respondents.

The first column lists the themes, subthemes, and codes. The following column lists the number of indicators each case triggered during qualitative interviewing. Code totals are aggregated within subtheme rows, and all totals are presented in the final right column. The
last column is not controlled for duplicate codes. This structure applies to Tables 7 and 8, as well as Appendix E.

**Power.** Within the critique of culinary modernism and sustainability challenges theme, aspects of power was the most frequent subtheme, which was formed to encompass the following three codes:

- Power and food;
- Hierarchy; and
- Gender issues.

Many dynamics of power were expressed in interviews, such as in the case of Miranda Swiss (a pseudonym), who was one of the workshop participants at the JDKI. When asked how the workshop was going for her, she expressed some trepidation as follows:

**Swiss:** For me, it's a little intimidating because I have no formal culinary or kitchen background. I'm not a health or home ec teacher. So, I think for me, and the fact that there are so many people that seem connected to the culinary arts or nutrition, it's been a little intimidating.

**BJL:** Do you think the main intention of the course is about cooking specifically?

**Swiss:** I don't think it is, which is why I signed up. Those tenets seem to be all-encompassing in terms of educating children. The direction of a lot of the conversations, so far, have been really food-crafting specific.

**BJL:** I caught it, too. A lot of people are asking specific culinary methodology questions.

**Swiss:** Yes! I have no idea.

**BJL:** Lot of ‘foodies.’
Swiss: Yes! Which is fun, but yeah, intimidating.

BJL: I understand. What are some ways it could be, that you perceive to be intimidating?

Swiss: Well, I think the vocabulary and some of the tasting. People know things about the weight of what they're consuming, or just in the techniques, like some will say, ‘Oh, should we, I can't think specifically but, should we blah-blah something with the x?’

BJL: Like maybe French technique or something like sauté?

Swiss: Yes, like I have no idea. And a little scary in the lab… I'm always peering over at the other groups to see what they're doing… pretty nerve-racking.

Swiss felt intimidated by the presence of so many food enthusiasts in the education workshop who seemed conversant in topics surrounding food. As a professional chef, educator, and co-participant, I had to assume I could be one of them. Despite efforts by Dr. Belliveau’s to mitigate power dynamics introduced through the workshop’s food, sensory, and cooking activities, my field notes affirmed during cooking and tasting that some showmanship banter took place between participants who were excited and forthcoming with their experiences with food. One described himself as an avid griller, another discussed her idea of a perfect quiche, and yet another provided detailed examples of wines she considered to be good matches to the food we were tasting during one of Dr. Belliveau’s “palate solving” activities. I observed similar dynamics when participants discussed Deweyan theory as well. Swiss took these interactions to be disempowering, while those demonstrating their greater food knowledge seemed to grow more confident and enthusiastic in the conversations. Such a display of one-upmanship revealed a competition for class distinction and position within the class. Those
who participated seemed to want to prove they were qualified to be there. Swiss’s summation illustrated not only power, class, meritocracy, and food dynamics, but it also signified a disorienting dilemma as part of a transformative learning process. Confusion resulting from her experience forced her to make new connections in order to operate in what she perceived to be a threatening environment. For the remainder of the workshop, Swiss seemed to make it work. She actively participated in the remaining cooking sessions and discussions with marked enthusiasm, despite the topic of foodmaking practice continuing to dominate much of the conversation. On the last day of the workshop, the teams presented their final project, which was a mystery basket dish metaphorically themed to match one of the Dewey tenets. Swiss spoke for her group and presented their dish with pride, noting she and her partner were not “big cooks,” but managed to make some pretty good-looking food products anyway.

Later in my interview with Swiss, she talked about food literacy again, but framed around the JDKI tenant: Education is a practice of democracy. She spoke about her K-12 students and their challenges with race and class inequality, as follows:

BJL: What experiences have connected for you in this program?

Swiss: Some of the things that I like. That's gonna make me emotional. I like the democracy, or the exploration of what that means… it's totally different as a US history teacher. We're not building a republic. I get that, but the idea of access, or then some of the discussion for students around food. They don't know what kale is… My students are predominantly free and reduced [referring to subsidized lunch prices], so there's food scarcity and there's [pause] they don't have access or the ability to pay for expensive ingredients. So, it's a lot of white carb filling their bellies [pause] truly, so they're full.
Yeah, the democracy, the access, the keeping in mind the experience. Not just of the cooking, of education and just my student's experience, remembering… a couple of times it's resonated in the discussions. Our kids aren't all equal, even though we have this beautiful idea that our classrooms [are] always this oasis. So [pause] democracy.

In the case of my interview with Swiss, she showed the connections between dynamics of power, food elitism, democracy in education, and social justice. Gender issues were not brought up by Swiss, or anyone from the workshop participant or chef graduate case groups. Only data from the scholar informant case group emerged as gender issues, and it did so a moderate amount of times.

**Modernism.** The second most prevalent subtheme in the critique of culinary modernism and sustainability challenges theme was modernism. Responses within this subtheme were further categorized into the following four codes:

- Globalization and capitalization;
- Positivism and dualism;
- Food waste; and
- Factory Taylorism.

Food waste emerged from interviewees in the scholar informant and chef graduate case groups where they commonly used it as an example of a sustainability shortcoming related to food or food preparation. The workshop participant case groups did not mention food waste and said little about factory Taylorism.

Similar to Swiss’s interview, scholar informant, Amy Trubek indicated rhizomatic connections when I asked her why critical theory and food are so often paired together:
Trubek: When I started working in thinking about food and when I was in graduate school, it really wasn't [pause] there was a little bit of critique that went on, but it's really been in the 21st century with the rise of the food movement and a lot of ideas that we have a food system that is not functioning to the right ends that you see [where] more of this critical approach comes… but I also think that one of the reasons you see that happening is that a lot of the reasons that critical scholarship came up was [in the] critique of globalization and sort of the repercussions of the globalization on people's livelihoods and also on their consumption patterns… food is really tangible and you can follow the supply chains. And I think there's a lot of reasons why it made a lot of sense for people who are involved in sort of critiques of capitalism and globalization to focus on food. And then I think from there you also got the people who were looking at critiquing issues of gender and so they also would look at food particularly from the point of view of feminism and sort of wanting to understand why women working always [has] been defined as care work and not given its fair due.

The scholar connected the food movement and feminism in reaction to the globalized food system. These cause-and-effect relationships also revealed elements which are less appreciable, such as in social justice, practical considerations, and the potential food has to reveal inequity.

Roles. The roles subtheme turned out to be the least indicated in the critique of culinary modernism and sustainability challenges theme, however, it was still found 31 times, and by all eleven interviewees in all three cases. This finding suggests some prevalence across scholars, students, and graduates alike. This subtheme comprised the following the codes:
• Social efficiency; and
• Traditional culinary.

In different scholar interviews, a social efficiency mindset emerged in both seemingly negative and positive ways. Scholar informant, Lisa Heldke, referenced it when presenting a common stigma against culinary education as follows:

**Heldke:** What if we actually used food to inquire? Not just what if we inquired about food, but what if we inquired with and through and as food? And I'm sure for you, it must feel like [pause] It must feel weird to say that, because of course that is exactly what you do, and of course you also know that there are many ways in which culinary education is still treated as second-class, right? It's not the high art that the study of the classics or philosophy is, right?

This excerpt also related to adaptive learning, sensory led head work and hand work, and class hierarchy. Heldke’s mention of culinary education references a common stigma that vocational education is for the labor class and therefore less academically respected. This stigma harkens back to a social efficiency mindset in education, where education is considered training and workforce supply for a capitalistic economic imperative. Further in Heldke’s interview, her “what if” question regarding inquiry through food, marks affective sensory input as an important component to transformative change. Major links to the pedagogy and learning theme are apparent here as well.

Trubek similarly identified a social efficiency perspective when she referenced the labor-role mindset in the traditional culinary profession:

**Trubek:** I think one of the most complicated and important issues that's gonna have to get addressed in the future is the very nature of how labor gets defined in
culinary settings. And this sort of history of the idea that it's like a culture of [pause] it's a masculinist culture and it's a culture of just physical intensity and you just work until you're broken and that it should not be well compensated labor because it's low level work. I think all those things have to get addressed to think about moving the culinary profession to the next level. So maybe I guess there's a duality in terms of the idea of labor and what makes you good or successful and sort of then what would any executive chef's life is propped up upon, which is a lot of people who are doing a lot of really hard ground work for not much compensation.

Trubek’s assertion that workers in the culinary trade need to address their station in the social hierarchy in the future called attention to not only mindsets in social structures, it also prompted questions surrounding modernist assumptions of value and compensation. The search for a more respectable position within the hierarchy of career trades leaves space for interpretation. Is this an opportunity for chefs to elevate themselves toward sustainability, or toward a meritocratic competition for better economic status? Similar to Heldke’s social efficiency comment, Trubek exposes the stigma that cooks and chefs are of the labor class, with low wages signifying low education, low skill levels, and an overall low value to society. Her “broken” metaphor suggests the chef is considered a tool for use by society; a mechanistic and dualist assumption typified by a culinary careers and lives being propped up on oppression.

Belliveau also spoke of social efficiency and the role cooking may have in it, but in a positive context.

**Belliveau:** Well, I mean as we've said over and over again, we're not learning to cook, we're cooking to learn, so we're using Dewey's principle of mind-body fusion
that the kitchen is this place where it's if you don't think of it as learning to cook, you think of it as a mini society almost, and in that mini society, everybody has a role and they're doing something to get to the [pause] to make progress. If you think of it like that, it's not so much about cooking. There is an overarching concept that the act of working in a kitchen, in a cooperative environment is mirroring collaboration, leadership, conversation, dialogue, argument, all of those pieces that bring someone into ... I mean this whole concept of transferrable skills that we heard yesterday, and I hadn't really thought of it like that, but these are the skills that you will need in your life and oh by the way, we'll also teach you how to handle a knife.

Belliveau’s perspective in food teaching is markedly more cooperative and democratic than the meritocratic and competitive views of modern culinary education. In projecting a positive mindset toward social efficiency, she cited Dewey in challenging the dualist notion of a separate mind and body by uniting them through cooking in the kitchen. Schiro (2008) believes however that social efficiency perspectives link to the industrialization of education to suit economic wellbeing. This conflict may be based on a matter of perspective in that Belliveau is a chef professor working in the current higher education paradigm. As a chef, she is likely to have practical and organizational approaches to teaching which are grounded in her culinary education and training—a chef’s get it done, can do attitude. As a faculty member, she teaches learners who have grown up in the modern era to believe education is about getting jobs and making a career. To support her point in her interview, she referenced practical advantages such as skills transfer and learning to navigate group dynamics democratically, as opposed to the hierarchical approach of traditional culinary education. These are common chef skillsets
and vocabulary reflective of a workforce development mindset. Her assertions included some common assumptions toward progress and fulfilling a role toward social efficiency; dynamics often criticized by critical postmodernists.

**Theme 2. Vision for Sustainability**

The most frequent theme to emerge across all the cases of participant responses was regarding a vision for sustainability. It was made up of five subthemes, as follows:

- Potential of the chef;
- Pragmatic-action oriented;
- Relational;
- Challenging dualism; and
- Social justice.

With more than double the indicators, findings from this second theme are substantial, and can be found in Table 6.
Table 6. Vision Theme, Subthemes, Respondents and Frequencies

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*SI = Scholar-Informant; WP = Workshop participant; CG = Chef Graduate ** Number of respondents.

Potential of the Chef. The most indicated subtheme was the potential of the chef, which included the following codes:

- Potential impact with food;
- Potential impact on cooking and sustainable practice;
- Advocate, leader and teacher;
- Sustainable practice; and
- Impact on growing food.
This subtheme was commonly indicated when respondents spoke about opportunities food can play in classroom and kitchen learning. Food can act as a vehicle for sustainability practice through a chef or educator who can play a role in fostering a more sustainable future; actions which could be construed as sustainability practice; and growing one’s own food.

Impact on growing food was a code which emerged occasionally from the interviews unanticipated from the literature review. Chef graduate, Anton Rickey (a pseudonym), offered a pragmatic example of how food and decisions made by chefs and his company can have an impact in society and the food system:

**Rickey:** A company as large as us makes an impact [pause] so we take all those imperfectly delicious and those seasonal [produce], and we're actually working them into specific menu items and driving that focus on local farms... When our purchasing department at corporate decided that we're going to now approve applewood smoked bacon on all of our menus, we created a shortage across the country because our company was buying so much of it at a time... We were depleting warehouse freezers because [my company] said, ‘We're going to buy Applewood bacon.’ All the supplies were like, ‘We can't keep up with it.’ We literally were emptying warehouses by the week, just in bacon alone. So somebody said, hey, if we have that kind of impact on bacon, why can't we have that impact on local farmers and ecosystems and small economies, where if we're there, we have buying power and impact power far beyond any restaurant or restaurant group is going to have. Right? You've got your Darden's, you've got your Friday's, you've got your Chili's, but [my company] has that ability and just the sheer size because that's probably the
main reason why, is we realize that, hey, we're so big. All we have to do is do small incremental things, and before we know it, we're changing economies.

Rickey’s response demonstrated the potential of food and chefs, and the power of food related decisions made by him and fellow chef operators of his food company. His example was a nation-wide shortage of applewood smoked bacon his company caused when they simply switched a menu item. The gravity and practicality related to their power and potential to impact food production, as well as the potential of the chef to impact taste preferences, reveals pathways for change agents to make real and pragmatic changes which affect people in the real world immediately. The question as to whether this is too much power for someone to hold, or the right kind of power, still remains, however.

Further relevant codes which surfaced included effects of globalized markets in capitalistic society, systems thinking-connections, supporting others (i.e. farmers), and food access. In Rickey’s position, he touches so many lives through his network of supply chains. Growers, manufacturers, distributers, chefs, and consumers are all effected by decisions he makes about the foods they grow, move, pack, prepare, and eat. Rickey spoke about favoring small, regionalized food chains which support local farms. He spoke about providing his customers with superbly wholesome products which were nutritious, economically affordable, and supportive of communities from point of origin to end of sale. Rickey’s sustainability-guided actions are clearly making a difference across the food system, and without his experience in the sustainability programming at JWU, he claimed he would never had known the impact his actions would have had. Recognizing the consequences of such actions is an important part of a sustainability learning process, but so too is knowing what actions to take to identify and achieve desired results.
As is the case with every example provided in this chapter, this one sample does not encapsulate every type of indicator for this subtheme. Interviewees often spoke about the potential of the chef in teaching through food, advocacy, in using food and cooking as a method for learning, sensory analysis to combat dualism, and for modeling sustainable practices. As an example, Trubek said as follows:

**Trubek:** …cooking for the public is such a really interesting pivot between sort of a very powerful, and individual, and domestically based, set of practices and ideas about how we nurture ourselves and the fact that as a society more and more we rely on other people to cook for us. And that makes the chef now increasingly both playing a role, not just in literally practically providing food, but also providing guidance and wisdom. And other forms of knowledge as people are sort of thinking about food in their everyday lives.

This excerpt encapsulated not only the potential of the chef in a leadership, educational, or knowledge role, but it also demonstrates how interconnected the potential is for practical application.

**Pragmatic-Action Oriented.** After Trubek’s previous interview, she went on to explain that chefs can lead the way through example as well—in food sourcing, preparation, and management of not only food products, but processes and operations. Due to so much cross over, the pragmatic-action oriented subtheme was indicated at a rate far greater than other subthemes with the sole exception of the potential of the chef subtheme. This subtheme was created from codes:

- Practical considerations;
- Problem solving; and
• Product sourcing.

As can be gleamed from this data, practical considerations are widely cited by interviewees like Trubek. They are often paired with tangible, action-oriented approaches to problem solving issues around sustainability. When speculating about fostering a more sustainable future, most interviewees emphasized either practical challenges which must be overcome, or pragmatic steps to achieve such ends. A universal attitude was shared amongst most respondents that to achieve a more sustainable future, it would not happen by itself. It would take people making a conscious effort. With Rickey’s company, examples illustrating practical approaches to sustainability include how he sources his products, designs his menus, and supports his community.

Similarly, the emergent code of growing food, can be considered an example of a practical solution to food access and product sourcing challenges. Growing one’s own food saves on grocery costs, eliminates transportation and distance barriers, provides fresher and healthier foods, not to mention numerous intangible benefits. These include working in green spaces, exercising, experiencing what it takes to grow food, and learning to value and appreciate it more.

Belliveau considered practical solutions in every response to problem solving and other topics. In the next excerpt, workshop participant Cassandra Raclette (a pseudonym), expressed the need for more problem-solving skills in her K-12 math classroom like those practiced at the JDKI:

BJL: Do you have any differences in perspective, in or out of the classroom, after attending this workshop for, so far one and a half days of the two and a half days?
Raclette: I definitely have felt more inspiration to do more. Trying to [do more] hands-on problem based [pause], really getting at those thinking skills that are really present in everything that we're doing. …It's possible to focus on those skills and bring them out from whatever is happening, whether it's speaking or math or anything like that.

BJL: Do you think that there's a need for these kinds of skills in education today?

Raclette: One hundred percent. I just finished my first year of teaching, so I've been incredibly shocked with how little problem solving and critical thinking and perseverance skills students have. I've given them some pretty big problems this year, and the number of blank pieces of paper I get back [pause].

BJL: And you get blank papers back?

Raclette: Blank pages. It's a problem that kind of goes beyond whatever we're doing. So, we learn all the skills together and we look at [how they are] tested on those skills. And then once they meet the proficiency on those skills, they're given a problem that brings it a little further, puts them together. And then as soon as that happens, they read the problem and they stop. And so they'll write, ‘We never learned this,’ or hand in a completely blank piece of paper without even trying to break down a problem or think about it or think about what tools they have that they can pull out of that class that we just had, or the week we spent studying something. They just don't have that skill. So, I'm really trying to come up with ways to teach such a difficult skill to teach. It's not something that's easily explained [pause], how you can think critically about a problem. It's kind of personal [pause] how you do that?
Raclette identified practical skill sets such as applying theoretical tools to problem solving. That transference is a challenge for her students and something she sees as being applied and practiced through the foodmaking model at the JDKI. The extrapolation of problem solving, and other skills and principles learned at the workshop was a common trend among the workshop participant interviews. As an example, Kelly Laurel (a pseudonym), a K-12 teacher and another workshop participant, spoke about the transferability of the program principles, as follows:

Laurel: So it seems to me as if the Dewey model or the protocols that we're talking about, I can put under the umbrella term of what we do in public school as best practices. And if I understand best practice and I'm steeped in the process I can bring, it's a transferrable model that you can bring into the literacy workshop or the math workshop or the science workshop or the school garden. This team is calling this class the kitchen room. Why couldn't it be the garden room or the math room in a sense? Because everything that we're learning about is transferable.

Laurel’s use of the term transferable matches Belliveau’s when she was describing the program goals. This was ultimately the justification that the JDKI workshop cooperative cooking activities were valid and exchangeable to teachers of subjects different from culinary education.

Relational. Relational was the next prevalent subtheme in the vision for sustainability theme. Codes included the following:

- Participative;
- Systems thinking-connections; and
Adaptive learning. These codes were assigned to descriptions of team or community work, understanding or envisioning how things are connected both naturally and holistically and in supply chains, and points of emphasis regarding flexible, or resilient and regenerative learning and/or ability to adapt to problems or situations.

Adaptive learning was an unanticipated emergent code which came up often with problem solving. Laurel cited propensities similar to the relational subtheme in this excerpt where she described experiential learning of her students in Dewey’s democratized education:

**Laurel:** It's experiential learning. It's knowing what the child brings into the classroom as they first walk through. It's the social emotional aspect of community building and making connections. It's play. Play's still really important, even in a third and fourth grade classroom. When children play, I get to watch, and I get to watch them build relationships and problem-solve. I get to question and wonder with them. So yeah, a lot of what I'm hearing today is really relevant and active in a classroom.

Laurel’s description illustrates the importance of interactive development to adaptive learning in her K-12 classroom. Corresponding to this, Sterling (2001) presented adaptive learning to be a key necessary trait of graduates in the future.

**Challenging Dualism.** Challenging dualism was the next subtheme in the vision for sustainability theme. As Cartesian dualism was not a widely known philosophy amongst interviewees, few directly addressed this subtheme with a notable exception in the scholar case study, where all three directly mentioned challenging dualism in some form or capacity. The codes within the challenging dualism subtheme were triggered by almost all interviewees
indirectly, as case participants discussed various topics such as practicing sensory analysis to think deeper about sensory inputs; about how hand work relates to thinking and feeling; and about how habits of mind and body are changed through experiences. Codes in this subtheme included the following:

- Sensory;
- Hand work head work; and
- Habits of mind.

Rickey discussed literally being touched in a way that engaged his sensory elements and his capacities, by visiting a sustainable farm while in the Wellness & Sustainability Concentration at JWU:

**Rickey:** Honestly, when we went to a Black Bird Farm, and I still remember standing there, and the cow’s sneaking up behind me and licking my ear, and [we were] all seeing how passionate Ann Marie was about sourcing and just how important that agriculture is and to see a small family essentially sustained by essentially just this mindset, ‘Hey, we care about these things, and this is what's important, and we need to drive this to sustain not only people but economies, ecosystems.’ They don't necessarily have such a large impact. The small Black Bird Farm doesn't have as large of an impact on an ecosystem as something like out in the Midwest where, as you know, they wreak havoc on those systems out there. So something small like that. My mindset is that if you get more and more of those things, small farms, ecosystems like that, that they would grow and essentially sustain the local area where they are.
BJL: Besides getting surprising licks from the cow, what experiences were meaningful to you?

Rickey: It was really seeing how Anne Marie not only loved the animals, but just loved what she did and how much she knew about it and what things really meant to her that some restaurants were buying literally entire cows before she could even raise them, seeing honestly how happy the animals were. I know it's kind hard to see really how happy a cow and how happy a pig is, but to see things that are [pause] to see it done in a responsible way and have it maintained, it gives you a perspective of hope, in that it actually can be done because everything looks great on paper, but some things are a little harder to apply in person and in practice. But seeing that Ann Marie was doing something that not only we were learning about in college and in the classroom, but actually seeing her apply proper feeding diets to the cows, proper raising of the pigs. …They're actually doing this in real life. … It's hard to really explain, but it kind of like brings your heart out where it is.

In Rickey’s interview, the importance of size came into question as he compared the impact of a small community farm to a large industrial producer from the Midwest. He spoke strongly of the detachment of the food system throughout his interview in order to tell his story of reunification. As a detached industrial enterprise, the globalized food system separates chefs from their farmers; from knowing their practices and philosophies. Rickey’s insights brought them back together and provided him with hope for a reconnected relationship—chef to grower. This was a stern rebuke to the dualist separation from mind and body; human and nature; chef and food system. Rickey’s indication of hope signifies a deeper-level desire to
reconnect his practice to the natural world where not only his food products come from, but a deeper more meaningful way of being exists in relational dependence. His mention of the recollection of the cow licking his ear and the associated memory of Ann Marie’s agricultural philosophy also indicated sensory learning within transformative learning.

Social Justice. Social justice was the final subtheme within a sustainability vision. Even though it was the least prominent of the theme, nine of the eleven case participants indicated it at least once. This subtheme was the only one in the codebook which did not have any codes assigned. All codes within this subtheme emerged directly from the interviews. They were as follows:

- Food access; and
- Supporting others.

