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presented by

Katherine Nault

has been accepted towards fulfillment
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ENGAGING YOUTH AS MEMBERS OF A FOOD ENVIRONMENTS COMMUNITY OF PRACTICE: AN ACTION RESEARCH STUDY ON FACILITATING PARTICIPATION AND LEARNING

By

Katherine Nault

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ABSTRACT

ENGAGING YOUTH AS MEMBERS OF A FOOD ENVIRONMENTS COMMUNITY OF PRACTICE: AN ACTION RESEARCH STUDY ON FACILITATING PARTICIPATION AND LEARNING

By

Katherine Nault

The purpose of this study was to explore the theory and practice of youth engagement in the context of food systems and minority health disparities in order to develop, implement, and evaluate a unique youth engagement project. There is a dearth of knowledge on our capacity to produce new forms of understanding on health disparities and food in collaboration with minority youth. I sought to build knew collaborative through the inclusion of youth as members in what I refer to as a "food environments community of practice" where together we collected and analyzed data on their local food environment. By systematically and iteratively exploring the role of participation and collaborative learning with the use of action research methods, this study attempts to understand how to best engage youth in process of inquiry in order to include youth perspectives to the practices of this field.

Valuable outcomes include insights into how youth perceive health and food systems research tools and practices, as well as how relevant these practices were to the lives of teens. Overall, this project was very limited in creating a greater shared youth/adult understanding on how environmental factors impact minority diet-related health disparities or the larger system in which these disparities are embedded. It also raises important questions about forms of participation, especially youth participation in all aspects of research design and analysis.

This thesis is dedicated to my parents, Karen and Tim H. Nault, who raised me to seek a life of learning and exploration. I would also like to dedicate this thesis to all of the young people in Michigan who are engaged in urban food systems activities. These youth have been my most valued teachers.

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1. INTRODUCTION

The diet-related health of Americans remains at the forefront of public awareness. The increased prevalence of obesity continues to gain the attention of both policy makers and educators, and the resources put towards interventions are growing in sum and diversity. Many look to our nation's young citizens as a forewarning of an impending public health crisis. A special report from the CBS Evening News series, *Where America Stands on Obesity* (Doane, 2010), illustrates this concern. One scene shows a Houston middle school gymnasium with children dressed in paper gowns atop examination tables surrounded by health professionals and cardiac diagnostic equipment. These children are being tested for abnormal heart functioning and other predictors of coronary heart disease. According to the U.S. Centers for Disease Control, the prevalence rates for childhood obesity have increased by over ten percent in the past thirty years (2008). This puts these children at a much greater risk for major metabolic and cardiac problems as adults. It is no surprise then that a large portion of current interventions are targeting the eating attitudes and behaviors of children and young adults.

What is telling from the CBS news story mentioned above is that the problem is not only related to the individual eating behaviors of children but also their home, school, and community environments (Doane, 2010). An early focus of this news story was to communicate the human experience of this so-called "crisis" through individual interviews with children that explore the tough personal and emotional impacts of childhood obesity. Out of fear and hope for a better future, each child in the segment makes the conscious effort through large strides to make major diet-related, health and life changes. Evidence that is possible for young people to make such a change for

despite their vulnerability puts the viewer at ease. But wait! Is it up to the child alone to change his or her outlook on life in order to make change diet and health behavior changes? Does this put an excessive amount of blame and responsibility on a child?

The scene then pans over a computer generated aerial view of a dense urban locale and zooms in on a single block covered in fast-food restaurants and convenience stores. The visual illustrates how this particular community has six of these types of food retail outlets for every one place that sells groceries. An obesity expert from Yale University states, "If you go to McDonalds today you can buy a quarter-pounder with cheese meal, that means with the large drink and the large french fries, for less than it costs to buy a salad and a bottle of water. There's something wrong with that picture" (Doane, 2010). The second half of this news segment echoes an increasingly popular perspective that looks to factors in a child's environment and community as having a strong influence on their diet-related health. It also alludes to that notion that larger structural and cultural factors are also at play.

We can no longer look to individual citizens as both the cause and solution of diet-related ill health. America's First Lady Michelle Obama takes a more environmental health perspective in her national public campaign against childhood obesity. *Let's Move,* sets the tough goal of "solving the epidemic of childhood obesity in one generation" and does employ personal responsibility change strategies through efforts like creating better consumer labels for parents and encouraging children to exercise (http://www.letsmove.gov/). But beyond individual educational approaches, this public awareness campaign is also intended to bolster federal, state, and local initiatives that

give parents and children better access to affordable healthy foods in schools and neighborhoods.