Instances of this subtheme have been illustrated in some of the previous excerpts, such as in Swiss and Rickey’s interviews. Heldke also touched upon it while speculating on diets, privilege, and food access:

Heldke: What's the definition of community food security? That everyone in the community has access to safe, affordable, nutritionally sound and culturally appropriate food at all times of the year. Well, if we were really engaging in inquiry that enabled everyone to do that, that would be freaking amazing… So it's billed as this kind of virtue versus vice kind of battle. What would it feel like to go into a restaurant… and feel like the activity of eating is an activity of supporting the community where community equals the servers and also the earthworms? I mean, that sounds ridiculous, I know.

BJL: No, no.
**Heldke:** But on the other hand, why does it sound ridiculous? If I know that there's some restaurant in D.C. where I don't know, the way they wash the napkins is an object of concern for them, they really say, ‘It's all connected. Let's connect it all and let's make sure that our servers really are getting paid a living wage so they can really afford to do this work that we really think is important.’ Wouldn't that be what we would want? And of course, I know the answer is yes, and that it will cost $10 billion per plate.

Heldke projected possibilities for more just, equitable food systems through improved access to sustainable food and culinary enterprise, but she also grounded her assertions with some pragmatic cynicism of the related costs. Not only were codes related to social justice through improved food access indicated, but also others related to capitalism, potential of the chef, cooking, and sustainable practice. Throughout, she illustrated how relationality, participative communities, systems thinking, and other connections could serve a more equitable and sustainable future, if only practical hurdles related to cost, economics, and issues of power were not in the way and relationality was pursued instead.

**Theme 3. Pedagogy & Learning**

The final theme of my study was pedagogy and learning. This theme was the second most prevalent in my study and contained two subthemes, as follows:

- Dewey; and

- Transformative learning and change.

Table 7 shows findings.
Table 7. Pedagogy and Learning Theme, Subthemes, Respondents and Frequencies

<table>
<thead>
<tr>
<th>Pedagogy and Learning</th>
<th>SI*</th>
<th>WP*</th>
<th>CG*</th>
<th>n**</th>
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</tbody>
</table>

* SI = Scholar-Informant; WP = Workshop participant; CG = Chef Graduate ** Number of respondents.

**Dewey.** Dewey turned out to be a strong subtheme partly since the site of two of my cases was the John Dewey Kitchen Institute, and partly because some of the codes making up the subtheme are common to culinary pedagogy. Those codes include:

- Intentional design;
- Experiential learning; and
- Democratic learning.

All three codes were common discussion points for interviewees from the scholar informants and workshop participants cases. Intentional design and experiential learning were prevalent in the chef graduate case, but not so much in democratic learning, which could be considered an alien topic to that group who have not been exposed to Deweyan educational theory. Still though, a small number of indicators illustrated compatible principles.

Scholar Belliveau summarized well the connection between Dewey, democracy, education, and even the potential of cooking food in the kitchen, as follows:

**Belliveau:** Yeah, well we had a long discussion about democracy... Dewey used
democracy and education almost interchangeably. So when you educate the
group in the tenets of collaboration, cooperation, [and a] sense of pluralism,
here's the result of that. You have a structure that hears all voices. You live in a
structure where there is continual problem-solving. There's continual question-
asking. It's a never-ending process [of] improvement. When you have that kind
of mindset, the kitchen is one of those perfect places to experiment like that,
because it's short, little durations, you have to get a meal on the table. There's
all this problem-solving and collaboration and conversation and angst that
happens, which I think reflects what real life is like.

Belliveau explained how foodmaking within groups exemplifies critical thinking, problem
solving, and collaborating with other’s in real life. She also mentioned “angst,” to encompass
the common struggles which crop up in group dynamics—especially in a cooking setting.
Some of the dynamic forces I witnessed at the workshop included competitiveness between
groups, issues of power, stubbornness, and showing off, among other things. Belliveau’s
pedagogical approach demonstrated intentional design which anticipated these various
dynamics in the experience-creating process which is a hallmark of Deweyan experiential and
democratic learning concepts. These nuances were not lost on workshop participants as Karen
Estragon (a pseudonym), illustrated:

Estragon: …I feel John Dewey takes people seriously as learners. And so if you look
at it from an epistemological point of view, the sense of how knowledge is
created and who gets to create knowledge, that always excited me, this idea that
wow: So I come from a working class background, my parents never went to
college. I was the first person in my family to go to college, but John Dewey
CULINARY SUSTAINABILITY EDUCATION

thinks that I have something to say. John Dewey thinks my parents have something to say, have something to add to conversation. I like that because a lot of academia sometimes feels like it's for the elite and it's reserved for the elite, and you have to jump through all sorts of hoops to get through it… So I love this idea that you sort of boil down Dewey's tenets or read his books, that there's this real sense that you as an individual matter. And if you're a pragmatist, you have to take the individual seriously. You have to take an individual's consequences, what's going on in their lives seriously because you're not resting on some grand theory, you're actually asking people, how is this working for you? What is this like for you? Explain. So you have to care about people's voices. So that always spoke to me.

Estragon’s excerpt drives home the point of democratized education, highlighting the flattening of power and hierarchy. Her vision for sustainability also emphasized pragmatic-action oriented approaches which considered consequences of relationality through collaboration, and the application of social justice to undercut elitism.

Chef graduate Eisner Willow (a pseudonym) focused more on the experience he had as an undergraduate in the Wellness & Sustainability Concentration at JWU cooking plant-based cuisine in culinary lab while also service learning at a local farm:

Willow: It was an eye opener. It was an eye opener to see different techniques using plant based [cooking] and how farmers were connected to food. I thought it was an eye opening experience to go out to these various locations and actually see the work that was put into bringing the food and bringing the animals from conception or harvest to how we got them onto our plates. As far as being chefs,
being outside the [agricultural] industry, sometimes that's lost because whether you're working for a big corporation or a small mom-and-pop place, sometimes you lose that connection that you get with your farmer, or your grower, or however your produce has come to be.

Willow’s experience was related to experiential learning, systems thinking, and modernist dualism (detachment from the food system), but also transformative learning. Throughout the rest of Willow’s interview, he spoke of continuing a plant-centric diet and sourcing his foods locally, attributing his change in diet and food sourcing to the concentration he took at JWU.

Rickey and the other chef graduates from the case study interviews recalled remarkably similar changes in habits which continued into their careers. Their shift in perspective were grounded in experiences they had in the program which were experientially based and driven by sustainability concepts. Learning about and building relationships within their food system while discovering how to operate as a chef in a sustainable way were all new to them as culinary learners. This data indicated that the transformative experience was memorable and permanent for all of the chef graduates.

**Transformative Learning and Change.** Transformative learning and change was the final subtheme in the pedagogy and learning theme. It showed a similar response rate from all three case groups. Codes in this subtheme included the following:

- Perspective change;
- Critical reflection;
- TL curricular design; and
- Disorienting dilemma-confusion.
Perspective change had a strong rate of responses across all case study groups, while critical reflection was predominant for the workshop participants. Attending the summer workshop, all of them seemed to have a goal in mind to improve their teaching practice through lessons garnered at the workshop. Laurel’s interview demonstrated this well when she visualized transposing Dewey’s principles underneath the umbrella of her public school’s best practices. Because the workshop promoted this kind of adaption to specific disciplines, it was fitting to find strong indications of critical reflection since participants had to consider how they would connect the JDKI experience to their practice. It seems the only way to take lessons learned in a cooking application and apply it to completely unrelated disciplines including math, English, French foreign language, preschool education and care, and general K-12, would be to critically reflect upon the deeper meaning behind the objectives of the lessons toward the philosophical assumptions.

Similar to Willow, another chef graduate, Natasha Greens (a pseudonym), described her experience in the Wellness & Sustainability Concentration as eye opening:

**Greens:** So it was eye opening because I feel like a lot of people, especially since we were, I believe one of the newer cohorts… So I feel like the people that went into it with me as well, we had a little bit of an understanding, but I feel like once you're immersed in the program, it's just like your eyes are open to a whole new world. You don't realize how much should and needs to be done, I guess, especially on our end in the industry. But I think from graduating to now, I do see a lot more people, and a lot more people in the industry, trying to make small strides to get towards their goal of creating a more sustainable world because quite frankly, we're not going to be able to make it through if we don't
make these small actionable steps. When I think back when I was in the program, it's just starting to emerge even more. And I think now it's starting to boom. And hopefully it gets to where it needs to be very soon.

In Greens’ excerpt, the chef graduate describes her perspective change in attending the program, analytically likening the challenges to sustainability as tasks to be addressed. Her insights and approach exemplified transformative learning, but also the pragmatic-action subtheme, the potential of the chef subtheme, and the roles subtheme. All of these indications are required for a change agent to take action towards sustainability. Throughout her entire interview, Greens never once stopped to consider if it was her burden to create a more sustainable world. The absence of critical self-reflection could be attributed to her background in traditional culinary education before attending the Wellness & Sustainability Concentration, where chef learners are conditioned not to ask why or ponder critical questions, but instead to comply. There could be some truth to this as the entire chef graduate case group demonstrated the same proclivities to assume making the world more sustainable through culinary practice was their responsibility. This can also be interpreted as evidence of a perspective change, since such a shift would necessitate action change as the application of the new perspective. In doing so, these chefs have demonstrated again, a chef’s get it done, can do attitude, without any reservations.

Surprisingly, TL curricular design was rarely mentioned by the scholar informant group despite the JDKI having such strong potential to provide a change in teaching perspective for its educator participants. Also surprising was an overall low number of disorienting dilemma-confusion codes from all three case groups. These findings could be attributed to a rift between Dewey’s (1938) perspectives on experiential education within the JDKI tenets, as compared to
most transformative learning theories. Dewey’s theory of experience requires an educator’s control over formulating experiences which are educative for learners. In transformative learning theory, transformative experiences occur at such a personal level their occurrence cannot be controlled, only certain conditions can be created that might predispose learners to transformation. Applied to this situation, the JDKI tenets do not explicitly create transformative conditions and therefore, may not have been a primary consideration by the scholar informant group.

Similarly, to uncover instances of disorienting dilemmas, a case study participant must be cognizant of the TL concept and self-reflective of such experiences to recognize and share it during an interview. The scholar informants may simply not be familiar with this educational theory. Supporting this assumption, every indication of TL remained unidentified by the case participants. However, by extrapolating the coding of characteristics of transformative learning and disorienting dilemmas, transformative learning was clearly operational. One such instance came from a workshop participant, Meredith Labneh (a pseudonym), when I asked her on the final day how her experience was at the JDKI:

**Labneh:** It was, I would say, after the class I can tell you that it was confusion. There was some sort of confusion to me. It definitely took me out of my comfort zone but it also went beyond my expectations. I knew who John Dewey was, and what he did for education, especially for early childhood development. But I was very curious and very intrigued about how are they going to connect the kitchen with the theories of practice, what role was the kitchen going to play in this class?

**BJL:** …So what did you discover about that?
Labneh: …I discovered that philosophy is an invitation for slowing down. Which is one of my goals for next year, to slow down and try to observe more and think beyond the obvious.

As Labneh critically examined previously held assumptions and associations, she felt confused and on foreign ground, which is an important early element of the transformative learning process. By connecting things which were not normally connected for her, she underwent a transformative reorientation of her way of seeing things. Her disorientation prompted her to reflect on her practice and make a conscious decision to be more mindful in her teaching approach in the following school year. Since critical self-reflection can reveal systemic connections and prompt a reconsideration of previously unexamined assumptions, this may be an important and necessary step for Labneh to take toward applying a more relational, participative, and sustainable approach to her teaching practice. Appropriately, in her interview, themes of transformative learning, systems thinking, and a vision for sustainability emerged.

When I asked Trubek about whether she thinks cooking fosters a transformative experience related to food, the scholar stated:

Trubek: Yes, I do. I think that the... so when I'm talking about the pedagogy I'm talking about, we develop the pedagogy that we call food agency, so it has in it a lot of the tenants from the John Dewey Kitchen Institute, but it's a little bit more kind of pragmatically based. Also, in sort of teaching a set of skills towards people feeling empowered to act in relation to cooking. And I think that… being in a place where you are experientially learning about technical aspects of organization, and sensory analysis, and culinary skills, and also trying to
think about the higher order understandings of what happens with food, it's a really kind of profound kind of transformative pedagogical experience.

Food agency, as Trubek explained, is when someone is empowered to act in relation to cooking, but she also eluded to a deeper understanding as well. Regarding food agency alone, she inferred qualities such as food literacy, power and ability to source food ingredients, choice in food preparation, and in deciding who gets to help and who gets to eat. Leading amongst these important considerations is the significance of knowing how these decisions effect ourselves and others too. For chefs to act sustainably, they must know and understand how their food agency can create sustainable change.

In data from Trubek, I found more than eight codes when she answered my question. Not only did codes in the transformative learning subtheme get mentioned, so did codes in practical considerations, experiential learning, sensory, traditional culinary (skills), and hand work head work.

**Level II: Cross-theme Analysis**

Laying out the findings from my initial coding revealed many emergent cross connections. Grouping these relationships exposed contradictions and affirmed aspects between codes which I could analyze at a deeper level.

**Emergent Culinary Culture**

Under an emergent culinary culture theme, cross connections produced four subthemes, as follows:

- Food elitism;
- Chef practitioner conditioning;
- Status elevation; and
• Social efficiency[?].

Food elitism came up through interviews with all three groups. Belliveau regarded it with distaste when describing critical food judging and shaming, and she tried to mitigate its emergence in the JDKI workshop between participants. She further questioned the effectiveness of sustainability when applied and messaged though the culinary profession:

Belliveau: From a chef standpoint, if you're working in a restaurant, I'm not so sure that there is a solution to [changing the industrial eating paths] because if you are really thinking about sustainability from a chef perspective, you're probably going to be cooking for the elites…. If I look at what Dan Barber's doing at Stone Barns, have you looked at him?

BJL: Yeah.

Belliveau: I think he's having an influence but again, it's mostly the elites that listen to him. The chef who's going to succeed is the one who can work in environments that are less about ego. I see that happening. There's an amazing chef downtown who's working at the Emergency Food Shelf and he is doing a culinary academy. He starts with about 20 students and he graduates about six. That is because life is really a problem and these are mostly homeless people and they have all kinds of drags on themselves. That guy is making a difference. He's making a huge difference for people.

Belliveau went on to highlight another vision of culinary sustainability in the restaurant trade which worked like a CSA. Her idea was that customers would buy in and commit to prepaying for a number of meals and the restaurant would in turn provide them. This kind of eatery in her description would be more of a community dining house, with an emphasis on healthy,
wholesome foods rather than indulgent special occasion meals. This is where Rickey’s story intersects. In his role as a chef and purchaser for a corporate dining district, he addressed the challenge Belliveau expressed when he spoke about making wholesome, healthy foods from local farms more accessible to his diners at no additional cost. In his interview he described his logic:

Rickey: So now, these are guys who normally couldn't buy the locally sourced heirloom baby carrots that are tri-colored—and to you and me, they're beautiful. But to the local consumer or the average consumer, they're going to be like, "That's way too expensive. I'm not buying that. Because I mean, you want $4 for a bunch of carrots, and I can go buy a bag of them for $2." Because that's how these guys think. They think value versus impact… So I've kind of been put in a position where I can provide these dishes and this food that is saying to these guys, "Hey, by you buying this, it's not going to cost you anything else, but you're still making an impact because you're choosing to eat this food that is not only good for your body, but it's good for ecosystems, good for local economies and jobs because you're essentially keeping people employed by buying my salad bar."

In Rickey’s story, he was able to provide sustainable sourcing and dining without distinguishing his food as aimed at high-status clients. He did however reveal an insider perspective which seemed to be shared by all the chef graduates and Belliveau as well. When the chef referred to him and I appreciating the heirloom tri-colored baby carrots, he made a distinction between what we know as chefs and what others do not know. Being “in-the-know” within chef culinary culture became a common occurrence in all the chef interviews. For them,
this goes beyond the foodyism fanfare of eclectic foods, food movements, and food culture celebrated by diners, and projected by food magazines and food television, but rather into the underbelly of the culinary trade and its associated culture. The idea is, only a chef would understand the language of flavors and aromas; only a chef would understand this cooking process; only a chef knows the cultural conditions where something makes sense. From this group, I heard “you know how it is,” a significant number of times, bringing to the forefront this mark of distinction and difference. Sharing in this chef talk also positioned me as an insider with this group.

This dynamic raises questions as to what the chef’s role should be when moving toward sustainability—trusted expert, elite food artisan aiming to change dominate tastes, or inclusive community partner, leader, and educator who links producers and consumers? For the latter, simplifying the system so that non-chefs understand the linkages and political ecologies of their foodstuffs plays a part, as does understanding and valuing how they are affected by chef choices in food procurement. Either way, for sustainable food to truly be sustainable, it cannot be out of reach from the masses, but rather, inclusive of them. Reversing economies of scale away from the industrial food system to the local food system with economies of demand and honoring local food availability and taste achieves more sustainability than a single boutique farm to table restaurant with high prices can.

Despite Belliveau’s efforts to discourage competition dynamics amongst the workshop participants, a desire to establish “who is a foodie” had emerged which drew similar difference between the participants “in-the-know” and those, like Swiss, who were not. This modernist dynamic in culinary food culture created a contradiction within the JDKI Deweyan tenet regarding democratized education which had to be somehow reconciled. Estragon described
this dynamic in her interview when she explained that Dewey’s democratized education is inclusive of everyone and aims to remove the hurtles of having to prove oneself to be an elite.

**Chef Practitioner Conditioning.** Part of the chef culinary culture is the get it done, can-do attitude which has been conditioned into chefs as part of culinary education and training. All of the chefs in the study (the chef graduates and Belliveau) referenced or enacted this mindset in many of their interview responses. This perspective has many potentially positive traits, such as its compatibility with pragmatic, action-based approaches which have potential to transcend theory to invoke tangible action. Potentially negative traits relate to how it is conditioned into chef learners in modern culinary education and how it robs them of creativity and critical thinking skills outside of their vocation (Deutsch, 2014; Wheelahan, 2015). In traditional culinary education and in the modern culinary industry, chefs are measured based on their ability to perform in meritocratic, high-pressure situations (Harris & Guiffre, 2010a, 2010b, 2015). A “yes chef” attitude followed by the delivery of what was asked is a valuable and marketable quality of a chef learner. Though this steels them to be complying learners within their trade who are more resilient to workplace challenges, it comes at a cost to their agency and criticality.

In their interviews, the chefs demonstrated this pragmatic and action-oriented outlook when mentioning practical steps to sustainability practice. This emerged in multiple interviews, including Trubek’s where she described the steps required to holistically gain a certain level of food agency to achieve higher-order understanding. This ascension toward higher-ordered learning and informed action for change mirrors Sterling’s (2001) hierarchy of change, where simple knowledge of sustainable practices or steps alone only constitutes a first level of learning or change. A second order would require value propositions as part of their decision-
making criteria and a complete understanding of related consequences, and a third would introduce transformative learning potential for shifting normal operating assumptions. This is what Trubek described as a “profound” pedagogical experience.

**Status Elevation.** Each scholar projected a similar vision of the chef’s potential toward sustainability. Trubek and Heldke pointed to an opportunity for a chef to elevate their economic status and legitimize their trade by addressing food access, modeling sustainable practice, and providing sustainable meals for society. A contradiction surfaced here however with the assumption that a chef must elevate their profession, even though valuing class status falls within the trappings of hierarchy structures. Though this perspective takes into account the realities of the world today, for chefs to transcend colonial competitive power and rank constructs to help bring about a more sustainable society, they must forego meritocratic pursuits and instead value relationality and re-inhabitation as outlined in the ten principles for CSE. For educators, they must move beyond status quo value systems to participate in transformative higher education to reorient society toward sustainability values. Belliveau illustrated this when she envisioned a chef would need to first escape the trappings of food elitism to be able to offer real sustainability.

**Social Efficiency[?].** Having already experienced some sustainability education, all of the chef graduates touted without complaint how they were addressing sustainability through their work as chefs—never once questioning if it was their obligation to do so. The assumption that it is their responsibility to correct the ills of an industrialized food system since they operate in it, seems to accept the social-efficiency mindset that chef learners will serve in these roles. Is the assumed burden to fix the food system somehow rooted in the reductionist practice of plugging people into a workforce economy? Is it viewed differently when these people are
supposed agents for change? This dynamic presents some confusion between the propositions for CSE and the assumption that chefs can apply them to their practice.

Part of the resolution has to do with free will and an ethic of responsibility. There are distinctions in transformative learning theory between educating for a more sustainable future and manipulation/coercion (Cranton, 2016). Sterling (2001) offers through his hierarchy of ordered learning principles that transformative sustainability education instills values, ethics, and critical discernment learners can use to apply to any situation. Providing learners gain such critical independence, it would be up to them to apply an ethic of responsibility to their professional practice, whatever they choose to practice. The key point is in their personal agency to do so. In illustrating all the connections between what chefs do and the food system, the principles for CSE provide guidance for sustainable change, but do not mandate it. It is up to individual learners to decide if they will follow this thought system to address sustainability and how they might do so.

In speculating on the results of what such sustainable actions could be, each case group offered a different vision. The scholar informants spoke of improved food access; the workshop participants were much more focused on democratizing education; and chef graduates were much more focused on fixing supply chains, championing a culture of sustainability, and nurturing the sustainable food revolution. The unique perspectives each case group contributed toward a more sustainable future makes sense given their positionality. The scholar informants spoke of social justice and improving food access; workshop participants spoke of democratized education in a new paradigm of teaching and learning; and the chef graduates spoke of championing a culture of sustainable practice in nurturing the sustainable
CULINARY SUSTAINABILITY EDUCATION

food revolution. In all these various visions, a common denominator resounded: the determination that modern paradigm was deficient in all these areas.

**Story 4. Learning a New Stance as an Educator**

The auto-ethnographical stories presented throughout this study serve to triangulate findings from the data sets. In my first story, I recalled an urban farm trip that I took with one of my student groups, which unearthed deep seeded questions about community and food system connections, critical perspectives, and affective sensory input. My second story illustrated my path from culinary outsider to culinary insider as I took my position at JWU. This story illustrates conflicts of allegiance, power, and hierarchy in modern culinary arts culture. My third story, which relates my experience teaching a healthy cooking workshop to low income mothers, demonstrated a personal and seismic shift in my perspective due to a disorienting dilemma. This perspective change reoriented me from an elitist chef perspective toward one of relationality and empathy. All of these experiences and the questions they posed led me to seek answers and ultimately conduct this study. In my final story, I tell of the potential in foodmaking practice, the importance of connectedness, and of critical reflection.

***

*I attended my applied residency at UVM for the three-day JDKI workshop where I also conducted three phases of my case study research.*

*The other participants and I were invited into the classroom, which was connected to what the program materials described as the “kitchenroom.” We sat facing each other around three folding tables pushed together to make one long rectangle. A series of numbered plates, each holding a different herb, was set before us. Without introductions, Dr. Belliveau asked us to see, touch, smell, and taste the herbs. She asked us to take notes on our perceptions, but not*
to write down the herbs’ names. Later, she explained that this seemingly strange request was designed to curb the competition that often arises as participants get caught up in showing off their knowledge by being the first to identify an herb out loud. Belliveau said that allowing that sort of competition establishes power dynamics and hierarchies within the group: those who know, and those who do not. As someone who knows, I took this as a reminder that I would need to downplay my own culinary knowledge to avoid compromising the power dynamics of the workshop and thereby skewing my study.

After completing the introductory herb activity, we discussed mis-en-place—the French-derived culinary and metaphorical concept of organizing and preparing the ingredients for a recipe before executing the dish. Belliveau explained that this approach to cooking was equally applicable to teaching, and even to life. Soon after, we all headed to the kitchen to begin “cooking to learn” (O’Neil, 2015). For the first time that day, I felt apprehensive. I did not want to alienate myself from the other workshop participants by demonstrating professional culinary skills, so I planned to approach the cooking activities unassumingly to try to melt into the background. That did not last long as Belliveau jokingly asked me to avert my eyes as she presented a knife skills demonstration by cutting an onion. By that point, Dr. Heldke had already mentioned that I was a professional chef, so when I met my kitchen teammate, Meredith, after the demo, she half-seriously asked me not to grade her cooking too harshly. Laughing, I assured her I was not there for that, just to enjoy the cooking activity with her. So, we began.