Healthy retail food options and their proximity to neighborhoods vary from community to community. The spatial location and density of certain types food retail outlets in neighborhoods and communities continue to be explored by scholars as potential environmental factors contributing to healthy or unhealthy eating behaviors (Morland & Evenson, 2009). It has been suggested that such differences may also be connected to the distinct economic and ethnic concentrations of these places (Block & Kouba, 2006; Powell, Slater, Mirtcheva, Bao, & Chaloupka, 2007) .

There may be connections between a lack of healthy food available in certain communities and the disproportionate prevalence of diet-related disease of minority populations living there (Sloane, D., Diamant, A., Lewis, L., Yancey, A., Flynn, G., Miller Nascimento, L., McCarthy, W., Jones Guinyard, J., & Cousineau, M.,2003). African-American and Hispanic children experience higher rates of obesity, asthma, and type 2 diabetes than white children (Centers for Disease Control and Prevention, 2008). Therefore, focusing on the interrelationships among food, health, and society are central to conceptualizing solutions to childhood obesity and diet-related health disparities. The nature of such a problem is complex and change is not only difficult to achieve but also difficult to measure when the desired outcomes include changing people's knowledge, behaviors, body mass index, as well as changing human service systems, policy, and social structures.

In the U.S. today, we are witnessing an increase in educational and programmatic interventions targeting these minority youth. Despite the increasing attention paid to

environmental factors, better education as a prevention strategy for the diet-related health problems of minority youth continues to be the dominant focus of many policy makers and experts. These youth food and health education programs, (which I will refer to as "youth and food programs" from here on) seek to transform a child's relationship with food in some way. Programmatic approaches represent a broad spectrum of educational and change goals. Some programs promote individual change by methods such as sharing nutrition information and assuming that the learner obtains and chooses to use the new knowledge (Rabe, Ohri-Vachaspati, & Steer, 2006). Whereas other programs attempt to achieve more holistic transformations by re-engaging youth with food through specific action and learning experiences (Clark & Foote, 2004).

The former approach is problematic because it reduces food and eating to narrow nutritional and behavioral components instead of conceptualizing minority diet-related health disparities as existing within environmental, economic, social, political, and cultural systems that interact and are interrelated. It also reduces the conception of youth and health as an existing deficiency in individual knowledge instead of taking a more strength-based approach to youth education where youth are seen as rich with assets and talents in need of nurturing. Youth should always be considered as competent citizens with valuable critical perspectives on the world they live in. When we situate current evaluations of youth and food programs within the theoretical literature on youth and human development we can see the strengths and weaknesses of particular approaches in our attempt to support the growth of young people into well-rounded, healthy and resilient adults.

Some newer youth and food programs that focus on individual youth development but also incorporate environmental, ecological, and systems perspectives are adopting the language and strategies of the so-called alternative agrifood movement (Kinder, 2008; Lautenschlager & Smith, 2007). This requires us to take our more integrated youth development framework a step further by including it in a conversation about collaborative ways to we are trying to create healthier food systems. In other words, as we witness the growth of youth and food programs that seek individual, environmental, and food system change it is important to gain a better understanding of how these programs fit into larger attempts to alter the ways we produce, process, distribute, purchase, eat, and think about food.

This comprehensive approach is also significant because it seeks to answer a growing call for researchers, educators, practitioners, and citizens to work collaboratively. The best way to truly understand the systemic nature of complex health and environmental problems in order to guide deliberative action towards change requires diverse stakeholder partnerships that maximize co-learning, co-teaching, co-collecting, co-constructing processes. (DuPuis & Goodman, 2005; Hamm & Bellows, 2003; Hassanein, 2003, 2008). Community-based participatory research models which include traditionally marginalized community members in the inquiry and decision making processes are becoming more common in projects that explore environmental and health disparities (Block & Kouba, 2006; Sloane et al., 2003). Some scholars note that problems still lie in the particular research tools and perspectives we use to measure community diet-related health and environments and that the purpose of including those

most affected should change how and what we measure (Oakes, Masse, & Messer, 2009; Odoms-Young, Zenk, & Mason, 2009).