Our first activity was to make grilled cheese sandwiches as a group and to practice cutting up an onion ourselves. Sticking to my plan, I avoided leading and did what I could to support my teammate. This turned out to be an awkward arrangement as she was a little timid
and hesitant herself. Eventually we worked our way through our grilled cheese production while engaging in small introductory conversation. Then, we were each given an onion to dice. I diced mine and wiped up our kitchen station. I noticed Meredith was still working on her onion, struggling a bit. She looked up at me, and our eyes met.

“Can you help me cut it like her?,” Meredith asked, referring to Belliveau’s demonstration.

“Sure,” I answered.

I discreetly walked her through the process again. I showed her how to hold the onion properly on the board, how to grip the knife handle effectively and safely, how to guide the knife along the second bone of her index and middle fingers, how and where to aim while pushing the knife down and forward, then dragging it back. I tried not to draw attention. This was not my class to teach, even though this was a teaching and learning moment for both of us. Meredith diced the onion with good precision after that and we finished our grilled cheese sandwiches. All the students then brought their sandwiches back into the classroom and sat down around the arranged tables once again.

While eating our sandwiches, we were guided by Belliveau and Heldke through an engaged tasting and inquiry discussion. A conversation ensued focusing on the sensory aspects of the lunch, and the process of preparing it within a group. Then Belliveau asked a question:

“Following the path of memory elicited by food, what did this process remind you of?”

One participant likened the experience to feeling like she was letting her partner down when it came to cooking with him. She said that she had even felt apologetic for a moment.

Then Meredith raised her hand. My heart skipped a beat. I suddenly feared that I may have somehow made her feel that way as well. Was I too confident in the kitchen? Did I make
her feel like she was letting me down? Like she was bad at cooking? The feelings reminded me of my early experience as a teacher, when I taught the cooking class for minority low-income mothers at the community kitchen. I had lost sight of my responsibility then. Did I do that again here almost 15 years later on the first day of the workshop?

Belliveau invited Meredith to speak.

“I think working with my partner, Branden [pause], I felt a sense of intimacy.”

I felt frozen in place. That was the last thing I expected her to say. Then she continued.

“Intimacy in problem solving, navigating, sharing. My partner helped me, and I helped him. It was a private moment in the kitchen. We worked together to deal with things.”

An energetic discussion followed, with many other participants describing their own similar group interactions. I felt both relieved and humbled—this time not by embarrassment, but by reflection.

The workshop continued of course, and after spending hours together talking, theorizing, cooking, Belliveau finally had us introduce ourselves.

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There is power and potential in food, cooking, and critical reflection experiences. Dewey (1938) asserted this, and both Heldke (1992a) and Brady (2011) acknowledged this when they investigated recipes for theory making and cooking as inquiry respectively. Brady (2011) stated “…cooking as inquiry recognizes bodies and food as sites of knowledge and engages researchers as researcher-participants in reflective, collaborative study that explores the ways in which the embodied self is performed relationally through foodmaking” (p. 322). Considering my experience cooking with my partner at the John Dewey Kitchen Institute Workshop, this very idea of a relational and visceral experience in foodmaking was evident. It
CULINARY SUSTAINABILITY EDUCATION

seemed to be an exploratory and regenerative process which caused me to reconsider the power of my professional practice and my position within it when I reflected to write this story. As Brady (2011) presaged, this process revealed an “…intimate and emotionally rich narrative” (p. 325) which set the stage for my autographic approach to my dissertation inquiry. This was done for the purpose of authenticity in my study by revealing my process, positionality, experiences, and worldview.

Participating in the workshop provided me with valuable insights and prompted some intriguing questions. The round table sensory discussions were rich and insightful, and shared many perspectives from my fellow participants I had not previously accounted for. My experience with my teammate revealed a more relational and cooperative mode of learning cooking I had never before considered. Applying culinary foodmaking practice to other disciplines was extraordinarily novel as well and caused me to ponder what that could mean for the culinary classes I teach at JWU and the ten propositions for CSE. If the propositions for CSE prove to be valid, could they be transferable to other disciplines and workshop formats?

Summary

In this chapter, I restated my problem of practice and the research questions driving my inquiry. Findings were structured into three primary themes mirroring my proposed theoretical model and the organization of the literature review: Critique of culinary modernism and sustainability challenges; vision for sustainability; and pedagogy and learning. Findings revealed tendencies of codes within three different cases, some congruent and some contradictory. In the critique of culinary modernism and sustainability challenges theme, power and modernism tended to be discussed most, while roles were discussed a moderate amount of times with the exception of the chef graduate case group who showed little response.
CULINARY SUSTAINABILITY EDUCATION

The scholar informant case group, even with a smaller number of interviews than the workshop participant case group, indicated far more times nodes within the critique of culinary modernism and sustainability challenges theme. Qualitatively, conversations within this theme supported all of the critical literature in varying degrees which helped to affirm the identification of shortcomings to sustainability in culinary education. Further, discussions revealed some emergent dynamics as well, such as in the discussions surrounding food elitism, and the prompting for chefs to elevate their profession.

The vision for sustainability case group was the largest theme and it included the most indicators of any of the others. Subthemes including the potential of the chef and pragmatic-action oriented were the most prevalent, while the subtheme encompassing social justice was the least prevalent—though it was the only subtheme within the theme which was indicated by all the respondents. For the scholar informants in particularly, social justice through improved food security prompted rich conversations about a chef’s potential to help others in the food system. Subthemes on relationality and challenging dualism were moderately in the middle. Similarly, response rates in the final theme, pedagogy and learning, also indicated moderate responses from its subthemes Dewey and transformative learning and change. Qualitatively, this theme offered some of the most intriguing and uncomfortable conversations in the study. As I spoke with participants and recalled my own transformative experiences, a certain vulnerability was present which I had to navigate carefully and tactfully around to gain deeper understanding of the experiences being discussed.

Analysis in the next chapter considers these findings to make further connections and ultimately, determinations and recommendations on how to move forward in the pursuit of developing an approach to foster CSE.
Chapter 5. Analysis of Findings, Recommendations & Conclusions

Overview

To address the challenges educators face in developing more sustainable culinary arts programming while also answering the research questions, a potential framework for ten propositions for culinary sustainability education was proposed from the literature review. It was my intention to test the validity of these propositions in their ability to address the research questions. I used a case study analysis to explore these propositions from three different human perspectives: scholar informants who were both theorists and educators; workshop participants who were learners in a sustainability related food and education workshop; and chef graduates who had learned in my pilot culinary sustainability courses.

My research questions were positioned within the larger question of how this paradigm of unsustainability is to be transformed into one of sustainability? Here I formulated questions which dug down to the theory, practice, barriers, and desired outcomes of such a transformation. My first research question asked what constitutes a culinary sustainability education and what principles might guide future programming? In researching the literature, I established ten propositions for CSE which were potential principles to guide the development and operation of CSE programs. These principles moved current systems away from power, positivism, cultural invasion, dualism, and mechanism, toward cooperative and adaptive learning, critically reflective practice, reintegration, relationality, educational sustainability, systems thinking, and sustainable food systems. As I show below with my case study findings and analysis, and bounded by its limitations, these propositions were proven to be valid and largely accurate. I can determine the ten propositions for CSE can now be considered principles.
My second research question was designed to identify how CSE can be imbedded into practice. My question was, how might traditional culinary arts programming be transformed and operationalized into a program plan for culinary education as sustainability? This was in terms of structures, relations, goals, practices, and conditions. As shown in this chapter, in the development of the ten principles for CSE, these considerations were inclusive in the design. Each principle directly addressed shortcomings that prevented sustainability and offered alternatives compatible with transformative sustainability theory. The conceptual constellation that supported the transition to sustainability were based on living systems theory, relationality, justice, equity, and reflexivity, among others.

My final research question was, what desired outcomes and barriers to this transformation is experienced by learners in a higher education setting? In this question I was seeking to explore the potential pedagogical approaches and effects on results for learners completing CSE programs. As the literature informed the ten principles, these theories and concepts provided frameworks to analyze the phenomena observed and described by the case study participants. Instances of transformative learning became apparent in all three cases. Some elements of transformation were recognized by learners and some were not. Barriers were also identified and challenged in the formulation of ten principles for CSE.

This chapter presents key findings from my study themes and offers an analysis relative to the literature reviewed. A discussion surrounding the implications of these conclusions and recommendations, are included as well.

**Key Finding: Propositions to Principles**

The ten propositions for CSE presented as part of my theoretical framework connected well with findings from my case study. Examples are provided in Table 8.
<table>
<thead>
<tr>
<th>Proposition</th>
<th>Theme &amp; Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Beyond master and apprentice…</td>
<td>“…before, it was like, ‘Okay, here’s how to braise a chicken thigh…’ [in the concentration, it was], ‘Okay, where did this chicken come from?’” (Rickey)</td>
</tr>
<tr>
<td>2. Beyond recipe-based pedagogy…</td>
<td>“…the content is the least important thing of what happens in my classroom.” (Raclette)</td>
</tr>
<tr>
<td>3. Beyond universal truths…</td>
<td>“…this is a very, very different experience… the cooking and how all hands-on it is. Most of my work's been incredibly theoretical… So it's kind of cool to practice what you're saying… to see it really working in action.” (Raclette)</td>
</tr>
<tr>
<td>4. Beyond colonial invasion…</td>
<td>“That's why I can't stand what happens with dieticians and nutritionists, like I know better than you. Well no, you don't. Also, this is my palate. Giving up your palate is like giving up your mother. You don't do it.” (Belliveau)</td>
</tr>
<tr>
<td>5. Beyond dualism…</td>
<td>“…going off site was very meaningful because… I don't think that there's any other better way to experience it because we all learn visually… And I think it was really transferable for us that, if they can do it, then we can do it too.” (Greens)</td>
</tr>
<tr>
<td>6. Beyond mechanistic views…</td>
<td>“…the snipping of an herb, you can't do that on your Chromebook… I think it's nice for [learners] to be tech-free for a little bit.” (Swiss)</td>
</tr>
<tr>
<td>7. Beyond unsustainable food systems…</td>
<td>“What's the definition of community food security? That everyone in the community has access to safe, affordable, nutritionally sound and culturally appropriate food at all times of the year…that would be freaking amazing.” (Heldke)</td>
</tr>
<tr>
<td>8. Beyond structures of power and domination…</td>
<td>“…they're really more facilitating the process, they're not shoving ideas down our throat. They're inviting us with their advice to the table.” (Estragon)</td>
</tr>
<tr>
<td>9. Beyond status quo programming…</td>
<td>“I think all those things have to get addressed to think about making... moving the culinary profession to the next level.” (Trubek)</td>
</tr>
<tr>
<td>10. Beyond theory…</td>
<td>“…you're still making an impact because you're choosing to eat this food that is not only good for your body, but it's good for ecosystems, good for local economies and jobs because you're essentially keeping people employed by buying my salad bar.” (Rickey)</td>
</tr>
</tbody>
</table>
Analysis of Theme 1: Critique of Culinary Modernism and Sustainability Challenges

Findings presented in Chapter 4 encompassing the critique of culinary modernism and sustainability challenges theme included subthemes of power, modernism, and roles. Each subtheme was made up of codes which were identified based on the literature review as well as unanticipated emergent indicators which occurred often enough for their own code designation. Many code indications were also connected with other themes, subthemes, and codes across the codebook as well.

Power and Exclusion. Power was the most common challenge to sustainability revealed in this study. Indications from all the case groups relating to power and food, and hierarchy were indicated a moderate amount of times, suggesting that the critique of researchers Esteva and Prakash (1998), Heldke (1992a, 1992b, 1992c), and Woodhouse’s (2015, 2016) with power, class, position, and food are still relevant today and are recognized by not only scholars, but students, and graduates as well. Indications from the various case interviews demonstrated a wide spectrum of these instances, which included power in relation to food access, food literacy, and food elitism, among others. In the case of the workshop participant, Swiss, power and food were a major intimidation factor for her, as a culinary arts outsider’s perspective. Concerns over food elitism have been widely recognized by scholars like Coveney (2006, 2012), Guthman (2003, 2006, 2007, 2014), Julier (2008, 2013), and Hayes-Conroy and Hayes-Conroy (2008, 2016), where each investigated the alienation of others through judgmental food and food practice shaming.

Along with Swiss’s interview, issues with food elitism became a prevalent emergent theme throughout my study. As people like Brown (2005), Hegarty and O’Mahony (2001), Myhrvold, and others have successfully pushed for culinary arts to be elevated over domestic
cooking, this implies that others are pushed down in importance and forced to become culinary outsiders. This exclusionary hierarchy radiates throughout the modern culinary industry and culinary education. In my reflective story of being hired as a new culinary faculty member at JWU, I shared the discomfort of my own transition from culinary outsider to culinary insider. Moreover, in my story of teaching a healthy community cooking class, I demonstrated my own past propensities toward the culinary insider role where I alienated the women in my cooking class by showing off instead of teaching them the skills they needed to elevate themselves. Throughout my participant observation at the JDKI workshop, I witnessed and inadvertently participated in the same dynamics just by being in attendance. As my cooking partner joked with me, asking me not to grade her cooking too harshly, she revealed the insecurities triggered by just carrying the career title of chef. This came up again in an interview with another workshop participant:

**Estragon:** …I need to think about the ways in which [the workshop] is not just about cooking. I think what it is, is about process, and so cooking is the example, exemplar or whatever of the process. I feel very intimidated saying that in front of a professional chef, and I think that it is about process.

Here, Estragon openly revealed feeling intimidated by being asked a question related to the relevance of cooking to her practice by a chef.

The idea that the modern chef’s reputation rests on relations of inequality makes it challenging for them step forward to play the role of sustainability advocate as that would challenge these relations. Belliveau eluded to this when she remarked that only elites listen to chef/sustainability advocate Barber (2014), and that she is fearful that chefs playing a similar positive role will do so through cooking for the elites. Sustainability principles are about equity
and trying to eliminate this hierarchy, so the class that chefs normally cater to maintain these power relations, rather than challenging them.

Two of the principles for CSE, beyond invasion toward decolonization and reinhabitation, and beyond structures of power toward the power of relationality, work to dissolve this kind of micro level hierarchy by removing western ideas of success, competition, power, and difference, to reconcile the culinary insider and culinary outsider duality. If today’s chef is to overcome the colonization of thought that modern education and today’s modern capitalistic society continues to perpetuate, they will have to reject the notion that they must submit themselves to it in order to legitimize their standing in the world (Woodhouse, 2016).

Rejection will not be enough, however. To overcome colonization, a chef learner must help rehabilitate, (re)localize, and renew the food system and its associated cultural knowledge, including culinary practice, in order to regenerate the living organic memory of our connected senses and practices around food (Esteva & Prakash, 1998). Heldke asked in her interview what would happen if we inquired with, through, and as food? Such a concept would strip away enculturated Eurocentric standards and would provide opportunities to develop honest and personal sensibilities toward good tasting food and culinary practice, leaving space for critical thought and creative questioning from within (Lange, 2018b).

Power permeates even the most micro of actions. The micro level hierarchy experienced in culinary arts can be understood as microaggressions—the seemingly insignificant and subtle demeaning slights advertently or inadvertently aimed at people who are members of a certain other group (Gina, 2018; Tori et al., 2009). Such dynamics are significant, as they denigrate one group to uplift the other. Both chef and non-chef food elitists use micro aggressions when they pass judgement on culinary outsiders consciously or
subconsciously through disparaging comments, assumptions, or exclusionary language. This can be as explicit as Petrini’s comment that a food lover who does not advocate for the environment is stupid, or as unintentionally implicit as when Rickey spoke to me about the rainbow carrots in our interview, assuming only he and I could appreciate them. Though Rickey may have had the best of intentions in making these foods more available to his customers, he inadvertently used exclusionary language to reference them in order to share in an insider role with me. The emergence of micro aggressions in this study is a key finding which prompts the inclusion of micro aggression when considering moving beyond structures of power. This principle must also bring attention to the phenomena of micro aggressions so learners can make sense of such encounters and their related impacts (Tori et al., 2009).

Power and gender issues were indicated much less often by the workshop participants and chef graduates. The scholars did indicate gender issues a moderate amount of times however. Due to the limitations of the study, such as the small sample sizes, the scope of the questions I asked, and the fact that even though the majority of the workshop participants and graduates were women and only one was a female chef, I cannot say for certain whether this was a significant finding, or just a statistical irregularity. Qualitative coding is limited to the range of the study and subject to human error (Creswell & Creswell, 2018; Merriam, 2009; Yin, 2009), so it is possible that I could have missed some codes, or indications could be masked by gender socialization. Regardless of these factors, zero indications means it is possible that the code reflected accurately that gender issues were simply more of a recognized priority to the scholar informant case group than the workshop participants and culinary graduates. This is likely due to what Apple (1979; 1982) called the hidden curriculum, where the educational and cultural social environment surrounding learners socializes them through
the implicit norms, values, and beliefs projected around them. Belliveau spoke to this when she described the gendering and politicizing of sustainability values:

**Belliveau:** This pushback to looking at the environment as almost a feminine, not a female, a feminine kind of issue is something that I'm watching on a world stage. This whole idea that somehow if you care about the planet, it's like you're kind of a sissy or something. Real men have coal. Real men eat burgers fried with bacon and cheese and real men do this, like this whole sort of masculinity of what we're doing to the planet I think is in direct opposition to the rise of the feminine. I know that sounds probably insane to you, but I'm watching this happen right now and I think that Trump is the epitome [pause] He is epitomizing [pause] if you look at archetype Zeus, he's epitomizing Zeus and our culture for some reason needs that right now and as a result, the planet feminine is secondary. I'm not sure where that's going.

In Belliveau’s excerpt, she captured the social and political climate of the modern era, where audacious and irrational narratives in society replace and reject calls for rational discourse and responsible policy and action toward the environmental crisis. Her assessment reflects and affirms that of critical theorists Clover (2004; 2013), Merchant (2005), Klein (2014), and O’Sullivan (1999).

For Trubek and Belliveau, discussing critical perspectives in their separate interviews opened up the conversation around gender inequity in the home, and outside of it:

**Trubek:** …I think from there you also got the people who were looking at critiquing issues of gender and so they also would look at food particularly from the point
of view of feminism and sort of wanting to understand why women working [has] always been defined as care work and not given it's fair due.

Belliveau: …there were people who never wanted to cook. The sort of servitude that came with cooking meals for a family, that the second women could get away from it, they ran. You have to work with people who are willing to work with their hands in a kitchen environment. That's the chef.

In the latter excerpt, Belliveau was referencing the historical shift of women leaving traditional family roles to join the workforce. She pointed out that some preferred the freedom away from domestic servitude plaguing their family life. Contrasting this, she inferred those who cook for others need to have a propensity for the kind of laborious work associated with professional culinary practice. There seems to be some inference and acceptance that a chef’s life is one of servitude, which again reflects a social efficiency ideology, and again, there was clearly a distinction drawn separating chefs from non-chefs.

For those non-chefs who saw cooking as servitude, the commercialization of food and rise of convenience products may also have been a welcomed site, but it did not come without consequences. The progress trap of commercialization, reductionism, and commodification of the food system were able to gain a foothold, disconnecting and deskilling people from their food system and their ability to cook food for themselves (Sutton, 2006; Wilson, 2012). Dependency on such convenience foods has intensified in the modern era as more and more families have both parents working. The rise of food illiteracy parallels with the rise of unhealthy convenience foods too, which have been a contributing cause of diet-related health concerns across the United States in recent times (Guthman, 2003, 2009; Sumner, 2013).
Women who become chefs in the foodservice industry have a notable different experience than men. As a cultural norm in culinary arts, “surviving” (Harris and Guffré, 2010a, p. 44) a masculine work environment is often heralded as a rite of passage for female workers clamoring for distinction and position toward the higher ranks of the male-dominated trade. Harris and Guffré (2010a) indicated in their qualitative study of 33 female chefs, that “issues of professional legitimacy” (p. 44) may normalize gender inequity to the point that it is either not recognized, or accepted as a rite of passage. According to Belliveau, this presents another self-reinforcing negative feedback loop however. The scholar speculated that masculine workplace cultures double down as they are threatened by strong women:

**Belliveau:** I think that in this culture, this American culture, it's becoming more and more macho as a result of the rise of strong women.

**Modernism in the Culinary Industry.** Modernism was another of the primary three subthemes which emerged in this category. This subtheme encapsulated topics including globalization and capitalism, positivism and dualism, food waste, and factory Taylorism because they each have common roots in either being a contributing cause to modernism, or a product of it. As presented in Chapter 2, the separation between the mind and the body is foundational in positivist and dualist views as well as in scientific management practices like Taylorism (Johnson, 2000; O’Neil, 2015). Such detachments have paved the way for the globalization and capitalization of the modern world, where symptoms, such as food waste, illustrate a gluttony for excess in times of constrained resources (Gordillo, 2016, 2017; Guthman, 2006; 2009; Robbins, 2012; Sumner, 2013).

Case groups in the study indicated the modernism subtheme in many ways. Some of these indications were easy to code, such as in the example of food waste—a common topic
brought up by the chef graduates and scholar informants (of which all are considered food scholars), though not by workshop participants (who were educators of varying subjects unrelated to food). As a point of discussion, Trubek spoke of the skill chefs have in being able to utilize product which could otherwise go to waste. Intersecting with that, was Rickey’s practice:

**Trubek:** …obviously like a really good chef could buy tons of product that somebody else would feel like they couldn't figure out what to do with. And so it wouldn't be wasted because you'd be like "No, I can figure out what to do with all that extra kale. You can send that to me. I'll do something with it." And you don't have to just throw it away.

**Rickey:** It's really cool because not only are we sourcing local, but we're sourcing, we call it perfectly delicious… We purposely buy vegetables that if they go to a grocery store, as you know, if it's got a dent in it, or if it's a pepper that's kind of twisted, it goes in the garbage can. Whereas… we're like, "Hey, we're just going to chop it up anyway. We'll buy it." So, we're taking those vegetables in those items that normally would be just thrown away because as you know, there's so much waste at grocery stores, and I think it's what? Is it still 60% of the food source in the country goes to waste?

Other topics on the modern culinary industry were as diverse as navigating a capitalized and globalized food system, dealing with the dichotomy of mechanized labor versus critical thought, and the effects of positivist and dualist mindsets on society, education and the food system itself. Wheelahan (2015), Frisk and Larson (2011), and Sterling (2001, 2010a) each addressed these challenges in their research where they confronted the dualist nature of
modernism in order to foster more critical and participative learners and societies. In Trubek’s interview, she cited these kinds of criticisms to describe how people react to an ever more globalized food system, feeling separated and unable to trace the origins of their food, and how it affects their lives. Later, she openly pondered if the organizational hierarchy paired with the birth of the globalization is still necessary or relevant in restaurants today:

**Trubek:** Well, I think of it more as like a business model and the organizational model of restaurants. That it’s been based so much on this very kind of hierarchical [pause] it's the hierarchical nature of it. That somehow that's how it's gonna work. That we all have to have the brigade system and it all has to be that somebody listens to somebody else, and that's how you create maximum efficiency. And I think it's just one of these sort of conceptual questions. Well maybe at a time, especially in a time when factory work was sort of the primary work that many people were doing, so it’s been based on the model, but now there's so many other forms of organization of work. So should the organization of kitchen... there's some demands that make it have to be very pressure intensive at certain moments, but in other moments does it really need to be run in that such a hierarchical kind of factory model?

Globalization affected more than just restaurants though. It applied dualist, reductionist, and capitalist rationalism to separate not only mind from bodies, but people from their food system as well.

In the story of when I took my students to City Farm, I had noticed some behavior which had confused and intrigued me. I asked why the students were so awed by the urban farm and profoundly moved by the community struggles related to food security, literacy,
sovereignty, and justice. What was it about their sensory activity of seeing, smelling, and tasting plants that was so provoking for them? Informed by the literature, what occurred was reuniting people with their own senses, their own communities, and their own communities of food. The separation of mind and body so prevalent in the modern age and this separation extends to human and nature, and further, to human and food system. Most of the students had never been to an urban farm, or any farm. They never knew the origins of their food, or ever pondered what difference it made to their chef work or community. Chef graduate, Willow, described what his student experience on the farm meant for him in his interview:

**Willow:** …I think some of the biggest moments were, like I said earlier, getting out and seeing, just hearing these people's stories on what they do to the importance of your local farming, your CSA, getting involved with their community. I think that kind of, wow… not realizing how much work's involved in getting this done.

**BJL:** Did you find those interactions to be meaningful?

**Willow:** Yes.

**BJL:** How?

**Willow:** It made me second guess on, like I said, what I do with my life… That there are still small farms out there and that people's lives are riding on the success of these small farms, these mom-and-pop places that have to keep up with your… big name companies. They have to keep up with them and that you're helping support what they're doing.
For Willow, the other chef graduates, and the students in my first story, seeing where and how food was grown profiled how we commonly objectify things (food) and give them context, meaning, importance, and power.

Traditional culinary arts education teaches learners nothing of living food, nothing of relational living systems, and nothing of living food communities. The power to regenerate people, their community, and the chefs themselves illustrated how food can be a connector and agent of regeneration and health.

Further, the food on that day, growing at that farm, also had another power: the power of reunification of the mind and body. Sensory experiences as a skill guide judgement, trigger memory, and transcend the Cartesian notions of mind and body separation (Sutton, 2006, 2010). This occurred for these students as they viscerally looked, smelled, felt, tasted, and considered foods at the urban farm juxtaposed to their experienced memory of cooking food. Their recollection of flavors informed their projections of new ingredient combinations with foods growing in the garden. This practice of applying judgment to sensorial stimuli guided by memory unifies external bodily inputs with internal mental processing to demonstrate one cannot live without the other because they are both the same.

**Roles.** As a critique of culinary modernism and a challenge for implementing sustainability, roles were indicated less often with fewer facets identified by respondents most likely due to a lack of critical consideration.

Notably, the chef graduates did not have much to say about the role of the chef while they were literally living the role of a chef in their chosen career. The lack of code indications could be attributed to what social efficiency cognitive psychologists’ assert is conditioning and reinforcement in education and training (Schiro, 2008). This vocational socialization process
is similar to what Woodhouse (2015, 2016) and Deutsch (2014) both described as a kind of indoctrination, or colonization of the mind. Such phenomena may inhibit critical reflexivity (Deutsch, 2014; Wals et al., 2017) and make it more challenging for chefs to evaluate or challenge their role in society. This should have been the role of their education, however.

This conclusion can be further evidenced by the lack of recognition of gender issues amongst the chef graduate group. Ironically, this is what Harris and Giuffre (2010a) describe as the professional kitchen culture’s die-hard work ethic, which may also be the driving force behind the chef graduates accepting unquestioned the responsibility of addressing sustainability in their practice.

Social efficiency was mentioned the most by the scholar informants, with only light responses from the other case groups. These results are likely due to the scholars’ familiarity with critical postmodernist thought, of which only Heldke and Trubek were known to be aligned. Belliveau’s work is in pragmatist philosophy and therefore less inclusive of critical theory, however she still expressed concern at times over critical food shaming, food elitism, and judging. Her association with critical theory seems to be limited to the critique of power dynamics. Her actions throughout the workshop were consistent with this, such as when she removed the competitive part of herb naming in her sensory activity. Heldke and Trubek supported the critique of social efficiency as they both addressed the stigma of chefs being of lower working labor class and asked how they (chefs) can elevate their trade. This perspective, shared by non-chefs goes a long way to corroborate literature underpinning the ten propositions for CSE from Schiro (2008), Deutche (2014), and Woodhouse (2015, 2016), that modern culinary arts is considered a working class vocation, where learners are trained more than
CULINARY SUSTAINABILITY EDUCATION

educated, all for the purpose of drumming up economic revenue and services. To address this, chef programs should be educational, not vocational in offering theory and practice.

**Theme Summary.** Applying a critical postmodernist lens enabled me to evaluate culinary education and the culinary industry to uncover instances of unsustainability within. Data from the findings in my study support the ten propositions for CSE which were developed from the literature. A mapping of the subthemes within the critique of culinary modernism and sustainability challenges theme to the ten principles for CSE are presented in Table 9.

*Table 9. Mapping of Subthemes in Critique with Ten Principles for CSE*

<table>
<thead>
<tr>
<th>Principle</th>
<th>Power</th>
<th>Modernism</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Beyond master and apprentice…</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Beyond recipe-based pedagogy…</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>3. Beyond universal truths…</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>4. Beyond invasion…</td>
<td>X</td>
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<tr>
<td>5. Beyond dualism…</td>
<td>X</td>
<td>X</td>
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<td>6. Beyond mechanistic views…</td>
<td>X</td>
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<td>7. Beyond unsustainable food systems…</td>
<td>X</td>
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<tr>
<td>8. Beyond structures of power…</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>9. Beyond status quo…</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>10. Beyond theory…</td>
<td>X</td>
<td>X</td>
<td></td>
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</tbody>
</table>

Table 9 shows strong alignment of the CSEs with the critique subthemes as supported by case study responses to interview questions. Gender issues, whether a significant outlier in my case study or not, are addressed universally by the proposition: beyond structures of power toward the power of relationality. This proposition addresses all aspects of power structures indicated in the subtheme of power, inclusive of gender issues.

**Analysis of Theme 2: Vision for Sustainability**

Findings presented in Chapter 4 related to the theme of a vision for sustainability suggested it was the most indicated theme of the three by a margin of significance. It included subthemes:
potential of the chef, pragmatic-action oriented, relational, and challenging dualism. As is the case with all three themes, each subtheme was made up of codes which were identified based on the literature review as well as emergent indicators which occurred often.

**Potential of the Chef.** The potential of the chef subtheme had more indications than the entire critique of culinary modernism and sustainability challenges theme, and was the most widely cited in the vision for sustainability theme. It consisted of concepts including the potential of food, both growing it and cooking it, as well as general sustainability practices, and leadership qualities including advocacy and teaching. Potential impact with food was the most indicated of the codes, confirming scholarship presented by from Edwards (2005, 2010), Guthman (2006, 2007, 2008a, 2008b, 2014), Sumner (2008, 2013a, 2013b, 2013c, 2015), and others on sustainability and power in food, eating, the food system, and the Food Revolution. Hawken (2007) and Capra (2002) spoke of this when they proposed grassroots movements are localizing globalized markets and food systems. Entangled food is untangled when it is localized, removing the mystery and ties to unknown and unsustainable processes. Belliveau described what a chef’s contribution to the food system could look like:

**Belliveau:** I mean the French do it all the time, but it would become more of a meeting place. It would something very social. You could depend on getting a good meal there and it would be inexpensive. You wouldn't be using really expensive ingredients either. It would not be destination, it would not be fancy, it would be good crusty bread, lentil salad, piece of meat, potatoes. Something like where it's inexpensive but delicious because you see, the thing about the chef is that they have a skillset that they need to use.
Ignoring the relative irony of suggesting the French (the Italian Slow Food movement may have been a better example), whose elitist cuisine and colonist influence have caused much of the strife in the modern culinary age, Belliveau is also modeling part of the solution. She brings up the great potential chefs have at working directly for the community to produce humble and approachable food unburdened my competition or judgement. Rickey does this to some extent with his institutional foodservice company, sourcing from the local community, where he produces food for hospitals, schools, and workplace cafeterias. By sourcing such large amounts of seasonal products locally, he not only provides fresher and shorter-distance sourced foods, he helps sure up demand for local farmer supply lines and provide stability for farmers. This builds not only resiliency in the food systems where Rickey operates, it also affords them the opportunity to regenerate from the damages inflicted by the industrial food complex.

Indicated codes related to advocacy and potential of sustainable practice connect well with Stephens et al. (2008), who believed higher education was a premier place to instill such values and create potential change agents. Rickey’s interview illustrated what this can look like. As a chef in position to shape thousands of diets daily, he effects economies through his purchasing choices, and supports small farmers with his sustainable intentionality—a change agent in action. Trubek (2008) foretold of this potential when she posited chefs have the power to shape cuisine in America. She reaffirmed it in her interview when she spoke of chefs in restaurants offering knowledge and guidance to society for sustainable practice in food sourcing, preparation, and management.

It is not all about the chef though. Enabling the chef are the important relationships they have with their restaurant team, their community of growers and harvesters, and their
CULINARY SUSTAINABILITY EDUCATION

community of supporting customers. Even a non-chef recognizes the chef’s relational dependency:

**Estragon:** And interestingly, when people think about food, like in a restaurant they probably sometimes only think about the chef, but how many people do they not see behind the scenes?… And I don't know if it's like that when you're a chef, if what people see is the food, what people are resonating with is the food, and you've facilitated it, you've orchestrated it, but it's not about you anymore, it's about this other thing, which they are experiencing for themselves and that's democratic.

Estragon drew attention to the team of people who work behind the scenes to help the chef deliver meal experiences at restaurants. She also alluded to the sensory experience through dining which has the potential to connect local eaters with their food community. Similar to Heldke’s vision, such diners are experiencing not only local flavors, but they are doing it in the context of supporting and celebrating their local growers and harvesters through the enjoyment of a meal. This is at the heart of the farm to table movement. Eating seafood harvested from local waters, vegetables grown by local farmers, all while knowing you are supporting your community, as an experience can in itself be transformative as it changes who we are, allows us to belong, and it empowers us to participate and to negotiate meaning.

**Pragmatic-Action Oriented.** The pragmatic-action oriented subtheme garnered a lot of attention by all the case groups. This could be anticipated to some point since two of the cases occurred at a workshop themed around John Dewey, the pragmatic philosopher. Pragmatism philosophies believe truth in a proposition or theory can be evidenced based on its practical outcome. All the workshop participants explained in their interviews their
anticipation in seeing the results of the JDKI tenets and teachings from the foodmaking workshop applied to their own practice. The chef graduates also applied this philosophy to validate their efforts at localizing food systems. As a case in point, Greens demonstrated how important and validating it was to her to see firsthand how sustainability and community in the food system worked:

**Greens:** Like I said, I definitely think going off site was very meaningful because what's a better way? We saw people that were doing it, living it, experiencing it, and we got to taste their experiences on their farms and their areas and bring it back into our classroom. I remember also the [farmer], LeeAnn came in and we didn't go to her establishment, but she came into [our class] and then we used her [food products] for our chef's table. So really just full circle. Like I said, the sense of community, but I don't think that there's any other better way to experience it because we all learn visually, being deaf some way or another. So, going over there to see their practices and how they're implementing it right on the spot at their farms was great. And I think it was really transferable for us that, if they can do it, then we can do it too.

Many interviewees similarly projected visions of action and tangibility of learning by witnessing and then doing. In Raclette’s case, as a math teacher, she could not wait to practically apply what she was learning at the JDKI workshop to her class. Regarding her class, she also spoke about her students needing to apply theoretical tools to solve practical problems. Culinary education is no different. This adds to the contention then that chef training should expand beyond traditional notions of vocational training into broader education.
In culinary education and the culinary profession, chefs make decisions about what menus to write, what products to feature, what people to feed, how to operate their enterprise, and interact with their employees and community (Baldwin, et al, 2011; Barber, 2014; Filimonau et al., 2017; Trubek, 2008). This has major ramifications throughout the food system and human communities, offering opportunities for chefs to facilitate transformation by favoring more sustainable menus and products, and by providing better access to local, sustainable foods. Within the foodservice industry, this opportunity extends into operating their businesses and treating their restaurant families (employees) with respect, equity, and fairness. Chefs also decide messaging and values to advocate for in their communities, and in the case of culinary education teachers, what lessons to plan and information to teach. This provides opportunities for chefs to lead the sustainability movement in both application and principle. The immediate results of such powerful transformative change, when grounded in sustainability, can include supporting and advocating for local and regional food systems, community businesses, environmental health, and socio-economic food justice (Edwards, 2010; Sumner, 2012). This would be a tangible result of a relational approach. Both Rickey and Trubek brought these opportunities and potential ramifications up on their interviews, as did Heldke when discussing a chef she met who was trying to just that:

**Heldke:** So she was trying to develop a culinary education model that said, what does it look like to be aware and conscious and attentive to those things in ways that diners would also actually appreciate, to know that you're walking into a restaurant that's delicious and that you feel like your health is being supported? Rather than oh, let's go splurge, right?
Here, Heldke’s associate envisioned teaching chefs how to support health in a relational sense. She also began to contrast the differences between restaurant modalities and diner intents. She went on:

**Heldke:** There's the: I need some calories and so I'm going to go to a calorie distributor and I'm going to drive through the drive through and I'm going to get some calories and I'm going to be able to fuel my tank, or then there's the, it's my birthday, let's go splash out. When we think about what restaurants are, it feels like they almost go to one of those two extremes. They're an invitation to do whatever the hell you want or they're, "Oh, I just need some food." So I think about how every time I go into a restaurant, I'm having this kind of, and maybe this is about being a woman in this day and age, but I'm having that battle over, "will I have dessert?" Or, "do I dare have this?"

Heldke illustrated two extremes of dining, that of mechanistic eating, like in grabbing fast food on the go or something for its convenience more than for its quality. This is likely often experienced during work weeks throughout America; between meetings, on the way to work shifts, or absently while working through lunch at a work desk—what Esteva & Prakash (2014) call industrial eating. The other extreme is special occasion celebrations, such as in birthdays or graduation parties. In institutional dining like Rickey’s however, there is a middle ground, which includes the kind of everyday eating workplace cafeterias provide, such as in institutions like hospitals, retirement homes, school cafeterias, etc. The priorities of chefs at these different venues can be drastically different. Heldke also divulged some of the social pressures and internal struggles which play out for those deciding between these venues. This pairs well with critical scholarship from Guthman (2007), Julier (2004, 2008, 2013), and Coveney (2006)
among others. Heldke summarized these thoughts with the proposition of what she sees relational dining could encompass.

**Heldke:** So it's billed as this kind of virtue versus vice kind of battle. What would it feel like to go into a restaurant, and we've all gone into some of those restaurants… and feel like the activity of eating is an activity of supporting the community where community equals the servers and also the earthworms? I mean, that sounds ridiculous, I know.

Heldke laid out how chefs can provide relational community dining while weighing out some of the elements which must be considered in her examples. Mechanistic dining is at odds with *comida* and shows little value to the diner’s long term mental or physical health. While one connecting affective senses with memories and experiences around food, the other disconnects, separates, and alienates the sensorial experience, the people experience, and any connection with the food system. The dualist practice creates industrial eaters who do not know or care where their food comes from (Esteva & Prakash, 2014).

Leadership opportunities in culinary education and culinary arts such as these which promote sustainability must be pursued. If food is power, then those wielding it can produce powerful results (Curren & Metzger, 2017; McMichael, 2000; Sumner, 2012). Voting with their consumer dollar and taking steps toward sustainability illustrates the chef’s practical ability to take action and make an immediate and lasting impact in the endeavor to secure a more sustainable future.

Such power must be directed with proper ethics. To advocate for responsible sourcing, conscientious management, and providing support for their community, a chef must have a foundational grounding in ethics, critical thinking, and a strong understanding of sustainability.
values. As evidenced by common industry practice, these skillsets and value systems are lacking in modern culinary education. At the start, critical thinking skills are necessary to decide for oneself if they value sustainability. All the chef graduates seemed to have these skills, and all of them accepted the responsibility of advocacy without hesitation.

In addressing dynamics of responsibility, Curren and Metzger (2017), Hawken (2017), and Orr (2004, 2016) asserted it is everyone’s responsibility to participate in creating a sustainable present and future so humankind and nonhuman kind can endure on planet Earth. Orr (2004) warned there can be no debate when the stakes are so high “…without opening the world to demons” (p. 137) that threaten our existence. Sterling (2001) asserted value and judgement propositions in his second order of learning: education for sustainability, where he left it up to the informed learner to decide whether or not to take action toward sustainability (2010a). The principles for CSE are inclusive of these sentiments, and inclusive of the skillsets required for chef learners to think critically, relationally, adaptively, and with value ethics, to solve problems of sustainability now and into the future.

**Relational.** In the relational subtheme of the vision for sustainability theme, codes participative, systems thinking-connections, and adaptive learning all proved relevant to the three case groups as many interviewees looked at participative and adaptive approaches to address potential problems. Even within my own group experience, my teammate recognized our shared participative relationality through the foodmaking and problem-solving process. Such interconnectedness viewed through the lens of living systems thinking has been championed by Bateson (2002), Capra (2002), Capra and Luisi (2014), and Spretnak (2011) among others, who contended all aspects of life are connected and relational; that nothing exists in a vacuum.
The experience with my teammate also drew attention to the importance of critical reflexivity in decolonizing the mind. As I was educated and encultured into the culinary arts industry, I was conditioned to be competitive, egotistical, self-centered, and power-driven. This was showcased in my humbling story of teaching my first cooking class. Then, I did not know how to self-reflect critically. It took a transformative experience to show me how. For culinary learners, this skill is essential to dismantling socialized ethnocentric modernist tendencies in order to move toward more relational ways of being—receptive to ecological concepts like livings systems thinking and sustainability.

Broader results from my case study analysis attested to this assertion as every code indicated within the various themes and subthemes crossed and were dependent on each other. For example, in Laurel’s interview where she described experiential learning from the perspective of Dewey’s democratized education, including experiential education, participative, problem solving, hand work head work, systems thinking-connections, and critical reflection, these codes intersected and were entangled with theory, process, experience, and reflection. They were also manifested as learning experiences in the classroom. Further, when Greens spoke of her learning process in her sustainability classes, she reflected on the connections her experiences at the farms had with her return to the classroom. She described it as going “full circle,” while workshop participant, Raclette, described critical thinking skills being present in everything.

**Challenging Dualism.** Challenging dualism was noted as much as the subtheme of power in the critique of culinary modernism and sustainability challenges theme. While the scholar informant case group focused more on the sensory input to challenge dualism in their interviews, the workshop participants indicated hand work head work more often. Many
theorists investigate sensorial and visceral experience, where some (including Trubek and Belliveau themselves) seem to assert little distinction between the two codes anyway (Hernandez & Sutton, 2003; O’Neil, 2015; Trubek & Belliveau, 2009). The disparity I uncovered in the coding may be in part due to each group’s role at the JDKI. The scholar informants were planning and projecting lesson plans and experiences while the workshop participants were actually doing them; practicing head work and hand work in the workshop itself. Bridging the gap between the two case groups while stitching the challenging dualism and relational concepts together, O’Neil (2015) asserted a relational sensory approach in food making which emphasized affective learning over that of reflective learning. Her theory is also grounded partly in living systems theory, an ecological concept Merchant (2005), Bateson (2002), Spretnak (2001), and Sterling (2001, 2010a) considered essential to challenging dualism by reconnecting the mind with the body, and humans with their natural ecosystems. The principles for CSE also address living systems theory as (re)membering the interconnectedness of the food system community; to leverage the potential of relationality over potential of power; and to move away from mechanistic dichotomies. In the case of Rickey’s visceral memory of the cow licking his ear, he to this day recalls a transformative sensory rich experience which he associates with passion and dedication instilled by farmers in their work and their relations with animals and plants. The memory still compels him to honor their ideals and labors. As encompassed in the CSE proposition: beyond theory toward tangibility and action, this mental association transcends Rickey’s personal experience to guide his actions and supply chain (inter)actions with his farmers.

**Social Justice.** Social justice was the final and least mentioned subtheme within a vision for sustainability, though it still had more indicators than others. This was due to strong
CULINARY SUSTAINABILITY EDUCATION

mentions by the scholar informant case group, who often cited social justice as a primary goal of democratized education and a just food system. Combined with the chef graduates and some workshop participants, the case groups indicated food access as an important component of social justice as well. One example of this included Swiss’s description of her K-12 student’s economic status as measured by their reduced lunch qualifications. Here she described “food scarcity” in their lives, where there was a lack of access to wholesome or healthy foods, and instead, white carbs were “filling their bellies.” She summarized, “our kids aren’t all equal,” and facetiously declared, “so [pause] democracy.” For the scholar-informants, this is where the sustainable chef has an opportunity to make a difference to help ensure “community food security” as Heldke remarked. Similar arguments have been made by Guthman (2008a, 2014), McMichael (2000), and Sumner (2012), who studied access to healthy, safe, and affordable food, and the forces which inhibit it.

Supporting others was the other code in this subtheme. It received only minor indications from all three case groups likely due to the limitations of the study questions and my interpretation of the code. For the former, my interview questions were not explicitly seeking this out as this was an emergent code. For the latter, I interpreted the code narrowly, as only when an interviewee specifically mentioned supporting others, such as when Belliveau, Rickey, and Greens, for instance, mentioned supporting local farmers. I did not interpret the code broadly to include supporting diners, students, or others in the global community. Despite this limitation to my study, this emergent code draws attention to the importance support from groups that share the same norms is in order to institute this kind of change.

**Theme Summary.** In considering the ten principles for CSE, the vision for sustainability theme plays a significant role in projecting a vision for change. Every proposition
is precluded with the word “beyond” to denote a destination away from the shortcomings to sustainability as diagnosed in the critique of culinary arts. A mapping of the subthemes within the vision for sustainability theme illustrates the strength of the ten principles for CSE as presented in Table 10.

Table 10. Mapping of Subthemes in Vision with Ten Principles for CSE

<table>
<thead>
<tr>
<th>Principle</th>
<th>PC</th>
<th>PAO</th>
<th>R</th>
<th>CD</th>
<th>SJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Toward cooperative learning</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Toward critical thinking and adaptive learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. Toward critical reflexivity and reflective practice</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. Toward decolonization and rehabilitation</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5. Toward educational sustainability</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6. Toward a systems perspective</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7. Toward sustainable food systems</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>8. Toward the power of relationality</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. Toward transformative higher education</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10. Toward tangibility and action</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Legend: PC = Potential of the Chef; PAO = Pragmatic Action-Oriented; R = Relational; CD = Challenging Dualism; SJ = Social Justice.

The potential of the chef in helping foster a more sustainable future is captured in all ten principles. This demonstrates promise for a chef who acts as a change agent for sustainability. Pragmatism connected less often, but still was present in more than half the CSEs where it is paramount to making the vision and theories informing a more sustainable future a reality. Relational approaches which consider systems thinking as well as participative and adaptive learning as presaged by Capra (2002; see also Capra & Luisi, 2014) and Sterling (2001; 2010a) mapped universally to all the CSEs. This result signifies the importance of working within the ecological boundaries of the Earth, and with others of various differences,
including by gender, race, and class, in order to face emergent challenges ahead which cannot be anticipated. Many of the CSEs challenge dualist worldviews and address issues in social justice just by challenging power and modernism. As a case in point, the CSE proposition: beyond invasion toward decolonization and rehabilitation, emphasizes removing westernized dualist and positivist influences in not just culinary practice (hand work), but also in the mind (head work). Changing habits and minds toward more inclusive and relational approaches not only reunifies mind and body, it also sheds inequity and power dynamics (Heldke 1992a, 1992b, 1992c; O’Neil, 2017b; O’Sullivan, 1999).