1.2 Background to the study

Community practitioners and researchers who work on complex social problems are forced to rethink the traditionally distinct roles and methods in producing, sharing, and using knowledge. But how do we best go about achieving such feats? More importantly, how do traditionally marginalized youth fit into the picture? This thesis attempts to contribute to larger discussions that explore the theory and practice of youth engagement and development in the context of food systems and minority health disparities. By exploring the literature on youth food and health education, the food retail environments of minority communities, as well as scholar activist perspectives on social justice and civic participation, we begin to highlight gaps in our strategy to promote sustainable systems change. There is a dearth of knowledge on our capacity to produce new forms of knowledge and understanding on health disparities and food in collaboration with minority youth. The act and ability to do is assumed to be the teaching and learning method by which transformative change is influenced. The overall objective of this thesis is to test that assumption through the creation, implementation and evaluation a specific youth and food engagement project.

This thesis describes a university-community partnership project intended to transform the traditional research, teaching and learning roles of experts and youth in order to provide meaningful opportunities for youth to participate in inquiry and contribute to the knowledge and practices of this field. I sought to do so through their

inclusion as members in what I refer to as a "food environments community of practice". Drawing from theories on systems thinking, youth development, sociocultural learning, and food environments, I have developed, facilitated, and evaluated an engagement and research approach that introduced youth to the cultural practices of research practitioners in areas of community food security and food environments. The goals of this project were to:

1) Develop, implement, and describe an approach that attempts to effectively engage youth as partners in learning about their local food environment and community food security issues.
2) Evaluate my ability to engage the youth's interest and attention as well as facilitate social learning.
3) Document the youth's unique perspectives on community food security discourse and practices.

Therefore, this study both describes and evaluates a specific approach to a community-based research project. Since my intention was to study my practice, action research (AR) provided the most logical research method. I employed an AR method commonly used by teacher researchers to evaluate the levels and forms of sociocultural learning and participation that my approach supported, measure change, and adjust my plans and approaches throughout the project to maximize project goals and learning objectives.

My youth partners were provided many diverse opportunities to gain knowledge and skills through participation in the cultural practices of research including surveys, field observations, data analysis and displays. This project was successful at including youth in activities they are traditionally excluded from and sought to build both common assets of good community research practitioners and those competencies needed to assist youth in the healthy transition into adulthood. My approach required a shift away from of our traditional adult and child roles as active teachers and passive learner into more co-

teaching and co-learning responsibilities. My personal learning and transformation was most impacted by participation in this project. Valuable outcomes of this project include insights into how youth perceive issues on health and the food system especially with what tools and practices common to this field the youth find relevant to their lives and to their community.

On the other hand, my results show that this project was very limited in creating a greater shared youth/adult understanding on how environmental factors impact minority diet-related health disparities or the larger system in which these disparities are embedded. Thus, there is little evidence that this project promoted much civic development for my youth partners. Future projects should probably employ more dominant themes and concepts of existing structural inequalities and citizenship in the design of learning objectives and experiences. Results also show that the predetermined and highly structured nature of the food environments research model used limited the participatory nature of this project which requires critical reflection for me and others interested in facilitating these types of projects with youth. I also discovered that the sheer scope of my planned learning and development objectives were much too large for the short time span of this project. I tried to fit too many and too broad of learning experiences into a two month time frame which limited my ability to facilitate more in-depth learning on the topics and content my youth partners found most relevant.

This study concludes with a further reinforced notion that traditional education alone is not enough to promote community food security and solve the diet-related health disparities among minority youth. Our approaches must seek to transform the traditional roles of all participants, engage with those traditionally marginalized, in ways that

successfully integrate multiple forms of knowledge and perspectives. Such inclusive and participatory approaches are not without fault but can progress towards more ideal forms when the users increase their capacity to effectively understand and modify the types, applications, and outcomes of participatory processes. The results from this study make a valuable contribution for researchers and practitioners interested in developing future participatory food environments activities that better resemble interactive forms of participation. A major lesson learned for others interested in engaging youth in CFS and food environments is to ensure more meaningful opportunities for youth partners to make shared decisions on project development from the start including a project's research topics, questions, methods and purposes.

2. LITERATURE REVIEW

Even the most comprehensive and inclusive youth and food programs represent a fraction of what is needed to transform the systemic nature of minority food and health disparities. The Center for Disease Control and Prevention indicates that the problem of minority youth health disparities is a social justice concern and a systemic problem reaching far outside the confines or responsibilities of the individual. Their online feature on minority youth health disparities draws our attention to the multiplicity of factors facing the lives of minority youth and the different structural and sociocultural contexts that influence them. The website reads:

> Health disparities are preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health experienced by socially disadvantaged populations. These disparities are inequitable and directly related to the historical and current unequal distribution of social, political, economic, and environmental resources. In addition to race and ethnicity, health disparities also exist on the basis of sex, age, income level, geography, sexual orientation, disability, and special health care needs (http://www.cdc.gov/Features/HealthDisparities/).

A good place to start is by broadening our ability to explore and understand the system in which diet-related health disparities are embedded and recognize the potentially endless complexities of such a quest. This will provide a more comprehensive analytical framework to evaluate current youth and food intervention strategies.

2.1 Systems thinking

What is a system and how does one go about taking a systems approach to thinking? A system is a whole comprised of interworking and interdependent parts. Both the system and its parts must be explored in relationship to the system's

composition, purpose, and function (Midgley, 2000). According to Foster-Fishman, Nowell, & Yang (2007), changing the system is "an intentional process to alter the status quo by shifting and realigning the form and function of a targeted system" (p. 1). These authors also claim that most attempts at systems change have failed because we often employ a linear schema from problem construction to intervention to pre-determined, prescribed outcome. Conversely, systems work requires a process by which a partnership of diverse stakeholders construct "the problem that should be target for assessment and intervention" and define "who and what is contained within the system given the targeted problem" (Foster-Fishman et al. 2007, p. 202).

Therefore, a fundamental strategy in systems thinking and change is the concerted effort to include the worldviews of as many stakeholders in exploring the system. The major challenge in process is that each stakeholder within it perceives its composition, function, purpose, and problems differently. Food is technical, environmental, biological, economic, historical, social, political, and cultural. A farmer might be much more familiar and concerned with the production node of the food system where as a nutritionist is more knowledgeable on the consumption node. This information must be synthesized in a critical way that develops a better understanding of where the perspectives are analogous and where they diverge in order to comprehend how each can be utilized in the organization of knowledge and interventions (West, 2004). For some scholars, systems thinking is about both participation and learning (Foster-Fishman et al., 2007; West, 2004), or as Bawden (2005) puts it "learning about learning" and "knowing differently" (p. 169). For example, a nutritionist might determine that the problem of minority youth health disparities is related to a lack of important vitamins and minerals,

or an abundance of harmful chemicals, fat, or calories, which can be solved through adequate nutrition education and behavior change. Unfortunately, this reductionist view may only represent an aspect of a larger problem because it is blind to other factors of causality and does not view health as a complex problem nested within a system.

Systems thinking and learning requires one to move from such simple skills to the capacity to understand and use more complex cognitive tools. Through inclusion and participation, this perspective posits that stakeholders practice intellectual development that evolves from a dualistic or "absolute" knowledge state, to the exploration of experiential and perceptual knowledge, and ultimately leads to an evaluative and thoughtful stage of knowing (West, 2004, p. 64). As mentioned before, systems thinking, learning, and change necessitates a transformation in the traditional roles, capacities, and practices of all stakeholders. In other words, all people must develop socially and intellectually as a foundation for systems approaches. There is evidence that such inclusive and participatory approaches are occurring however we are still rather limited in how we understand systems and construct tools to produce knowledge on complex problems. Let us now take a look at some of the ways in which the problem of minority health disparities is being constructed.

2.2 Constructing diet-related health problems and solutions

2.2.1 The construction of food access disparities

One approach to problem construction that is receiving increasing attention by researchers is focusing on the built food environment and how this context impacts a neighborhood or individual's ability to access a healthy diet. Food access can be defined

by a number of factors such as race, socioeconomic status, geographic location, and transportation. Recent research on the relationship between diet and health has focused on food access in an attempt to better understand potential barriers in realizing a healthy diet (Morland & Evenson, 2009). Food access is often considered to be the interaction between external factors and the act of procuring food. These external factors include economic resources of monetary, credit, or entitlement benefits; the geographic proximity of corporate, private, and co-operatively owned food stores; and the specific modes of transportation used to travel to and from these stores. Powell et al. (2007) found that nationally, lower income neighborhoods had half as many supermarkets as whiter, more affluent neighborhoods, but were twice as likely to have many more small grocery stores and convenience stores. Other community based studies have shown similar correlations between race, income, and the type of available food sources (Block and Kouba, 2006; Sloane et al. 2003). Morland and Filomena (2007) found that predominantly white neighborhoods had four times as many supermarkets as a neighboring African-American community. Such findings suggest that race is an integral variable in food access.