**Analysis of Theme 3: Pedagogy & Learning**

Findings in the pedagogy and learning theme related both to Dewey and transformative learning and change. As with all the previous themes in the case study analysis, connections across all the themes, subthemes, and codes emerged from the case study interviews.

**Dewey.** Codes were themed around the tenets of John Dewey. Case groups both at the JDKI and in the graduate chef case group all supported precepts that experiential learning should be of intentional design and be acted upon by offering learning in a democratic way. Scholar informant Belliveau ascribed to this in her interview—which can be expected as she is the workshop organizer, but she was also backed up by workshop participant interviews like those from Laurel, Estragon, and Raclette who cited and envisioned applying the Deweyan concepts to their teaching practice. They all speculated to varying degrees about how they would do this, finding common themes between the JDKI tenets and the workshop’s foodmaking experience. For Swiss however, when I asked her if the workshop provided and changed perspectives, she needed a little more time to reflect:
Swiss: It's a short timeframe, but I do think that I'll look back at the tenets and I really want to try to absorb them. Personally, there was a lot of dialogue around them and a lot of people who had a lot of ideas and words. I would just like to digest on my own. One of the things people always say is "learning by doing" or, I had a principal who would say, "kids don't learn on their butts." I think it's important to go through and digest and take out what I'm going to be able to bring back, in September. Kind of refreshed, brings a [new] perspective.

Interestingly, the entire chef graduate case group supported the concepts without any knowledge of John Dewey or the JDKI tenets. In the interviews, all three credited the offsite experiences as being key to their understanding and transformation toward sustainability. Further, Greens cheered the intentionality and experiential design of the program, the guest speakers and field trip hosts, and how rewarding it was to work with like-minded classmates on class projects revolving around sustainability. Dewey (1938) emphasized all these concepts, while Belliveau (2007) and Heldke (1992a, 1992b) applied them to their modern-day classroom, and in turn the learners planned to incorporate them.

Transformative Learning & Change. The transformative learning and change subtheme included three kinds of codes: one representing transformative learning curricular design; one representing the recognition of a perspective change; and two representing different ways transformative learning can be triggered as indicated by the literature (Cranton, 2002, 2016; Lange, 2004, 2012, 2013, 2018). Surprisingly, every interview contained elements of transformative learning, many of which were still developing beyond the scope of the study. Transformative learning is a process of change, and for participants at the JDKI, it may not have been long enough to understand the change that potentially may take place after the
experience. Limitations in the size of the study, specific research questions asked, and the length of the study, prohibited deeper analysis into the various transformative learning indicators. Workshop participants could only reflect on their present experience at the JDKI while projecting their expectations of future outcomes.

Regardless, transformative learning is never a done state. It is ongoing a process of change. Moving toward being sustainability, through the process of (be)coming sustainability (O’Neil, 2015; 2017). Though being is often conceptualized as a static state, or goal, O’Neil (2015; 2017) considered it more like (be)coming to denote the ongoing process of transformative movement in motion. This is compatible with Sterling’s (2001) as sustainability, and it was evident in the different stages of transformative learning each case group manifested. Early in their process, the need for further reflection was explicitly mentioned in Swiss’s interview, and it came up later again in Labneh’s. This would be one possibility for future research, to examine long-term outcomes of the JDKI.

The chef graduates, conversely, were key to offering richer accounts of transformative learning experiences as compared to other the workshop participant group because they were farther along in the process. Whenever a perspective change was indicated, it appeared tied to transformation in some way or another. For Willow, it was visiting the farms and meeting the growers; for Rickey it was a cow licking his ear; for Greens, it was the full circle experience. That experience was a combination of experiential cooking labs and an academic class revolving around topics on culinary sustainability. Students in the academic class were primed with a critical view of sustainability within the existing food system and in modern culinary practice, where they debated on hot-button sustainability issues, collaborated on sustainable food systems projects, attended off-site farm and service learning expeditions, cooked together
in challenging field kitchens, and evaluated industry standard versus locally produced foods in side by side sensory comparisons. In the labs, the students cooked the local foods they helped pick, planned and executed high-end dinners for the farmers whose fields they helped plow, and whose foods they helped harvest. Critical, experiential, sensorial, and relational pedagogy, combined with the transformative learning process, were intended pedagogical approaches the chef graduates experienced in this program.

For some in the study, a transformative learning process was exhibited at the disorientation stage when their previous unexamined assumptions came into question. For instance, Labneh expressed confusion when reconciling her previously held assumptions about John Dewey’s teachings. Upon reflection, she determined that she needed to spend more time observing and analyzing in her practice in order to think about her approach to teaching on a deeper level. Her confusion prompted internal questions at how things are connected which motivated her to make new connections with things not normally associated for her between not only teaching, but a new way of understanding teaching, her role in it, and her students’. Her retelling of her experience supports transformative learning theory developed by Cranton (2002, 2016) and Mezirow (2012), while reaffirming the importance of curricular design which can safely foster such experiences.

Transformative learning cannot be taught, but conditions can be created or fostered which are conducive to it which are arranged with careful intentional design and consideration. This is where Dewey’s emphasis on the importance of the teaching being a facilitator of meaningful experiences intersects. Such conditions have to be carefully considered in order to provide rich experiences that learners can reflect upon. They must also have a safe context in which someone can examine their core assumptions through reflection (Lange, 2009). Safety
or what Lange (2009) called a learning sanctuary, is a place where there is little judgement and existing norms are suspended during the exploration process. Lange described three key elements:

…a paradoxical relationship between a deliberative pedagogy while holding the space open for often unseen transformative processes to occur; providing new relational experiences with both the social and natural worlds that can prefigure new ways of being, not just thinking; and creating a safe space for committed peer relationships that allows participants to ask deep internal questions and probe broader societal realities (p. 194).

The combining of rich experiences with well thought out safe environments with space enough for growth and discovery, are all key aspects facilitators of culinary pedagogy must consider.

Indications of transformative learning crossing into other areas of this study is consistent with scholarship informing the phenomena. Research by Lange (2009, 2012, 2013, 2018), Sterling (2001), O’Sullivan (19999), and others match the findings revealing a web of convergence points between transformative learning and its potential to disrupt themes of power, modernism, and role reductionism. Each of the scholar informants in my study spoke of this as well, when they called for transformation in the way we treat and think about food and calling for people to foster a more just food system.

The strongest crossover with transformative learning in my findings is from the vision of sustainability theme. Here, transformative learning intersected with the potential of the chef and food the most, supporting the claim that CSE has the potential to shift culinary arts and broader society toward transformative sustainability. Both the scholar informant case group and the chef graduate case group discussed the opportunity, potential, and promise of chefs
promoting sustainable practice and culture across the foodservice industry and beyond into society, which were newer values that had emerged from their process of critique.

The pragmatic and action oriented themes, practical considerations, relational, living systems theory, and adaptability themes all intersected heavily with transformative learning as well. These compatibilities were presaged by Lange (2012) who looked toward sustainability concepts of living systems as inspiration for reorienting transformative learning from modernist perspectives toward more holistic ones. Embracing natural processes such as chaos and complexity, combined with approaches like participative teaching, among other strategies, helped Lange (2012) assert “…transformation is an elastic, moving, living process that is not time-specific or bound to individuals, but is carried within and among networks. Like flowing energy, it circulates outward through intentions, dialogue, and actions” (p. 206) which was evident in the participant descriptions.

Another major convergence point with transformative learning based on my findings is in experiential learning and curricular design. Belliveau and Heldke both spoke of this often in their interviews, when they described their strategies to instill the JDKI tenets into the workshop participants with engaging and meaningful pedagogical experiences. This very idea hails from Dewey (1938), and continues on within more contemporary scholarship (Burns, 2011; Breunig, 2005; Greenwood, 2003). At the JDKI, some of the ways the scholars created conditions conducive to transformative learning included scheduled activities such as: their affective sensory sessions, collaborative problem-solving activities through the process of cooking, mental scaffolding brainstorming discussions (called mental *mis en place*), and reflection sessions. Further, the environment itself in the *kitchenroom* as Belliveau calls it, was
inviting, inclusive of different perspectives, participative, process-driven, and open to discussion intended to be judgement-free.

The senses bring us to learn. When considering transformative learning, they have the power to challenge dualist mindsets by reunifying the body with the mind by mapping bodily sensations to memories which informs judgement, emotions, and preference. This is one of the key advantages to the chef’s and the chef educator’s role in helping change perspectives to help foster a more sustainable future. Key scholarship (O’Neil, 2015, 2017; Sutton, 2006, 2010) and my findings affirm the entanglement sensorial inputs have with being. For chef graduate Rickey, his sustained emotive memory of the experience with the cow transcended learning about and for sustainability, as he (be)came as sustainability. The result of which has become a co-reciprocal relationship with the human and nature. The cow gave Rickey appreciation of nature and those who grow food in nature, and Rickey gave back to nature with a lifetime of more considerate and relational decision making in Rickey’s career. This head work informs Rickey’s handwork, and as Rickey continues to work and think about his work, he reasserts his alliance with nature and the cow.

**Theme Summary.** Many pedagogical strategies like those employed in the chef graduate’s experience, and the ones fostered by Belliveau and Heldke at the JDKI address the shortcomings to sustainability occurring now in the modern era. The pedagogy and learning theme affirm these approaches as the toolset laid out in the ten principles for CSE. These methods are recommended to achieve the vision for sustainability needed to address the identified shortcomings to sustainability in culinary arts education.

A mapping of the subthemes within the pedagogy and learning theme to the ten principles for CSE are presented in Table 11.
Table 11. Mapping of Subthemes in Pedagogy & Learning with Ten Principles for CSE

<table>
<thead>
<tr>
<th>Principle</th>
<th>D</th>
<th>TLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Beyond master and apprentice toward cooperative learning</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Beyond recipe-based pedagogy toward critical thinking and adaptive learning</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. Beyond universal truths toward critical reflexivity and reflective practice</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4. Beyond invasion toward decolonization and rehabilitation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5. Beyond dualism toward educational sustainability</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>6. Beyond mechanistic views toward a systems perspective</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7. Beyond unsustainable food systems toward sustainable food systems</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>8. Beyond structures of power toward the power of relationality</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9. Beyond status quo toward transformative higher education</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>10. Beyond theory toward tangibility and action</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

Legend: D = Dewey; TLC = Transformative Learning and Change.

The universal compatibility of the pedagogical strategies indicated that all the CSE’s pedagogical approaches have been confirmed as viable strategies for addressing the shift toward sustainability and away from the current modernist issues. Scholarship from Sipos et al. (2008) agrees with these findings, as they laid out measurable objectives toward educating for sustainability through transformative action. Sipos et al. (2008) argued to create “…learning objectives, organized to evaluate a course or program’s embodiment of [transformative sustainability learning]” (p. 68). The researchers believed through course assignments, students could be challenged to critically reflect and act on such experiences, which according to Taylor (1998), were paramount to the transformative learning process. In experiential education this is achieved through thoughtfully designed project and problem-based pedagogy. This literature combined with my case study findings signifies the possibilities and importance education has in achieving a vision for sustainability.
**From Propositions to Principles.** In pairing the principles for CSE with findings from my three cases, I can address my research questions by affirming the propositions can be translated into principles for CSE for operationalization in culinary education (Table 12). A more comprehensive table addressing both barriers and pedagogical and learning strategies can be found in Appendix E.

*Table 12. Ten Principles, Approaches, and Example Strategies of CSE*

<table>
<thead>
<tr>
<th>Principle</th>
<th>TL Approaches</th>
<th>Examples of Strategies for Educators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Beyond the master and apprentice toward facilitating cooperative and experiential learning</td>
<td>Cooperative learning</td>
<td>Setting up meaning-making experiences</td>
</tr>
<tr>
<td>Learner centered</td>
<td>Apply learner directed project-based learning</td>
<td></td>
</tr>
<tr>
<td>Teachers as facilitator</td>
<td>Providing opportunities for critical questioning</td>
<td></td>
</tr>
<tr>
<td>Teachers as participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Beyond recipe-based pedagogy toward knowledge-rich thinking and creative questioning</td>
<td>Cognitive learning</td>
<td>Using critical thinking exercises</td>
</tr>
<tr>
<td>Skill to action</td>
<td>Allowing creative problem solving</td>
<td></td>
</tr>
<tr>
<td>Civic engagement</td>
<td>Conducting sensory analysis</td>
<td></td>
</tr>
<tr>
<td>Civic engagement</td>
<td>Guiding problem-based learning</td>
<td></td>
</tr>
<tr>
<td>3. Beyond universal truths toward critical reflexivity and reflective practice</td>
<td>Critical and emancipatory learning</td>
<td>Encouraging critical reflection and reflexivity</td>
</tr>
<tr>
<td>Critical and reflexive practice</td>
<td>Extend to reflective thought on and in action</td>
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</tr>
<tr>
<td>Affective learning</td>
<td>Host mindful sensory exercises</td>
<td></td>
</tr>
<tr>
<td>Life-long learning</td>
<td>Prompt self-evaluations</td>
<td></td>
</tr>
<tr>
<td>4. Beyond colonial invasion toward decolonization and re-inhabitation</td>
<td>Affective learning</td>
<td>Formalize time for situationality and sensory reflections</td>
</tr>
<tr>
<td>Localization, community</td>
<td>Encourage novel questioning</td>
<td></td>
</tr>
<tr>
<td>Comida-eating in community</td>
<td>Decolonize student programming</td>
<td></td>
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<tr>
<td>Incorporate community regeneration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Beyond dualism toward holism and participation</td>
<td>Relational learning</td>
<td>Develop learning exercises focusing on relationality, connectedness, interdependence, and adaptability</td>
</tr>
<tr>
<td>Critical and self-evaluative</td>
<td>Assign direction, process and action-oriented</td>
<td></td>
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<tr>
<td>Ecological and participative learning</td>
<td>resiliency activities</td>
<td></td>
</tr>
<tr>
<td>Holistic learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Principle</td>
<td>TL Approaches</td>
<td>Examples of Strategies for Educators</td>
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<tr>
<td>6. Beyond mechanistic views toward a living systems perspective</td>
<td>Purposeful action</td>
<td>Incorporate systems thinking into program design and lessons</td>
</tr>
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<td></td>
<td>Living and nested systems</td>
<td>Encourage process thinking</td>
</tr>
<tr>
<td></td>
<td>Holistic perspectives</td>
<td>Schedule excursions for food system service learning</td>
</tr>
<tr>
<td>7. Beyond unsustainable food systems toward just and sustainable food systems</td>
<td>Democratically participative</td>
<td>Utilize long-term evolutionary assignments</td>
</tr>
<tr>
<td></td>
<td>Environmental ethic, enduring</td>
<td>Emphasize relationality throughout the curriculum</td>
</tr>
<tr>
<td></td>
<td>Economically viable</td>
<td>Teach democratically and participatively</td>
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<tr>
<td></td>
<td>Socially, culturally, and spiritually healthful</td>
<td>Explore critical food system perspectives</td>
</tr>
<tr>
<td></td>
<td>Direct and authentically connected</td>
<td>Foster community and place-based food system projects</td>
</tr>
<tr>
<td></td>
<td>Community and civic oriented</td>
<td></td>
</tr>
<tr>
<td>8. Beyond structures of power and domination toward power of relationality</td>
<td>Interdependent Socio-ecological food justice Cosmic perspective</td>
<td>Ensure lessons emphasize living systems thinking</td>
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<tr>
<td></td>
<td></td>
<td>Have student explore being modes of existence</td>
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<tr>
<td></td>
<td></td>
<td>Practice food system emancipation planning</td>
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<tr>
<td></td>
<td></td>
<td>Engage students in partnership work</td>
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<tr>
<td>9. Beyond status quo programming toward transformative higher education</td>
<td>Modeling systems thinking</td>
<td>Begin with institutional modeling</td>
</tr>
<tr>
<td></td>
<td>Use-inspired research Institutional, interdisciplinarity, and trans-disciplinarity Holistic orientation</td>
<td>Leverage concentrated learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engage in problem-solving with use-inspired research projects</td>
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<tr>
<td></td>
<td></td>
<td>Place emphasis on individual student experience</td>
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<tr>
<td></td>
<td></td>
<td>Enable dialog</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Promote and practice critical reflection</td>
</tr>
<tr>
<td>10. Beyond theory toward integrative practice</td>
<td>Experiential Actionable change Embodiment Ethic of reciprocity Integrity Relational thinking Critical assessment</td>
<td>Extend theory into practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Employ action-based research and projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximize experiential education opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prompt critical reflection, self-assessment, and being</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analyze and address issues in sustainability</td>
</tr>
</tbody>
</table>
Transformative learning interfaces with all ten principles for CSE which is logical as it is transformation which is needed to instill a reorientation from unsustainability toward sustainability (Sterling, 2001).

**Implications**

This research was designed to probe deep into culinary education to zero in on where it falls short of sustainability, what the potential is for change, and how such change could be implemented. It then aimed to introduce CSE as a new paradigm of culinary education to meet that call for systemic transformation. In Chapter 1, I explained such a transformative learning process would be like a second Enlightenment and would foster a new paradigm of thought and action in the culinary industry considered sustainable for humans, non-humans, and the planet alike. Principally, the context of this study was to perturb the traditional industrial structures of culinary arts by infusing sustainability goals, practices, and ways of being sustainability within culinary arts programing in higher education. As evidenced by my personal stories outlining my own process of change, and in the interviews collected in my study, illustrating sustainability as a way of being has the potential to be a transformative learning process.

To do so I constructed my theoretical framework illustrating experiential education’s pathway to doing directed by comparative paths of action: the status quo modern culinary education model, or the changing course of transformative sustainability education. This framework was designed to determine if learners in culinary sustainability education could create immediate transformative change in the real-world through applied action. In analyzing the component parts to my theoretical framework, I applied a critical postmodern lens to examine modern culinary education, a vision for a more sustainable future, and pedagogical
and learning strategies to identify gaps to transformative sustainability education. These gaps were addressed with the application of a relational ecological lens. My postmodern examination revealed modern culinary education programs are deeply influenced by their historic roots in colonialism, domination, and power, and in their dedication of tradition and allegiance to positivist and dualist forms of thought dominate in western capitalist cultures. Further research into a potential vision of culinary sustainability outlined what is at stake, as the long-term viability of the food system and society overall hangs in the balance. This was followed by a survey of the pedagogical and learning theories which could outline a method for implementing sustainability into culinary education. Deweyan and pragmatic approaches alone were revealed to fall short of achieving the kind of sustainable change needed to spread throughout society, and critical postmodernism alone did not have sufficient action steps to address the need. The combination of the two, experiential education with critical postmodern epistemology, applied through an ecological relationality approach, enables a change agency process to occur autopoetically throughout society.

My theoretical framework and review of the literature informed the development of ten propositions for CSE for the use of employing transformative change in culinary education. It also informed the creation of the case study research process to assess their validity. Findings from the study not only validated the works of critical scholars I researched, it also substantiated the critical underpinnings of my ten principles for CSE and enriched the vision for culinary sustainability. Further, the pedagogical approaches to implementing CSE into culinary education was enhanced and refined. Research and findings from this study resulted in transitioning the ten propositions for CSE to ten principles for CSE for use in program development.
Limitations

Two sets of implications can be extracted from this study to inspire further research. The first come emergently from my findings and the second are to address the limitations my study was bound by. Emerging from my analysis I found a contradiction in my assumption chefs can be positioned as change agents to address issues of unsustainability in the culinary industry. This social reconstruction mindset needs to be better distinguished from the social efficiency mindset which my research illustrates is one of the propellants of mechanistic and reductionist thought. These are two opposing views of chef education with different purposes: social efficiency versus sustainability are necessary to generate energy for change. Reflexively, I have come to terms with this potential hypocrisy as a necessary contradiction in living in a capitalistic world while trying to move toward sustainability with different targeted goals. Similarly, everyone will have to contend with different aspects of their attitudes that remain in the old paradigm when addressing sustainability. This is especially true of all education systems. My background in culinary education, specifically my high school experiences attending a vocational training school, have predisposed me to the social efficiency mindset. Further inquiry separated from a vocational experience may hold value coming from an outsider perspective.

Further remaining questions relate to what could be considered a conflict of interest. Due to the relatively small number of sustainability programs imbedded in culinary education around the country, one of my case groups which I included were graduates of the culinary sustainability concentration I developed. Despite the advantages of the insider status I gained when I qualitatively interviewed them, a conflict of interest was introduced. In Chapter 3, I accounted for this conflict when I reflexively reviewed my positionality with them as their
former teacher and chef. I no long hold power over them, however, my second story of joining JWU as a faculty member illustrated the allegiance and loyalty chef learners are encultured with during their culinary training. As a result, further research into the effectiveness of the principles for CSE may need to be undergone to strengthen or challenge my findings.

The length of this study also limited the amount of potential transformative learning which could be experienced and shared from the workshop participants. Though valuable insights came from seeing the process occurring in real time, long term transformative learning effects could only be gleamed from the chef graduates who experienced their transformative change long ago. A longer study would provide richer data on the workshop participants’ process of change, bolstering the comparison.

**Contributions**

This work contributes to many areas of study. In critiquing culinary arts higher education, this research implicates colonial influences of power, hierarchy, reductionism, and dualism, among other holdovers from the middle ages, as having hold over culinary arts education and the culinary arts industry. Proposing culinary sustainability education as a solution to these challenges is a novel approach which employs and contributes to sustainability education, and transformative learning theory to practice. Research contributing to microaggressions, growing food, chef as change agent, and culinary education’s shift from vocational education workforce training toward holistic and relational learning, was also pushed forward in this report. Most importantly, this study was conducted to develop principles to guide program development and the reorientation of existing frameworks within higher education institutions. This area of research is profoundly important in the development of a more sustainable society.
**Food Learning and Practice**

Outside of this study, a Bachelor of Science Degree in Sustainable Food Systems I am developing at Johnson & Wales University is being guided by the ten principles for CSE and will afford future opportunities at further inquiry and assessment of their effectiveness. However, this is only an early step in implementation. Overall, much more sustainability programming needs to be introduced to culinary education. All programs set to educate chef workers have a moral obligation to cover and value topics of environmental management, social justice, relationality, and living systems thinking. This kind of education would pivot the industry away from resource extraction and abusive practices toward a more localized and harmonized way to operate cooperatively in the food system. This approach would work within the carrying capacity of the environment, enrich relational connections and fairness, and strengthen supply chains to create more resilient communities. Without widespread adoption of culinary sustainability practice, the culinary industry will continue to march on unchecked in its exploitation of nature, food systems, workers, and eaters. Modernist, resource extraction-driven, globalized capitalism is unsustainable for the planet and its inhabitants and will eventually run out, leaving behind ruination if not addressed. Broad adoption of culinary sustainability pedagogy can prevent this and offer an alternative sustainable future which does not diminish the prospects of others or the environment ahead.

**Sustainability Education**

Around North America, many programs in adult education are attempting to teach sustainability in formats related to food. Major degrees, specializations, minors, and certificate programs offered at undergraduate and graduate levels have an opportunity to apply sustainability concepts in food systems, as well as in other food related programming, such as
CULINARY SUSTAINABILITY EDUCATION

culinary arts, nutrition, agriculture, public health, and other similar disciplines in rhizomatic ways. Food system studies as a subject alone, set up an excellent foil for sustainable curricula due to the relational systems perspective learners gain (Edwards, 2010), but fall short of producing transformative sustainable change. Sterling (2001) posited such education must transcend teaching just about sustainability topics, to also teaching for sustainability and as sustainability. This body of work contributes to this discourse in transformative sustainability education. It advises culinary educators take a more relational and participatory approach to culinary education by engaging in the principles for CSE.

Instead of a culinary education being centered around the student competing to be a head chef, manager of people, and/or operator of a for-profit restaurant, this research concludes culinary sustainability education should focus on the chef learner being a fellow participant in a living food system and a leader in their broader community. In other words, instead of looking internally at the development of a chef, culinary sustainability educators should look externally, relationally, and participatory, at how a chef can operate in their community of food and people.

This study contributes to social food justice by emphasizing CSE supports community food health through improved food security, sovereignty, literacy, and access.

*Transformative Learning Theory to Practice*

CSE provides an excellent platform to introduce transformative learning theory in practice. Learners already engage in experiential learning in the process of foodmaking, and already work within a network of living systems connections in the food system. Sensory stimuli, handwork, headwork, and artistic expression are everyday practices in culinary arts education. CSE contributes to transformative learning theory by setting conditions with critical
discernment, promoting the experiential features of culinary education while emphasizing critical thinking, reflection, reflexivity, relational thinking, holism, and participative learning, among many other ecological approaches. Lastly, CSE contributes to this field through application which takes place in the real world and with real consequences. Transformative learning toward societal reconstruction, as envisioned in sustainable transformative learning, aims for this very practice.

**CSE Programs in Higher Education Culinary Programming Best Practices**

This study contributes to CSE by proving a recipe for best practices in developing or revising culinary education programming. Such programs should aim to facilitate:

- Cooperative and experiential learning;
- Knowledge-rich thinking and creative questioning;
- Critical reflexivity and reflective practice;
- Decolonization and re-inhabitation;
- Holism and participation;
- Living systems perspectives;
- Just and sustainable food systems;
- Power in relationality;
- Transformative higher education; and
- Integrative practice.

**Recommendations**

As courses, objectives, and outcomes in programming begin to take shape, Sipos et al. (2008) offer an architectural map of learning objectives, allegorized by their head, hands, and heart organizing principles. These principles, which represent the integration of “transdiscipli-
CULINARY SUSTAINABILITY EDUCATION

nary study (head); practical skills sharing and development (hands); and translation of passion and values into behavior [sic] (heart)” (Sipos et al., 2008, p. 68), perpetuate an emergent property the trio terms, transformative sustainability learning (Sipos et al., 2008). Aligning courses and programs to the head, hands, and heart model sets the stage for such transformative possibilities, but as Sipos et al. (2008) caution, teachers must be cognizant of the fact that transformative learning in higher education requires adjustment of university structures and educators to “enable such critically reflective, inter/transdisciplinary, experiential and placed-based learning to emerge…” (p. 71).

Such adjustments will require faculty to first evaluate and navigate the inherent contextual considerations within their institutions. In Caffarella’s (2002) book, Planning Programs for Adult Learners, she explains there are three headings for such considerations: structural, political and cultural. These factors must be considered when proposing changes or programming in an institution, such as in the curriculum proposal and development process for example. There, a faculty member hoping to propose a program can often be met with an obstacle course of committees, offices, and sometimes other campuses, where old ways of doing and thinking are the sentries barring systemic changes in programming which are needed. Whether it is having to submit a program into an archaic, reductionist application system, having to deal with obsessively pedantic data-entry requirements, endless edits, catalog and committee meeting deadlines, or stakeholder earmarking and budget constraints, faculty are lucky to endure the process with even a vestigial of their original programming (and enthusiasm) intact.

Such obsession with process over possibilities is one of the systemic challenges in more ponderous higher education institutions today. In the short term, approaches to navigate such
barriers include developing knowledge mobilization strategies which speak the institution’s language, emphasizing the benefits the proposal would have, such as job prospects, enrollment projections, outside funding opportunities, political leverage points, first-mover potential, or pathfinding to the school’s graduate programs. Incentivizing is one way to help bring keyholders along, but Caffarella (2002), advised more of an organizational cultural shift instead. To accomplish this, she believes building a solid base of support “for planning and conducting education and training programs is critical for program planners to embrace” (Caffarella, 2002, p. 83). Further, she outlined two forms of this support: commitment, which she describes as a recurrent promise, and action, which requires full involvement of stakeholders and resources to support that commitment.

Involvement will be the next challenge for culinary sustainability education. Implementing a program aimed at transforming systems of education within old systems of education. The challenge is mirrored in the food system as well, where proponents for more sustainable food are challenged with having to navigate within structures which value capitalistic modernist assumptions of purpose and priorities. To take this next step, sustainable culinary education needs a foothold to climb up. Implementing CSE into culinary arts education provides the opportunity to begin.

Further research to better account for the potential conflict of my involvement in the study could be done through the use of a proxy or outside investigator. Additional qualitative interviewing or the use of surveys could not only further corroborate or challenge the findings in this study, they could also strengthen the postmodern critique of culinary education if it proved my research faulty by showing how allegiances based off of hierarchies of power cannot be accounted for in a study such as this.
Other areas of future research which emerged from this study include the new Bachelor of Science Degree in Sustainable Food Systems I am sponsoring at JWU, and the long-term evaluation of the JDKI workshop participants. For the sustainable food systems program, since it was guided through development by the ten principles for CSE, assessing their effectiveness in framing the program over the long-term would be a valuable contribution to applied program design. Further, pedagogical and learning strategies aimed to actualize the TL approaches listed in Table 12, could be investigated and tested to continue this development of the ten principles for CSE, as well as progress the discourse of sustainability in culinary arts and education.

This case study was expansive, but not completely exhaustive. Limitations of the study inspired further research on the long-term transformative learning outcomes from the JDKI workshop participants and how (and if), they were able to apply the concepts and tenets of the workshop.

**Summary**

Culinary arts education has the opportunity to transform its programming to teach chefs about sustainability topics, how to value and advocate for sustainability as a social responsibility, and embrace transformative learning to be sustainability. The challenge for the culinary educator is in determining how culinary education can be transformed holistically and ethically toward sustainability.

This research project was designed to create a framework for the development of culinary sustainability curriculum which replaces traditional models of modern culinary education and breaks negative feedback loops which sow unsustainability in culinary arts. Such loops have perpetuated and normalized power struggles, hierarchies of domination,
reductionist and dualist worldviews, inequality, and the objectification of nature, humans, and nonhumans.

The groundwork is fertile to actualize the synthetization of culinary and sustainability pedagogies with transformative learning as many of the foundational seeds have now been sewn. Chefs are situated to institute profound and immediate change throughout the food system, the culinary industry, culinary education, and possibly beyond. Few careers offer a platform with so much potential to effect change, however, much of the industry and culinary education continues to operate unsustainably.

CSE must be operationalized into culinary education where opportunities are prolific for transformative change toward sustainability. For culinary learners, the potential exists to learn how to responsibly source food products, consumables, and building materials by researching and tracing origins and practices which can help protect the environment, humans, and nonhumans from exploitation. Community involvement and participative involvement in the food system are areas where chefs play an integral and relational role.

The aim of 10 principles for CSE is to create effective integration of transformative sustainability into culinary education so a positive autopoietic pattern of valuing and being sustainability can emerge throughout the culinary industry. Such a contribution is intended to further reinforce the value of sustainability concepts as foundational to culinary education.

My case study research not only validated the works of the critical scholars I reviewed in Chapter 2, it also validated the propositions, now ten principles for CSE, and the theoretical framework which I employed to develop them.

The time is right for culinary sustainability education.

Here. Now.
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Epilogue

Story 5. Becoming Agents of Change

After a few months of teaching at JWU, I was given the opportunity to join a faculty with similar interests in sustainability to create a Wellness & Sustainability Concentration. The year was 2011. By design, the trimester-long suite provided enrolled students three themed culinary laboratory classes: Farm to Table Desserts, Plant-based Cuisine, and Conscious Cuisine, along with an academic course, Sustainability in the Culinary Kitchen. In the laboratories, students would prepare recipes and menus with local ingredients from a community food hub, which were designed to be sustainable and contemporary in application. Further, they learned about a number of foodservice-relevant sustainability topics and issues, industry trends, and practical methods for creating sustainable menu and business concepts. Each laboratory course culminated in a chef’s table group project where students researched and designed a sustainable menu, and then prepared the food using local ingredients. They prepared this menu for four guests including the featured farmer who supplied ingredients, one of the student chefs, a local food media writer, and a faculty member or administrator from the culinary college. Throughout the meal, students plated their courses in front of their guests and presented them, explaining their inspiration behind each dish, including the choice of farmer and ingredients, and the technical culinary approach they used to create it.

Concurrent to these lab experiences, students were also enrolled in the academic course, in which they critically analyzed food system issues, surveyed the state of sustainability in the foodservice industry, debated hot topics, and enjoyed tastings of local and sustainable grass-fed beef, organic and responsibly grown produce, native farmed oysters, wild harvest quahogs, and locally caught fish. In this setting, students also met growers and fishermen\women in and out of the classroom. As they visited urban, organic, livestock, vegetable, hydroponic, and dairy farms,
in addition to local non-profit organizations including the Farm Fresh Rhode Island Food Hub, the Harvest Community Kitchen (an organization that offers workforce training for troubled youth), and Narragansett Bay’s Save the Bay conservation organization, students began to get a real sense of their local food web, the challenges of navigating it, and their responsibilities to it.

Over the course of the trimester, students integrated their classroom, lab, and field experiences. They would go to the farms on the weekend to work with cattle, forage for wild eats, join a local quahogger to dig clams in the icy March waters of Narragansett Bay, or they’d begin an internship with a farm equipped with a copper clad mobile pizza oven. On the farm trips, students participated in service learning like cleaning chicken coups, clearing fields, picking tomatoes, moving piglets and chicks, or cooking in make-shift kitchens—whether in a barn, a sugar shack that they were helping build that day, or under the warm sun. The experience of exhausting themselves in lab and at the farm in a single day, cooking under the sky, followed by the restorative practice of sharing a meal together with their farmer host and fellow classmates, acted as a parable reminding them of the deeper significance of what they were learning.

Such experiences can be profoundly meaningful. One day I received a text message from Danny, one of our local farmers who had been working with our student Vander for the previous six months.

Danny typed, “Last night Vander became a full-fledged farmer!”

“What do you mean?” I typed back.

Danny typed, “I was away from the farm last night during the storm. One of the ewes’ lambs got stuck while she was in labor. Vander called me and as I talked him through it, he pulled her out in the middle of that crazy electrical storm! Saved both their lives! Great kid. We love him. Send us more like him!”

Shocked and impressed, I texted Vander.
“It was a rush,” he texted back. “I’ve never been so humbled in my life... so filled with purpose. It was amazing, Chef. The more I think about it... I'll never be the same.”

***

Experiences like Vander’s clearly present an impactful and transformative opportunity to change perspectives, which can lead to alternative practices and alternative futures. Hard work and hard studying, followed by achievement and reflection, provide the potential for a major paradigm shift in not only individual learners, but in society as well. I hear it in my students’ conversations and see it in their expressions and in their coursework. When leaving the farms and at the end of the school year, students are often emotional; some have even cried over what they have experienced and learned. As a chef and professor, never before have I seen such strong reactions to curricular experiences. Many of these students graduate and move on to a variety of careers, and many of them also stay in touch. Our conversations follow a pattern. They ask me how I am, and then they tell me about all of the fantastic, sustainable things they are doing in their workplace. I cannot help but reflect on how their education not only prepared them for a career but transformed them into powerful change agents.

These change agents are more than chefs perpetuating the modernist industrial paradigm so prominent in the foodservice industry; they are now equipped to critically think and act to make the world a more livable one through food. The world needs more of this. The world needs more sustainable chefs.
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CULINARY SUSTAINABILITY EDUCATION


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CULINARY SUSTAINABILITY EDUCATION


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CULINARY SUSTAINABILITY EDUCATION


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296


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### Table A1. Literature Map

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## CULINARY SUSTAINABILITY EDUCATION

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Appendix B. Propositions for Analyses

The following indicators of TL were outlined by Freire (1970), Mezirow (1991), Lange (2013), and O’Sullivan (1999) in their examinations on the learning theory.

Table B1 assembles and tabulates relevant aspects of TL which inform my research questions.

Table B1. Indicators of Transformative Learning

<table>
<thead>
<tr>
<th>TL Concept</th>
<th>TL Indicators</th>
<th>Strategies for TL</th>
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<tbody>
<tr>
<td>Critical, emancipatory (Freire, 1970)</td>
<td>Purpose of education is societal transformation</td>
<td>A movement toward freedom</td>
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<td>Learners reflect on their world and change it (reflection and action)</td>
<td>Learners reflect on their world and change it (reflection and action)</td>
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<td>Become conscious of group interests, organize to advance their interests toward a just society</td>
<td>Become conscious of group interests, organize to advance their interests toward a just society</td>
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<td>Emancipation leads to critical positive change</td>
<td>Emancipation leads to critical positive change</td>
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<td>Educators play a non-traditional role</td>
<td>Work in educational institutions and in social movements</td>
<td>Work in educational institutions and in social movements</td>
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<td></td>
<td>Are co-constructors of knowledge</td>
<td>Are co-constructors of knowledge</td>
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<td>Make education value laden, fostering understanding of the political and economic forces in which they exist</td>
<td>Make education value laden, fostering understanding of the political and economic forces in which they exist</td>
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<td>Learners become critically conscious</td>
<td>Critically reflect to understand their historical, social, political, cultural and economic conditions</td>
<td>Critically reflect to understand their historical, social, political, cultural and economic conditions</td>
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<td></td>
<td>Take enlightened action resulting from self-analysis</td>
<td>Take enlightened action resulting from self-analysis</td>
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<td>Move toward social justice, equality, and freedom</td>
<td>Move toward social justice, equality, and freedom</td>
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<td></td>
<td>Take action against poverty, oppression, repression, and injustice</td>
<td>Take action against poverty, oppression, repression, and injustice</td>
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<td>Psycho-critical, transformation as critical reflection (Mezirow, 1991)</td>
<td>Constructing new meaning-making from experiences</td>
<td>Transforming meaning perspectives is central to adult development</td>
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<td>Through reflection, critical reflection, or critical self-reflection</td>
<td>Through reflection, critical reflection, or critical self-reflection</td>
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<td></td>
<td>Identify, assess, and reformulate key assumptions on which our perspectives are constructed</td>
<td>Identify, assess, and reformulate key assumptions on which our perspectives are constructed</td>
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<td>Questioning previously uncritically assimilated beliefs, values and perspectives that form a personal frame of reference</td>
<td>Questioning previously uncritically assimilated beliefs, values and perspectives that form a personal frame of reference</td>
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<td>Disorienting dilemma, sudden or slow</td>
<td>Disorienting dilemma, sudden or slow</td>
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<td>Outcomes reflect individuals who are changed</td>
<td>Outcomes reflect individuals who are changed</td>
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<td>More inclusive of their perceptions of the world</td>
<td>More inclusive of their perceptions of the world</td>
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<td>Able to differentiate increasingly its various aspects</td>
<td>Able to differentiate increasingly its various aspects</td>
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<td>Open to other points of view</td>
<td>Open to other points of view</td>
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<tr>
<td></td>
<td>Able to integrate differing dimensions of their experiences into meaningful and holistic relationships</td>
<td>Able to integrate differing dimensions of their experiences into meaningful and holistic relationships</td>
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<td>Transforming meaning perspectives is central to adult development</td>
<td>Critical awareness of how and why assumptions have come to constrain the way we perceive, understand and feel about our world</td>
<td>Critical awareness of how and why assumptions have come to constrain the way we perceive, understand and feel about our world</td>
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<tr>
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<td>To develop more inclusive, discriminating, permeable, better validated, and autonomous perspectives</td>
<td>To develop more inclusive, discriminating, permeable, better validated, and autonomous perspectives</td>
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<td>Changing habits of mind, meaning perspectives, worldview, personal paradigm</td>
<td>Changing habits of mind, meaning perspectives, worldview, personal paradigm</td>
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<td>Ecological Perspectives (Lange, 2013; O’Sullivan, 1999)</td>
<td>Leverages a relational, cosmic view to instill perspective change</td>
<td>Learners become planetary conscious through ecological principles, developing an ecological identity</td>
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<td>Learners become planetary conscious through ecological principles, developing an ecological identity</td>
<td>Learners become planetary conscious through ecological principles, developing an ecological identity</td>
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<td>Critiques globalization</td>
<td>Critiques globalization</td>
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<td>Understands the natural world as teacher, and a site for experiential learning</td>
<td>Understands the natural world as teacher, and a site for experiential learning</td>
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<td>Emergent and participatory</td>
<td>Emergent and participatory</td>
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Qualities of favorable learning conditions for TL are listed in Table B2.

Table B2. Indicators of Conditions for Transformative Learning

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<th>Indicator</th>
<th>Strategy</th>
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<td>Empowerment</td>
<td>Becoming aware of power relations in our practice</td>
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<td>(Cranton, 2016)</td>
<td></td>
<td>Exercising power in responsible and meaningful ways</td>
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<td>Empowering learners to exercise power through and in discourse</td>
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<td>Encouraging learner decision making</td>
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<td>Considering individual differences</td>
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<td>Opportunities to participate in</td>
<td>Questioning activities (dialoging)</td>
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<td>critical self-reflection and self-</td>
<td>Consciousness-raising activities</td>
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<td>awareness</td>
<td>Reflective journaling</td>
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<td>Experiential learning</td>
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<td>Recalling and summarizing critical incidents in one’s life</td>
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<td>Art-based learning projects</td>
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<td>Supportive environment</td>
<td>Being authentic</td>
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<td>Applying strategies</td>
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<td>Being introspective self-aware educators</td>
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<td>Fostering TL</td>
<td>Holistic orientation</td>
<td>Affective, relational approach</td>
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<td>(Taylor, 2009)</td>
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<td>Presentational ways of knowing</td>
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<td>Awareness of context</td>
<td>Surroundings of the learning event</td>
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<tr>
<td></td>
<td>Learner-centered teaching</td>
<td>Personal and professional situation of learners (their prior experience)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Background context shaping society</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teacher as facilitator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shared decision making, evaluation, and other learning responsibilities</td>
</tr>
</tbody>
</table>

Table B3 identifies evidence of transformative sustainability education.

Table B3. Qualities of Transformative Sustainability Education

<table>
<thead>
<tr>
<th>Reference</th>
<th>Qualities of Transformative Sustainability Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainable education</td>
<td>A transformative change in educational culture, critically aware of sustainability</td>
</tr>
<tr>
<td>(Sterling, 2001)</td>
<td>To attain social, economic and ecological wellbeing, it values, sustains and realizes human potential</td>
</tr>
<tr>
<td></td>
<td>Is participatory, empowering and self-organizing</td>
</tr>
<tr>
<td></td>
<td>Develops direction and process-oriented graduates, focused on relations, adaptive, critical and self-evaluative</td>
</tr>
<tr>
<td></td>
<td>Leverage systems thinking to illuminate connections and nodes at different contextual levels, promoting multifaceted and systemic approaches to sustainability</td>
</tr>
<tr>
<td></td>
<td>Involves first, second, and third order learning, where creative, reflexive, and participative learning and action may take place</td>
</tr>
<tr>
<td></td>
<td>Is about, for, and as sustainability</td>
</tr>
<tr>
<td></td>
<td>Must be applied in pragmatic and effective ways if the goal is to transcend theory to create tangible sustainable, transformative change in adult students and society</td>
</tr>
</tbody>
</table>
Table B4 lays out the concepts, indicators, and scholars of notable holistic experiential education. In places where characteristics between scholarly works overlap, they have been winnowed to reduce repetition.

Table B4. Tabulated Relevant Indicators of Holistic Experiential Education

<table>
<thead>
<tr>
<th>Reference</th>
<th>Orientation</th>
<th>Concept</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dewey, 1938</td>
<td>Reflective</td>
<td>Learning by doing</td>
<td>Action-oriented Problem solving and self-reliance Effective communication Potential for transformative learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Democracy in education</td>
<td></td>
</tr>
<tr>
<td>Kolb &amp; Kolb, 2011</td>
<td>Reflective</td>
<td>Experiential learning cycles</td>
<td>Action and reflection, experience and abstraction Holistic learning taking scale Human adaption involving the whole person</td>
</tr>
<tr>
<td>Hegarty, 2004</td>
<td>Reflective</td>
<td>Participatory</td>
<td>Avoids transmissive teaching Avoids hierarchal traditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Critically Reflexive &amp; Reflective</td>
<td>Promotes critical thinking, critical reflexivity, critical reflection</td>
</tr>
<tr>
<td>Fenwick, 2001</td>
<td>Reflective</td>
<td>Psychoanalytic perspective</td>
<td>“Illuminate desires and resistance emanating from unconscious dimensions of experiential learning” (p. 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Situative perspective</td>
<td>“Emphasize the connection between individuals and their communities of practice in a collective explanation of experiential learning” (p. 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Critical cultural perspective</td>
<td>“Focus on how power and inequity structure experience and promote social transformation through experiential learning” (p. 7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enactivist perspective</td>
<td>“Uphold an ecological systems understanding of experiential learning co-emerging in systems of human action, organizations, cultures, and nature” (p. 7)</td>
</tr>
<tr>
<td>Deutsch, 2004</td>
<td>Affective</td>
<td>Desire</td>
<td>Sensory responsive, problem solving, critical thinking Discourages transmissive (recipe based) teaching methods Based in professional, gastronomic, intensely personal desires</td>
</tr>
<tr>
<td>O’Neil, 2015</td>
<td>Affective</td>
<td>Relational</td>
<td>Use of senses, reunifying mind and body</td>
</tr>
<tr>
<td>Heron, 1992</td>
<td>Affective &amp; Reflective</td>
<td>Learning within relationship</td>
<td>Aims for wholeness/well-being based on interconnectedness with our bodies, those that surround, and our experiences. Increases</td>
</tr>
<tr>
<td>Reference</td>
<td>Orientation</td>
<td>Concept</td>
<td>Indicator</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------</td>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Yorks &amp; Kasl, 2002</td>
<td>Whole-person learning</td>
<td></td>
<td>sense of well-being and happiness, accepts “…the ‘shadow’ within” (Miller, 2019, p. 8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Considers wisdom and compassion, seeing and acting on deep insights “…into the nature of things” (Miller, 2019, p. 8). It includes critical perspectives, showing compassion for not only the oppressed, but also those who oppress</td>
</tr>
<tr>
<td>Miller, 2019</td>
<td></td>
<td></td>
<td>Sees awe and wonder in the natural world, in the arts, and motivates through a relationship with curiosity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fosters a sense of purpose/mastery in self and in learners. Helps us understand our role in the circle of life, in fulfilling our purpose, and in motivating us. Interests and roles in life are subject to change and evolution</td>
</tr>
</tbody>
</table>
Appendix C. Protocols

Scholar Informants Interview Protocol Sheet

Doctoral Research Study
University of Wisconsin Stevens Point

Step 1: Introduce the Study
Send introductory email to the scholar. Include Scholar Information & Consent Form. Request permission to interview (as a side, request permission to qualitatively interview and observe the course participants as well) and for them to email back a digitally signed consent form. Determine the best time and location to interview the scholars.

Step 2: Interviews
At the prearranged scheduled time, meet with the scholars individually to interview. Interviewing will take place semi-structured. Read them the following script before asking semi-structured qualitative questions.

Instructions for interviews
“Hi, thank you for allowing me to interview you. As I outlined in my email, I would like to interview you to gain perspectives into my study and inform my research. There are no right or wrong or desirable or undesirable answers. I would like you [all] to feel comfortable with saying what you really think and how you really feel.”