Access to transportation is one of the most significant concerns in food access inequality (Shaw, 2006). Automobiles allow "for more choice in where and when" to shop and provide the opportunity for a person to "save money, find better quality foods" and purchase in bulk (Clifton, 2004, p. 407). According to a Minnesota study on food environment and access perceptions, Garasky et al. (2004) found that transportation was their research subjects' dominant concern. Those without a car not only pay more for groceries when they shop in the non-chain or small stores within their communities, they are faced with added transportation costs if they chose to shop elsewhere. Clifton (2004)

also discusses that people who do not own a car must spend extra amounts of time and energy using public or other forms of transportation. Those who walk or utilize public transportation are usually forced to make more frequent trips to the grocery store due to a limited amount of personal "carrying capacity" (Shaw, 2006, p. 232)

High concentrations of poverty, limited access to supermarkets, and poor transportation allude to the possibility of high rates of food insecurity. Morton et al. (2005) defines food insecurity as the "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire foods in socially acceptable ways" (p.102). When people cannot access food in such acceptable ways, due to the lack of economic resources or transportation, they often turn to emergency food sources such as the local food bank. Food distributed by food banks is often of questionable nutritional quality, and is only seen as supplementing ones diet since the rations rarely provide enough to feed a family over an extended period of time (Tarasuk & Eakin, 2003). Other supports for food security include food stamps and WIC food benefits. There is a growing concern that many food insecure Americans qualify for these benefits but do not participate in these programs. In a Minnesota study, only one third of food bank users utilized food stamps (Garasky, Morton, & Greder, 2004). In some cases, these benefits only lessen the severity of food insecurity and do not necessarily solve the problem.

These approaches to constructing the problem of diet-related health disparities provide considerable evidence that points to differences in environmental characteristics that act as barriers to achieving a healthy diet. There is strong support that the spatial location and density of food retail outlets are potential contributors to these disparities

(Morland & Evenson, 2009). Conversely, some researchers show concern that due to the very complex nature of this problem, food environments research frameworks and tools still fall short in developing solid conceptual and theoretical models (Oakes, et al., 2009). Without methods that are cultural relevant to the lives of minorities we fall short in honing in on the interdependence and interrelationship of environmental, behavioral and social variables affecting health disparities. In other words, food environments and food access research must still evolve to take a more systems approach.

2.2.2 The community food security perspective

Hamm and Bellows (2003) support this environmental, food access perspective in their discussion on a Community Food Security (CFS) framework and its implications for diet-related health interventions. Community food security is defined as:

> A situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice (Hamm and Bellows, 2003).

They argue that barriers to accessing a healthy diet are not only factors of physical environments and an individual's economic resources but that food and health problems are embedded within larger structural inequalities we have yet to truly understand. For example, Allen (1999) explains how CFS is situated within the historical context of federal food welfare programs for low-income people but that CFS pushes for a shift away from emergency food sources which are not believed to embody food "self-reliance" strategies (p. 119). She notes that the "key feature[s]" of CFS is "empower[ing] people" and promoting "self-determination" through such things as community economic planning and development (Allen, 1999, p. 119). Allen (1999) notes:

> Community food assessments of the food and agriculture system provide an opportunity for people to understand the forces that enable or constrain their access to resources... Democratic participation is merely formal without this type of understanding. Community food security offers the opportunity of developing a deep and democratic understanding of and action around food access, quality and control (120)

For a number of practitioners in the field of community food security (CFS), this represents a very complex, systemic problem which cannot be fixed with one solution and requires the "integrating or synthesizing [of] diverse data and opinion" (Kitchener, 1983 p. 223). Approaches to CFS research and practice should support a holistic and multi-dimensional view of food and health that is embedded within social, economic, and environmental realities (Allen, 2004). Some scholars have noted that this approach is dependent on the inclusion of those populations most affected, therefore these populations should be partners in the construction of community food security values and strategies (Allen, 1999). The question remains, how can we support more inclusive forms of CFS? What is the best way to include youth?