Tape recorder instructions
“If it is okay with you [all], I would like to tape-record our conversation so I can get all the details recorded while holding an attentive conversation with you [all]. All your comments will remain confidential. I will be compiling a report which may contain both individual and group comments among you scholars. Due to your distinction in your prospective fields, I will not be hiding your identities. Any transcripts which are created from these recordings to be used in the study will be offered to you for review in order to ensure accuracy.”

Themes:
- Culinary pedagogy;
- Sustainability Education; and
- Transformative Learning

Semi-structured Question Samples:
Semi-structured questions will fall within the following categories:

1. Cooking Pedagogy and Experiential Learning Questions
   a. Is there anything more than cooking happening here?
   b. What is the role of the instructor?
   c. Would this program be the same if it was not in a cooking context?
   d. What is the significance for cooking pedagogy related to Dewey’s tenants?
CULINARY SUSTAINABILITY EDUCATION

e. How do you think it related to sustainability?

2. Transformative Sustainability Education
   a. Do you think cooking pedagogy fosters a transformative experience related to food?
   b. If so, what have you seen students do with this knowledge into action?
   c. Do you see a change in the workshop participants? If so, what kind? If not, why not?

3. Critical Food Pedagogy
   a. Why do you think food is often problematized and paired with critical pedagogy?
   b. Do you think cooking pedagogy fosters critical thinking about food?
   c. If so, what have you seen students do with this knowledge into action?
   d. Do you see dualities existing in food and those who prepare it for others?
      • If so, what dualities do you see, and are they problematic for sustainability?
      Why? If not, why?

4. Culinary Profession and Sustainability
   a. Do you think this program can be duplicated in an entire culinary program?
   b. Do you see the culinary profession as being inherently antithetical to sustainability?
   c. What do you see is the present and potential role of the chef and other positions in fostering a more sustainable future?
   d. What are the potential implications?
      • What actions are needed and what tools?
      • How would you recommend gaining those tools?

Step 3: Debriefing Statement

Use this statement after completing interviews and when describing the benefit that participation in the study brings.

Script:
“Thank you for your participation. Your help in this study helps inform my practice and allows me to research my problem more effectively. The way chefs learn in culinary education today is unsustainable for the environment and for learners entangled in it. My hope for this study is to inform a new way to teach culinary arts; a way which is more sustainable and inspires change agents who have the tools to solve the most challenging issues of our time.”
CULINARY SUSTAINABILITY EDUCATION

Workshop Participants Participant Observation & Interview Protocol Sheet

Doctoral Research Study
University of Wisconsin Stevens Point

Step 1: Introduce the Study

Attend the first day of the workshop. At the start of the course, the instructor introduces the course and participants. At some point, she points out that I would like to address the group.

**Script:**
“Hello. My name is Branden Lewis. I am a doctoral student at the University of Wisconsin Stevens Point, Wisconsin. My program is in Educational Sustainability. As you are here, attending the *Dewey Institute Workshop on Experiential Education*, you are being invited to take part in a research study I am conducting to inform my dissertation research.”

“I’d like to make it clear that I am not affiliated with this program any more than you are as a participant. I only asked if I could also conduct my study while attending.”

“As I quickly explain my study, I welcome any questions anyone may have, so please raise your hand at any time while I provide some quick information to help you understand what I am studying and what I am asking of you.”

**Review with the Group:** Participant Information Sheet

Step 2: Interviews

When opportunities arise, request an interview session with some of the course participants after the day completes. Read them the following script before asking semi-structured qualitative questions.

**Instructions for interviews**

“Hi, I was hoping I could ask you [or you all] a few interview questions for the study I told you about at the beginning of class [recap study if needed by interviewee(s)]. The purpose of this interview is to get your perceptions of your experiences within this workshop. There are no right or wrong or desirable or undesirable answers. I would like you [all] to feel comfortable with saying what you really think and how you really feel.”

**Tape recorder instructions**

“If it is okay with you [all], I would like to tape-record our conversation so I can get all the details recorded while holding an attentive conversation with you [all]. All your comments will remain confidential. I will be compiling a report which will contain both individual and student group comments without any reference to individuals, unless by alias. Any transcripts which are created from these recordings to be used in the study will be offered to you for review in order to ensure accuracy.”

**Themes:**
- Culinary pedagogy;
- Sustainability Education; and
- Transformative Learning
Semi-structured Question Samples:

Semi-structured questions will fall within the following themes:

1. What is it like to be in this program?
2. In there anything more than cooking happening here?
3. Do you have any changes in perspective after attending this program?
4. What experiences have connected for you in this program?
   a. How have they connected?
   b. Would you have learned the same if it was not in the cooking context?

Step 3: Debriefing Statement

Use this statement after completing interviews and when describing the benefit that participation in the study brings.

Script:

“Thank you for your participation. Your help in this study helps inform my practice and allows me to research my problem more effectively. The way chefs learn in culinary education today is unsustainable for the environment and for learners entangled in it. My hope for this study is to inform a new way to teach culinary arts; a way which is more sustainable and inspires change agents who have the tools to solve the most challenging issues of our time.”
Chef Graduates Recruitment & Interview Protocol

Doctoral Research Study
University of Wisconsin Stevens Point

Step 1: Draft an Ad
Once passing IRB approval from JWU and UWSP, I will then post the following advertisement on Instagram (image form) and Facebook:

Attention!
Searching for Research Participants.
Are you an alum who attended the Wellness & Sustainability Concentration?
Are you over 21 years of age?
If so, please consider being interviewed for my study.
Email blewi933@uwsp.edu if interested.
Thank you.

Step 2: Introduce the Study
Once receiving an email from someone interested in participating in the study, I will reply with the following email:

Email Script:
Thank you for your response to the ad to participate in my study. As you may or may not know, I am a doctoral student at the University of Wisconsin Stevens Point, Wisconsin. My program is in Educational Sustainability. Your past participation in the Wellness & Sustainability Concentration has provided you with the experience necessary to inform my study.

For this study, I am requesting to schedule an interview with you via Skype. The interview would be recorded using the recording feature available on Skype; however, your identity will never be revealed and the video will never be seen by anyone other than myself. I would be recording only to later transcribe the interview for use in my study. The video would then be deleted, but the transcription would remain stored on a password protected computer for up to seven-years which is standard protocol for this kind of study. I would use an alias for your name if I were to quote anything you said, and I would send you any quotes I hoped to use for approval before doing so.

Questions I am looking to ask you would look similar to this:

1. What was it like to be in the Wellness & Sustainability Concentration?
2. Did you have any changes in perspective after attending the program?
   a. Were there any key moments for you?
3. What experiences were meaningful to you?
   a. How were they meaningful?
b. Were there any connections from these experiences in the program to your life or profession?

Please find the attached consent form and review it. If you have questions at any time, please don’t hesitate to reach out to me, or any of the people listed on that form. If you’d like to participate in the study, please complete the bottom section and email it back to me. This is the only form you will encounter for this study.

Thank you.

Attach to the reply email: Alumni Consent Form

Step 3: Interviews

Once a completed consent form is received, email the participant back with potential dates which may work for them. Set up a time and then inquire upon the best online platform for the user to be able to participate in a video call. If a video call is not possible for the participant, consider a regular phone call or an in-person interview if they live locally. If an in-person interview is arranged, find a local library if it is more convenient for them.

Read them the following script before asking semi-structured qualitative questions.

Instructions for interviews

“Hi, thank you again for agreeing to being interviewed. The purpose of this interview is to get your perceptions of your experiences within the Wellness & Sustainability Concentration. There are no right or wrong or desirable or undesirable answers. I would like you to feel comfortable with saying what you really think and how you really feel.”

Tape recorder instructions

“If it is okay with you, I would like to video record our conversation so I can get all the details recorded while holding an attentive conversation with you. All your comments will remain confidential. I will be compiling a report which will contain comments without any reference to individuals, unless by alias. Any transcripts which are created from these recordings to be used in the study will be offered to you for review in order to ensure accuracy.”

Themes:

- Culinary pedagogy;
- Sustainability Education; and
- Transformative Learning

Semi-structured Question Samples:

Semi-structured questions will fall within the following themes:

1. What was it like to be in the Wellness & Sustainability Concentration?
2. Did you have any changes in perspective after attending the program?
   a. Were there any key moments for you?
3. What experiences were meaningful to you?
a. How were they meaningful?

b. Were there any connections from these experiences in the program to your life or profession?

Step 3: Debriefing Statement

Use this statement after completing interviews and when describing the benefit that participation in the study brings.

**Script:**

“Thank you for your participation. Your help in this study helps inform my practice and allows me to research my problem more effectively. The way chefs learn in culinary education today is unsustainable for the environment and for learners entangled in it. My hope for this study is to inform a new way to teach culinary arts; a way which is more sustainable and inspires change agents who have the tools to solve the most challenging issues of our time.”
Dear Dr. Belliveau,

Hi, my name is Branden Lewis, a doctoral student at the University of Wisconsin Steven’s Point and one of Dr. O’Neil’s pupils. I am pleased to make your acquaintance.

I’m also excited for this summer. From what I have been able to gather from the website, the Experiential Learning in the Kitchen Classroom Workshop looks to be a lot of fun with opportunities for deep learning.

I’m not sure if Dr. O’Neil has shared my dissertation topic with you or not, but I am aiming to try and make a positive impact on adult culinary education. More specifically, my purpose is to transform culinary education toward culinary education as sustainability. Presently, at my university I have just completed running through the curriculum approval process “gauntlet”. My reward is the passing of my BS degree in Sustainable Food Systems. All four of our culinary campuses (Charlotte, Denver, Miami, and here in Providence) have enthusiastically signed on, which means the potential reach of this major is significant. Much of the credit is due to my mentor, Dr. O’Neil, for creating and accepting me in the Educational Sustainability Doctoral Program at UWSP, and for guiding and inspiring me to push for systemic change. My dissertation focus is intended to inform my further development of this Sustainable Food Systems program.

In my study so far, I have researched and provided a postmodern critical critique of modern culinary pedagogy, leveraging the work of your colleague Lisa Heldke, as well as Deutsche, Woodhouse, and many others. I have also been studying Sterling’s approach to transformative sustainability education, and Dr. O’Neil’s Living Learning System. As I have been working on my dissertation proposal and my literature review, my work has also prompted me to research the potential impact a chef or foodservice professional can have on the industry and beyond. Here I have relied on the work of another of your colleagues, Amy Trubek, as well as your own work in cooking pedagogy, experiential education and when I have argued for the reunification of mind and body.

Next on my plate is my applied residency and deciding on a research study. For my study, I have discussed ideas with Dr. O’Neil and my second chair, Dr. Elizabeth Lange. Dr. Lange has recommended following a case study methodology and reaching out to you for part of the study (hence why I am providing so much background information on my dissertation topic). Without intending to be too forward, what I would like to ask is, would it be possible to qualitatively interview you and Dr. Heldke during the summer workshop, as well as the other program participants, and would it be permissible to ethnographically study them during the running of the course? In terms of protocol, I have it all mapped out and can provide you with the information if you were open to it. I would also reach out to UVM’s IRB as well as the UWSP’s IRB.
What I’d be interviewing and ethnographically observing for is information on what a culinary education as sustainability should look like as a program I could implement. There’s a lot to unpack in that sentence, which is all covered in my research questions. For now I’d like to spare you with those additional details as I have just given you a big “ask,” and am fearful that I have been overly forward (my apologies).

For now, I just want to reiterate that I am honored to meet you and that I really appreciate you accommodating me as a workshop participant this summer for my applied residency. I also am very thankful for your consideration. Please let me know your thoughts.

Thank you,

Branden J Lewis, MBA, CEC
Chef & Associate Professor
Johnson & Wales University | College of Culinary Arts
Appendix D. Approvals & Consents

Institutional Review Board

Full Board Protocol Approval

6/5/19

Pi: Henry St. Maurice
Protocol Number: 2019-28-05-10
Protocol Title: Branden Lewis Doctoral Research for Dissertation
Protocol Approval Date: 5/10/19
Protocol Expiration Date: 5/9/20
Review Category: Full Board Review
UWSP FWA: 00017591

Dear Dr. St. Maurice,

The above-referenced human-subjects research project has been approved by the University of Wisconsin-Stevens Point Institutional Review Board (IRB) Committee. This approval is limited to the activities described in the approved protocol, and extends to the performance of these activities at each applicable site identified in the application for IRB review. In accordance with this approval, the specific conditions for the conduct of this research are listed below, and informed consent from subjects must be obtained as indicated. Additional conditions for the general conduct of human-subjects research may be detailed below.

Additional Conditions:

All individuals engaged in human-subjects research are responsible for compliance with all applicable UWSP Research Policies. The Principal Investigator is responsible for assuring all protocol personnel review and adhere to applicable policies for the conduct of human-subjects research.

The IRB maintains an official protocol file for each study to meet the University’s regulatory obligations for record keeping. Principal Investigators are responsible for maintaining all records related to the protocol, and are required to share with the IRB. The IRB is not responsible for maintaining study documents for researchers.

Your project approval expiration date is listed above. As a courtesy, approximately 30 and 60 days prior to the expiration of this approval, IRB Administration will notify you via e-mail reminding you to apply for continuing review. It is your responsibility to apply for continuing review and receive continuing approval for the duration of the study. Lapses in approval should be avoided to protect the safety and welfare of enrolled subjects. When you plan to close your study, submit a Protocol Closure Form to irbchair@uwsp.edu.

No changes are to be made to the approved protocol or study documents (i.e., consent forms, surveys, etc.) without prior review and approval of the IRB. To modify an existing protocol, complete the Protocol Modification Form and submit to irbchair@uwsp.edu.

If there are any injuries, problems, or complaints from participants, you must notify the IRB at irbchair@uwsp.edu within 24 hours.

If you have any questions, please contact me. Good luck with your project.

Sincerely,

Anna Haines, Ph.D.
IRB Chair
ahaines@uwsp.edu
715-346-2368

c: Branden Lewis
Exemption Certification - Initial

To: Branden Lewis
From: Gale Weld, Research Review Analyst, CIP
Approved Date: June 21, 2019
Study#: CHRBSS (Behavioral); STUDY00000352
Study Title: Informing Culinary Sustainability Education
Sponsor: Internal Funding
Branden Lewis UWSP
Qualitative_Research_Protocol_Form_6-17-2019.pdf; citiCompletionReport7812822.pdf;
consent_process_documentation
form[42576].docx; Exempt Approval Lewis v2.docx
Finalized Documents: Exempt_2_form_5.3.19[42286].docx;
Recruitment.pdf;
Research_Data_Management_and_Security_Plan_0.1 (1).pdf; UVMs Participant Information Sheet v5.pdf; UVMs Scholar Information Sheet v5.pdf;

The study referenced above was reviewed by the Chair of the IRB (or an authorized designee) using the exempt procedures set forth under 45 CFR 46.104. While the project is exempt from IRB review, it is required that researchers follow all human subject protection regulations and notify the IRB of any problems that arise during the conduct of the project.

Exemption Category: (2)(iii) Tests, surveys, interviews, or observation (identifiable); and for which limited IRB review was conducted via expedited review
(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: (iii) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §__111(a)(7)

Consent/HIPAA/Waiver Determinations:
• Waiver of Documentation of Consent under 46.117(c)(1)

This determination applies only to the activities described in this IRB submission and will no longer apply should any changes be made. If changes are necessary, please submit a modification for consideration of a continued exemption.
Memo

To: Branden Lewis
From: David Hood, JWU Institutional Review Board (IRB) Chair
Date: July 10, 2019
Re: Approval of Research Proposal Application (RPA) #190501

On behalf of the IRB, I am pleased to inform you that review of RPA #190501 for your project entitled *Informing Culinary Sustainability Education* has been completed and that you may now begin your research. As per IRB procedures, an approved RPA indicates that there are no concerns with the study proposed in the application, and the Principal Investigator (PI) may commence the planned inquiry. Note that any modifications to your planned research will need to be approved by the IRB. The following procedures relate to requests for modifications and extensions. You will find these procedures and other important information and instructions on the IRB webpage.

1. Requests for protocol modifications and study extensions are made via submission of an Amendment form and will be screened by the IRB chair to determine the extent of the proposed changes.

2. If the proposed changes are not significant (e.g. would not involve change in PI, overall scope of work, funding source, etc.), the review will be conducted by the IRB chair. Following review, the PI will receive official notification from the IRB chair concerning the result of the review: Approved, Modifications required or Declined.

3. Requests for significant changes to the previously approved study will be assigned and reviewed according to the criteria and procedures described on the JWU IRB webpage.

In addition, the PI should be aware of the need for Unexpected Event Reporting, as outlined below:

1. It is the PI’s responsibility to complete and submit the Unexpected Event Reporting Form (UERF) to the IRB chair through JWU’s IRB webpage when unanticipated events are discovered during the course of the research and no later than five business after their occurrence.

2. When a UERF is received, the IRB chair will immediately notify the ex-officio member representing the Provost’s Office, who will work with the IRB chair to determine the need to notify other university stakeholders such as Office of the General Council, Equity & Compliance Services, Risk Management, Information Technology, Human Resources, Safety & Security and/or the IRB.

3. A meeting with appropriate stakeholders will be convened by the IRB chair. The results of the meeting, including required action steps, will be communicated to the PI in writing within 24 hours. This information will also be entered in the official log and record maintained by the Provost’s Office.

Your interest in scholarship is encouraging and is something the IRB and ultimately the entire Johnson & Wales University community are proud of. We are here to assist with anything we can do. Feel free to reach out regarding your project and/or IRB involvement.

institutionalreviewboard@jwu.edu
Dr. Henry St. Maurice, a professor emeritus at the University of Wisconsin Stevens Point, and doctoral student, Branden Lewis, an associate professor at Johnson & Wales University would appreciate your participation in a research study designed to determine how sustainability should be taught in adult culinary education. As a prominent voice and scholar in your field, you are being asked to be interviewed for 30-60 minutes while being audio taped. Your identity would not be anonymous. Your participation is completely voluntary. There may be no direct benefit to you for your participation. However, others may benefit by understanding the best approach to teaching and learning sustainability concepts in culinary education.

We anticipate no risks to you as a result of your participation in this study other than the inconvenience of the time it takes to complete the interview.

While this information might be obtainable by conducting a questionnaire with you, we believe that qualitative interviewing would provide a deeper, richer, and more organic platform in which to gather information for the study. You may also choose not to participate as an alternative.

The information that you provide will be recorded with an audio file and your identity will be revealed in the transcript. As a leader in your field, we feel your name adds importance and deeper context to your answers. All raw and processed data will be kept on a password protected computer and any physical documents, thumb drives, notes, etc., will be in a locked box in the personal office of Branden Lewis. These items will not be available to anyone not directly involved in this study.

Your participation in this study is completely voluntary. If you want to withdraw from the study, at any time, you may do so without penalty or loss of benefit entitled. Only anonymous information provided will be retained. All identifiable information will be removed from the study and destroyed or deleted.

As the data from the study is analyzed, any transcript data directly quoting you will be emailed to you for verification. If you disagree or would like to correct any transcribed data, you can then respond by replying to the researcher. Once the study is completed, you may receive the results of the study.
If you would like these results, or if you have any questions in the meantime, please contact:

Dr. Henry St Maurice or Branden J. Lewis  
School of Education  
University of Wisconsin – Stevens Point  
Stevens Point, WI 54481  
920-318-0037 or 401-263-4090  
hstmaurice@uwsp.edu or blewi933@uwsp.edu

If you have any complaints about your treatment as a participant in this study or believe that you have been harmed in some way by your participation, please call or write:

Anna Haines, PhD  
Professor, Natural Resource Planning  
Director, Center for Land Use Education  
800 Reserve Street  
College of Natural Resources  
University of Wisconsin, Stevens Point and Extension  
Stevens Point, WI 54481  
715.346.2386  
irbchair@uwsp.edu

Although Dr. Haines will ask your name, all complaints are kept in confidence.

You have been given a summary of this research study. Should you have any further questions about the research, you may contact the person conducting the study at the address and telephone number given above. Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or prejudice.

If you would like to take part in this study, then please fill out the below section electronically and email it back to Branden Lewis (email is listed above). This will be your consent to participate in this research study.

☐ I understand my identity would be revealed in this study.

“I, __________________, have read and understand the information provided to me; that my participation is voluntary and I may withdraw at any time.”

________________________________________  ___________________
Digitally Sign Here                          Date Here
Dr. Henry St. Maurice, a professor emeritus at the University of Wisconsin Stevens Point, and doctoral student, Branden Lewis, an associate professor at Johnson & Wales University would appreciate your participation in a research study designed to determine how sustainability should be taught in adult culinary education. As a participant in this workshop, you are being asked to conduct the usual classroom, kitchen, and field activities as instructed by the course instructor. As a researcher and participant, I am asking you if I can collect data via notebook and audio recordings of the course activities, including field work, cooking, discussions, and eating you are involved in. I may ask you informal questions related to how you are learning from the experience you engage in as part of the course. Such semi-structured, informal interviews could last 3-15 minutes while being audio taped. Your identify would be anonymous and your participation is completely voluntary. There may be no direct benefit to you for your participation. However, others may benefit by understanding the best approach to teaching and learning sustainability concepts in culinary education.

We anticipate no risks to you as a result of your participation in this study other than the inconvenience of the time it takes to complete the interview.

While this information might be obtainable by conducting a questionnaire with you, we believe that observation and interviewing would provide a deeper, richer, and more organic platform in which to gather information for the study. You may also choose not to participate as an alternative.

The information that you provide will be recorded with an audio file and your identity will be in anonymous form. We will not release information that could identify you. All raw and processed data will be kept on a password protected computer and any physical documents, thumb drives, notes, etc., will be in a locked box in the personal office of Branden Lewis. These items will not be available to anyone not directly involved in this study.

Your participation in this study is completely voluntary. If you want to withdraw from the study, at any time, you may do so without penalty or loss of benefit entitled. Only anonymous information provided will be retained. All identifiable information will be removed from the study and destroyed or deleted.

As the data from the study is analyzed, any transcript data directly quoting you anonymously will be emailed to you for verification. If you disagree or would like to correct any transcribed data, you can then respond by replying to the researcher. Once the study is completed, you may receive the results of the study. If you would like these results, or if you have any questions in the meantime, please contact:
If you have any complaints about your treatment as a participant in this study or believe that you have been harmed in some way by your participation, please call or write:

Anna Haines, PhD
Professor, Natural Resource Planning
Director, Center for Land Use Education
800 Reserve Street
College of Natural Resources
University of Wisconsin, Stevens Point and Extension
Stevens Point, WI 54481
715.346.2386
irbchair@uwsp.edu

Although Dr. Haines will ask your name, all complaints are kept in confidence.

You have been given a summary of this research study. Should you have any further questions about the research, you may contact the person conducting the study at the address and telephone number given above. Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or prejudice.

If you would like to take part in this study, then an oral confirmation will be requested by Branden Lewis at the beginning of the course. This oral confirmation will be your consent to participate in this research study.
CULINARY SUSTAINABILITY EDUCATION

Chef Graduates Consent Form

Doctoral Research Study
University of Wisconsin Stevens Point

Dr. Henry St. Maurice, a professor emeritus at the University of Wisconsin Stevens Point, and doctoral student, Branden Lewis, an associate professor at Johnson & Wales University would appreciate your participation in a research study designed to determine how sustainability should be taught in adult culinary education. As an alumnus who participated in the Wellness & Sustainability Concentration, you are being asked to be interviewed for 30-45 minutes through a Skype application while being videotaped. Your identify would be anonymous and your participation is completely voluntary. There may be no direct benefit to you for your participation. However, others may benefit by understanding the best approach to teaching and learning sustainability concepts in culinary education.

We anticipate no risks to you as a result of your participation in this study other than the inconvenience of the time it takes to complete the interview.

While this information might be obtainable by conducting a questionnaire with you, we believe that interviewing would provide a deeper, richer, and more organic platform in which to gather information for the study. You may also choose not to participate as an alternative.

The information that you provide will be recorded with a video file and your identity will be in anonymous form. We will not release information that could identify you. No video will be released. All raw and processed data will be kept on a password protected computer and any physical documents, thumb drives, notes, etc., will be in a locked box in the personal office of Branden Lewis. These items will not be available to anyone not directly involved in this study.

Your participation in this study is completely voluntary. If you want to withdraw from the study, at any time, you may do so without penalty or loss of benefit entitled. All identifiable information will be removed from the study and destroyed or deleted.

As the data from the study is analyzed, any transcript data directly quoting you anonymously will be emailed to you for verification. If you disagree or would like to correct any transcribed data, you can then respond by replying to the researcher. Once the study is completed, you may receive the results of the study. If you would like these results, or if you have any questions in the meantime, please contact:

Dr. Henry St Maurice or Branden J. Lewis
School of Education
University of Wisconsin – Stevens Point
If you have any complaints about your treatment as a participant in this study or believe that you have been harmed in some way by your participation, please call or write:

Anna Haines, PhD
Professor, Natural Resource Planning
Director, Center for Land Use Education
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You have been given a summary of this research study. Should you have any further questions about the research, you may contact the person conducting the study at the address and telephone number given above. Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or prejudice.

If you would like to take part in this study, then please fill out the below section and email a copy back to Branden Lewis. He will respond to schedule an appointment for the interview. This digital confirmation will be your consent to participate in this research study.

☐ Check if you are 21 years of age or older.

☐ Check if you completed the Wellness & Sustainability Concentration.

☐ Check if you are a college graduate and no longer enrolled at an institution.

“I, ________________, have read and understand the information provided to me; that my participation is voluntary and I may withdraw at any time.”

_____________________________  ______________________
Digitally Sign Here              Date Here
### CULINARY SUSTAINABILITY EDUCATION

#### Appendix E. Codes, Results, and Strategies

*Table E1: Cooking Pedagogy and Experiential Learning, Scholars Inquiry*

<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the role of the instructor? (RQ1, RQ2, RQ3)*</td>
<td>Hierarchies in Modern Culinary Education Master/Apprentice Ideology Brigade System Monarchical System Patriarchal Command Dualism and Cartesian Cooking Dualism and Inequity Hierarchies of Domination Culinary Pedagogy as Sustainability Beyond Master/Apprentice Beyond Dualism</td>
</tr>
<tr>
<td>Would this program be the same if it was not in a cooking context? (RQ1)*</td>
<td>Dualism and Cartesian Cooking Mind and Body The Food Revolution and a Vision for Sustainable Culinary Arts Transformational Opportunities Toward Sustainable Pedagogy Tangibility &amp; Action</td>
</tr>
<tr>
<td>What is the significance for cooking pedagogy related to Dewey’s tenants? (RQ 1, RQ2, RQ3)*</td>
<td>Dualism and Cartesian Cooking Mind and Body Skills versus Knowledge Toward Sustainable Pedagogy Tangibility &amp; Action The Food Revolution and a Vision for Sustainable Culinary Arts Chef Graduate as Change Agents Culinary Pedagogy as Sustainability Beyond Master/Apprentice</td>
</tr>
</tbody>
</table>
CULINARY SUSTAINABILITY EDUCATION

<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you think it related to sustainability? (RQ1, RQ2)*</td>
<td>Culinary Pedagogy as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Beyond Recipe-based Pedagogy</td>
</tr>
<tr>
<td></td>
<td>Beyond Colonial Invasion</td>
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<td></td>
<td>Beyond Dualism</td>
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<td></td>
<td>Toward Sustainable Pedagogy</td>
</tr>
<tr>
<td></td>
<td>Sustainability in the Food System</td>
</tr>
<tr>
<td></td>
<td>Toward Learning as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Integrating Transformational Learning</td>
</tr>
</tbody>
</table>

*RQ = Research Questions 1-3

Table E2. Transformative Sustainability Education, Scholars Inquiry

<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think cooking pedagogy fosters a transformative experience related to food? (RQ1, RQ2)*</td>
<td>Dualism and Cartesian Cooking</td>
</tr>
<tr>
<td></td>
<td>Mind and Body</td>
</tr>
<tr>
<td></td>
<td>The Food Revolution and a Vision for Sustainable Culinary Arts</td>
</tr>
<tr>
<td></td>
<td>Transformational Opportunities</td>
</tr>
<tr>
<td>If so, what have you seen students do with this knowledge into action? (RQ1, RQ2)*</td>
<td>Toward Sustainable Pedagogy</td>
</tr>
<tr>
<td></td>
<td>Toward Learning as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Tangibility and Action</td>
</tr>
<tr>
<td></td>
<td>Integrating Transformative Learning</td>
</tr>
<tr>
<td>Do you see a change in the workshop participants? If so, what kind? If not, why not? (RQ2, RQ3)*</td>
<td>Dualism and Cartesian Cooking</td>
</tr>
<tr>
<td></td>
<td>Mind and Body</td>
</tr>
<tr>
<td></td>
<td>Dualism and Inequity</td>
</tr>
<tr>
<td></td>
<td>Culinary Arts as Fine Art</td>
</tr>
<tr>
<td></td>
<td>Skills versus Knowledge</td>
</tr>
<tr>
<td></td>
<td>Hierarchies of Domination</td>
</tr>
<tr>
<td></td>
<td>Culinary Pedagogy as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Beyond Recipe-based Pedagogy</td>
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<td></td>
<td>Beyond Colonial Invasion</td>
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<td></td>
<td>Beyond Dualism</td>
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<td></td>
<td>Toward Sustainable Pedagogy</td>
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<tr>
<td></td>
<td>Toward a Systems Perspective</td>
</tr>
<tr>
<td></td>
<td>Toward Learning as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
</tr>
</tbody>
</table>
Table E3. Critical Food Pedagogy, Scholars Inquiry

<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Concepts</th>
</tr>
</thead>
</table>
| Why do you think food is often problematized and paired with critical pedagogy? | Hierarchies in Modern Culinary Education  
|                                                                               | Master/Apprentice Ideology                                                |
|                                                                               | Brigade System                                                            |
|                                                                               | Monarchical System                                                        |
|                                                                               | Patriarchal Command                                                       |
| Do you think cooking pedagogy fosters critical thinking about food?            | Equity Issues in Culinary Industry and Education  
|                                                                               | Gender Equity                                                             |
|                                                                               | Class Equity                                                              |
|                                                                               | Race, Equity, and Colonialism                                              |
| If so, what have you seen students do with this knowledge into action?        | Culinary Pedagogy as Sustainability  
|                                                                               | Beyond Master/Apprentice                                                  |
|                                                                               | Beyond Recipe-based Pedagogy                                               |
|                                                                               | Beyond Universal Truths                                                    |
|                                                                               | Beyond Colonial Invasion                                                  |
|                                                                               | Beyond Dualism                                                            |
| Do you see dualities existing in food and those who prepare it for others?     | Hierarchies in Modern Culinary Education  
|                                                                               | Brigade System                                                            |
| If so, what dualities do you see, and are they problematic for sustainability? | Equity Issues in Culinary Industry and Education  
|                                                                               | Class Equity                                                              |
|                                                                               | Race, Equity, and Colonialism                                              |
|                                                                               | Dualism and Cartesian Cooking                                              |
|                                                                               | Mind and Body                                                              |
|                                                                               | Dualism and Inequity                                                       |
|                                                                               | Culinary Arts as Fine Art                                                  |
|                                                                               | Skills versus Knowledge                                                    |
|                                                                               | Culinary as Applied Science                                                |
|                                                                               | Hierarchies of Domination                                                  |

*RQ = Research Questions 1-3
### Table E4. Culinary Profession & Sustainability, Scholars Inquiry

<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think this program can be duplicated in an entire culinary program?</td>
<td>The Food Revolution and a Vision for Sustainable Culinary Arts</td>
</tr>
<tr>
<td></td>
<td>Defying Tradition</td>
</tr>
<tr>
<td></td>
<td>Opportunities Growing in the Foodservice Industry</td>
</tr>
<tr>
<td>(RQ1, RQ2, RQ3)*</td>
<td>A Revolution in Food</td>
</tr>
<tr>
<td></td>
<td>Chef Graduates as Change Agents</td>
</tr>
<tr>
<td></td>
<td><strong>Toward Sustainable Pedagogy</strong></td>
</tr>
<tr>
<td></td>
<td>Toward a Systems Perspective</td>
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<tr>
<td></td>
<td>Sustainability in the Food System</td>
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<tr>
<td></td>
<td>Power in the Food System</td>
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<tr>
<td></td>
<td>Toward Learning as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
</tr>
<tr>
<td></td>
<td><strong>Where Culinary Education Needs to Go</strong></td>
</tr>
<tr>
<td></td>
<td>Alternative Paradigm of Teaching and Learning in Culinary Edu.</td>
</tr>
<tr>
<td>Do you see the culinary profession as being inherently antithetical to sustainability?</td>
<td>Hierarchies in Modern Culinary Education</td>
</tr>
<tr>
<td></td>
<td>Master/Apprentice Ideology</td>
</tr>
<tr>
<td></td>
<td>Brigade System</td>
</tr>
<tr>
<td>(RQ1, RQ2, RQ3)*</td>
<td>Monarchical System</td>
</tr>
<tr>
<td></td>
<td>Patriarchal Command</td>
</tr>
<tr>
<td></td>
<td><strong>Equity Issues in Culinary Industry and Education</strong></td>
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<td>Gender Equity</td>
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<td>Class Equity</td>
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<td>Race, Equity, and Colonialism</td>
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<tr>
<td></td>
<td><strong>Dualism and Cartesian Cooking</strong></td>
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<tr>
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<td>Mind and Body</td>
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<td>Culinary Arts as Fine Art</td>
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<tr>
<td></td>
<td>Skills versus Knowledge</td>
</tr>
<tr>
<td></td>
<td>Hierarchies of Domination</td>
</tr>
<tr>
<td></td>
<td><strong>What do you see is the present and potential role of the chef and other foodservice positions in fostering a more sustainable future?</strong>&lt;br&gt; (RQ1, RQ3)*&lt;br&gt;</td>
</tr>
<tr>
<td></td>
<td>Defying Tradition</td>
</tr>
<tr>
<td></td>
<td>Opportunities Growing in the Foodservice Industry</td>
</tr>
<tr>
<td></td>
<td>A Revolution in Food</td>
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<td>Chef Graduates as Change Agents</td>
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<tr>
<td></td>
<td>Transformational Opportunities</td>
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<td></td>
<td><strong>Culinary Pedagogy as Sustainability</strong></td>
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<td></td>
<td>Beyond Master/Apprentice Ideology</td>
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<td>Beyond Recipe-based Pedagogy</td>
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<td>Beyond Universal Truths</td>
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<td>Beyond Colonial Invasion</td>
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<td>Sustainability in the Food System</td>
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<td>Power in the Food System</td>
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<td></td>
<td>Toward Learning as Sustainability</td>
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</tbody>
</table>
## Interview Item

<table>
<thead>
<tr>
<th>Concept</th>
<th>Interview Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
<td>Tangibility &amp; Action</td>
</tr>
<tr>
<td>Integrating Transformational Learning</td>
<td></td>
</tr>
</tbody>
</table>

### What are the potential implications? What actions are needed and what tools? How would you recommend gaining those tools? (RQ1, RQ2, RQ3)*

<table>
<thead>
<tr>
<th>Concept</th>
<th>Interview Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Food Revolution and a Vision for Sustainable Culinary Arts</td>
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</tr>
<tr>
<td>Defying Tradition</td>
<td></td>
</tr>
<tr>
<td>Opportunities Growing in the Foodservice Industry</td>
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<tr>
<td>A Revolution in Food</td>
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<tr>
<td>Chef Graduates as Change Agents</td>
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<tr>
<td>Transformational Opportunities</td>
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<tr>
<td>Toward Sustainable Pedagogy</td>
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<td>Toward a Systems Perspective</td>
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<td>Sustainability in the Food System</td>
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<td>Power in the Food System</td>
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<td>Toward Learning as Sustainability</td>
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<tr>
<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
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<tr>
<td>Tangibility &amp; Action</td>
<td></td>
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<tr>
<td>Integrating Transformational Learning</td>
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</table>

### Table E5. Workshop Participant Items

<table>
<thead>
<tr>
<th>Concept</th>
<th>Interview Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dualism and Cartesian Cooking</td>
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</tr>
<tr>
<td>Mind and Body</td>
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</tr>
<tr>
<td>The Food Revolution and a Vision for Sustainable Culinary Arts</td>
<td></td>
</tr>
<tr>
<td>Transformational Opportunities</td>
<td></td>
</tr>
<tr>
<td>Culinary Pedagogy as Sustainability</td>
<td></td>
</tr>
<tr>
<td>Beyond recipe-based Pedagogy</td>
<td></td>
</tr>
<tr>
<td>Beyond Universal Truths</td>
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<tr>
<td>Beyond Colonial Invasion</td>
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<td>Beyond Dualism</td>
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<td>Toward Sustainable Pedagogy</td>
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<tr>
<td>Toward a Systems Perspective</td>
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<tr>
<td>Toward Learning as Sustainability</td>
<td></td>
</tr>
<tr>
<td>Pioneering a More Sustainable Future in Higher Education</td>
<td></td>
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<tr>
<td>Tangibility &amp; Action</td>
<td></td>
</tr>
<tr>
<td>Integrating Transformational Learning</td>
<td></td>
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<tr>
<td>Dualism and Cartesian Cooking</td>
<td></td>
</tr>
<tr>
<td>Mind and Body</td>
<td></td>
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<tr>
<td>Skills versus Knowledge</td>
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<tr>
<td>Culinary Pedagogy as Sustainability</td>
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<tr>
<td>Beyond Recipe-based Pedagogy</td>
<td></td>
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<tr>
<td>Beyond Dualism</td>
<td></td>
</tr>
<tr>
<td>Toward Sustainable Pedagogy</td>
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</tbody>
</table>

(RQ1, RQ2)*

337
<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have any changes in perspective after attending this program?</td>
<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
</tr>
<tr>
<td>(RQ2, RQ3)*</td>
<td>Tangibility &amp; Action</td>
</tr>
<tr>
<td></td>
<td>Where Culinary Education Needs to Go</td>
</tr>
<tr>
<td></td>
<td>Alternative Paradigm of Teaching and Learning in Culinary Edu.</td>
</tr>
<tr>
<td></td>
<td>Dualism and Cartesian Cooking</td>
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<td></td>
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<tr>
<td></td>
<td>The Food Revolution and a Vision for Sustainable Culinary Arts</td>
</tr>
<tr>
<td></td>
<td>Defying Tradition</td>
</tr>
<tr>
<td></td>
<td>Transformational Opportunities</td>
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<tr>
<td></td>
<td>Toward Sustainable Pedagogy</td>
</tr>
<tr>
<td></td>
<td>Toward a Systems Perspective</td>
</tr>
<tr>
<td></td>
<td>Toward Learning as Sustainability</td>
</tr>
<tr>
<td></td>
<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
</tr>
<tr>
<td></td>
<td>Tangibility and Action</td>
</tr>
<tr>
<td></td>
<td>Integrating Transformative Learning</td>
</tr>
<tr>
<td>What experiences have connected for you in this program?</td>
<td>Culinary Pedagogy as Sustainability</td>
</tr>
<tr>
<td>(RQ1, RQ2, RQ3)*</td>
<td>Beyond Recipe-based Pedagogy</td>
</tr>
<tr>
<td></td>
<td>Beyond Universal Truths</td>
</tr>
<tr>
<td></td>
<td>Beyond Colonial Invasion</td>
</tr>
<tr>
<td></td>
<td>Beyond Dualism</td>
</tr>
<tr>
<td>How have they connected?</td>
<td>Toward Sustainable Pedagogy</td>
</tr>
<tr>
<td></td>
<td>Toward a Systems Perspective</td>
</tr>
<tr>
<td></td>
<td>Toward Learning as Sustainability</td>
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<td>Pioneering a More Sustainable Alternative Future in Higher Edu.</td>
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<td>Tangibility and Action</td>
</tr>
<tr>
<td></td>
<td>Integrating Transformative Learning</td>
</tr>
</tbody>
</table>

*RQ = Research Questions 1-3
### E6. Wellness & Sustainability Chef Graduate Items

<table>
<thead>
<tr>
<th>Interview Item</th>
<th>Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was it like to be in the Wellness &amp; Sustainability Concentration? (RQ1, RQ2, RQ3)*</td>
<td>The Food Revolution and a Vision for Sustainable Culinary Arts&lt;br&gt;Defying Tradition&lt;br&gt;Opportunities Growing in the Foodservice Industry&lt;br&gt;A Revolution in Food&lt;br&gt;Chef Graduates as Change Agents&lt;br&gt;Transformational Opportunities</td>
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<td>Culinary Pedagogy as Sustainability&lt;br&gt;Beyond Master/Apprentice&lt;br&gt;Beyond Recipe-based Pedagogy&lt;br&gt;Beyond Universal Truths&lt;br&gt;Beyond Colonial Invasion&lt;br&gt;Beyond Dualism</td>
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<td>Toward Sustainable Pedagogy&lt;br&gt;Toward a Systems Perspective&lt;br&gt;Sustainability in the Food System&lt;br&gt;Power in the Food System&lt;br&gt;Toward Learning as Sustainability&lt;br&gt;Pioneering a More Sustainable Alternative Future in Higher Edu. Tangibility and Action</td>
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<tr>
<td>Where Culinary Education Needs to Go&lt;br&gt;Alternative Paradigm of Teaching and Learning in Culinary Edu.&lt;br&gt;Opportunities for Transformational Learning</td>
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<tr>
<td>Integrating Transformational Learning</td>
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| Did you have any changes in perspective after attending the program? | The Food Revolution and a Vision for Sustainable Culinary Arts<br>Defying Tradition<br>Opportunities Growing in the Foodservice Industry<br>A Revolution in Food<br>Chef Graduates as Change Agents<br>Transformational Opportunities |
| Were there any key moments for you? | Culinary Pedagogy as Sustainability<br>Beyond Master/Apprentice<br>Beyond Recipe-based Pedagogy<br>Beyond Universal Truths<br>Beyond Colonial Invasion<br>Beyond Dualism |
| What experiences were meaningful to you? | Toward Sustainable Pedagogy<br>Toward a Systems Perspective<br>Sustainability in the Food System<br>Power in the Food System<br>Toward Learning as Sustainability<br>Pioneering a More Sustainable Alternative Future in Higher Edu. Tangibility and Action |
| How were they meaningful? | Integrating Transformational Learning |
| Were there any connections from these experiences in the program to your life or profession? (RQ1, RQ2, RQ3)* | |

*RQ = Research Questions 1-3
Table E7. Coding Results: Themes, Subthemes, Respondents & Frequencies

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*Legend: SI = Scholar-Informant; WP = Workshop participant; CG = Chef Graduate*
## Table E8. Ten Principles, Approaches, and Strategies for CSE

<table>
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<tr>
<th>Principle</th>
<th>Barrier to Sustainability</th>
<th>TL Approaches</th>
<th>Examples of Strategies for Educators</th>
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<tbody>
<tr>
<td>1. Beyond master and apprentice toward facilitating cooperative and experiential learning</td>
<td>Master and apprentice tradition, Brigade system and reductionism, Conformity over critical thinking, Neoliberal influences, Labor force mindset</td>
<td>Cooperative learning, Learner centered facilitator, Teachers as participants</td>
<td>Setting up meaning-making experiences, Applying learner directed project-based learning, Providing opportunities for critical questioning</td>
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<tr>
<td>2. Beyond recipe-based pedagogy toward knowledge-rich thinking and creative questioning</td>
<td>Recipe-based pedagogy, Conformity over critical thinking, Favors skills over knowledge, Reinforces inequality and classism, Does not perturb current systems</td>
<td>Cognitive learning, Skill to action, Civic engagement</td>
<td>Using critical thinking exercises, Allowing creative problem solving, Conducting sensory analysis, Guiding problem-based learning, Promoting active citizenship, Framing skill building as action-taking</td>
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<tr>
<td>3. Beyond universal truths toward critical reflexivity and reflective practice</td>
<td>Positivist frameworks, Dualist, Transmissive learning, Transactionary learning, Banking education, Technocratic neoconservatism</td>
<td>Critical and emancipatory learning, Reflective practice, Life-long learning, Affective learning</td>
<td>Encouraging critical reflection and reflexivity, Extend to reflective thought on and in action, Host mindful sensory exercises, Prompt self-evaluations</td>
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<tr>
<td>4. Beyond colonial invasion toward decolonization and re-inhabitation</td>
<td>Education for building a workforce economy, Cultural invasion, Colonization and indoctrination, Eurocentric standards and expectations, Capitalist driven industrial cooking and eating</td>
<td>Affective learning, Localization, community regeneration, Comida-eating in community</td>
<td>Formalize time for situationality and sensory reflections, Encourage novel questioning, Incorporate community regeneration</td>
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<tr>
<td>5. Beyond dualism toward holism and participation</td>
<td>Dualist and reductionist modern western view, Mechanistic and classical business structures and power, Modern education, Modernist view of detached labor, Positivist assimilation and acculturation, Independent from the human condition, Unchecked neoliberal capitalistic mindsets</td>
<td>Relational learning, Critical and self-evaluative, Ecological and participative learning, Holistic learning, Purposeful action</td>
<td>Develop learning exercises focusing on relationality, connectedness, interdependence, and adaptability, Assign direction, process and action-oriented resiliency activities</td>
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<tr>
<td>Principle</td>
<td>Barrier to Sustainability</td>
<td>TL Approaches</td>
<td>Examples of Strategies for Educators</td>
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<td>6. Beyond mechanistic views toward a living systems perspective</td>
<td>Dualist [lesser] and mechanistic views</td>
<td>Living and nested systems</td>
<td>Incorporate systems thinking into program design and lessons</td>
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<td>Fordism, Taylorism</td>
<td>Holistic perspectives</td>
<td>Encourage process thinking</td>
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<td>Favors skills over knowledge</td>
<td>Resilient learners</td>
<td>Schedule excursions for food system service learning</td>
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<td>EDU for social reproduction and maintenance</td>
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<td>EDU for labor and socialization</td>
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<td>7. Beyond unsustainable food systems toward just and sustainable food systems</td>
<td>Unsustainable food systems</td>
<td>Democratically participative</td>
<td>Utilize long-term evolutionary assignments</td>
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<td>Centralized</td>
<td>Environmental ethic, enduring</td>
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<td>Global corporate control</td>
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<td>Food businesses asserting power over communities</td>
<td>Socially, culturally, and spiritually healthful</td>
<td>Explore critical food system perspectives</td>
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<td>Food injustice</td>
<td>Direct and authentically connected</td>
<td>Foster community and place-based food system projects</td>
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<td>Community and civic oriented</td>
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<td>8. Beyond structures of power and domination toward power of relationality</td>
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<td>Interdependent</td>
<td>Ensure lessons emphasize living systems thinking</td>
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<td>Domination</td>
<td>Socio-ecological food justice</td>
<td>Have student explore being modes of existence</td>
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<td>Models of oppression</td>
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<td>Practice food system emancipation planning</td>
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<td>Having modes of existence</td>
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<td>Engage students in partnership work</td>
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<td>Elitism</td>
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<td>9. Beyond status quo programming toward transformative higher education</td>
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<td>Analyze and address issues in sustainability</td>
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