2.3 Integrating CFS into youth and food programs

2.3.1. Is more CFS education the answer?

Education, learning, and developing a greater shared understanding among diverse stakeholders seem to be fundamental strategies in the CFS approach. Webber and Dollahite (2008) explored the attitudes of low-income "food heads of households", they found that their research subjects did in fact have some views in common with CFS practitioners (p. 188). This included an awareness of existing disparities in quality and availability of fresh fruits and vegetables and the potential economic and social benefits of supporting local food production and consumption. On the other hand, they found a

lack of knowledge and concern for issues related to sustainability and non-market, value-based food economies that are believed to be imperative to attaining CFS. In response, they recommend that nutrition education efforts include these concepts as important learning objectives in conjunction with traditional approaches (Webber & Dollahite, 2008).

This is similar to the conclusion arrived at by Bissonnette and Contento (2001) who studied youth food attitudes and behaviors. These authors argued that adolescents are at the stage where they start forming their belief systems, therefore youth should be considered as the most important target community for food system education. They also suggest that the purpose of education should support youth in "developing solutions" to current and future food systems (p. 72). The authors used a psychosocial theoretical framework and a survey to understand youth's perspectives of the environmental impacts of food production to determine if their beliefs impacted their food choices. More than half of the youth surveyed claimed they ate fruits and vegetables, cooked their own foods, shopped for themselves on a regular basis, and shopped for their family. This supports the view that youth do have considerable influence over their personal healthy eating behavior and that of their families (Bissonnette & Contento 2001). The youth believed, abstractly, that organic food and local foods are better for the environment, however most stated that they did not intend to purchase these foods. Ideally, they believe that these foods should be available to all and labeled to promote healthy bodies and a healthy environment but "they did not feel it was their responsibility personally to purchase organic or local foods in order to improve the health of the environment" (p.78).

Since most did not have well-established beliefs related to socially just or environmentally sustainable food production practices, the authors conclude that education with the purpose of including youth as "problem solvers" must better inform them so that they understand not only their rights but also their responsibilities as food consumers (Bissonnette and Contento, 2001, p. 76).

2.3.2 Food democracy and food citizenship

There is little doubt that education is very important in dealing with health disparities and community food security. However, is education the only answer to supporting the inclusion of those traditionally marginalized in CFS initiatives? Or, as Hamm and Bellows (2003) suggest, do participatory, holistic, and systems approaches to problem construction and the development of long term solutions require a major shift in the roles and practices of educators, researchers, practitioners, and community members? This approach necessitates. This suggests that youth development efforts must focus on building youth's capacity to become conscious, motivated, and effective systemic change agents. The traditional model of education and service provision maintains the dominant role of the expert in assessing the problem and developing the necessary intervention strategies, and the passive role of the target population as learners who are expected to take on personal responsibility for behavior modification. Hamm and Bellows' (2003) CFS framework requires that practitioners take on a more facilitative role where they engage with communities in such a way where the practitioner and community are co-learners and co-producers of knowledge. Of course this assumes effective and successful

group collaboration is possible despite traditional power inequalities found in diverse stakeholder groups.

The emerging concepts such as "food citizenship" and "food democracy" attempt to deal with such power inequality problems through critical action and reflection, as well as by embracing the unavoidable nature of conflicting values and agendas in collaborative work (DuPuis & Goodman, 2005; Hassanein, 2003). Food citizenship is, on one end, the embodiment an idealized new form of food personhood in a new civic food culture where an individual knows their rights and exercises their responsibility to the common good (DeLind, 2002). On the more pragmatic end, food citizenship can be the mere practice and participation in the process of "food democracy" (DeLind, 2002; Hassanein, 2003; Hassanein, 2008). All in all, these ideas represent the ways in which people re-engage in the action of gaining control over the agrifood system and resituating food in values in ways that exist outside the traditional market economics (DeLind, 2002). Food citizens are often expected to reject both the commidification of food and the binary roles of producer/consumer. However, this is extremely difficult since such binary, hands off thinking has structured our relationship and understanding of food for at least an entire generation.

Constructing a new food personhood is no doubt an intensely value rich process. A true "reflexive politics" (Dupuis and Goodman, 2005, p. 359) of food democracy requires the continual contestation and recreation of our conceptualizations of such things as "scale", "local", "place", "community", and "access" that are embedded in particular contexts, histories, and narratives. Like systems approaches, Hassanein (2008) explains the essential components of food democracy and food citizenship to include:

"Collaborative action" or coalition building among differing interests and the "meaningful participation" of all collaborating stakeholders in "governing and shaping their relationship to the food system". She emphasizes that such political efficacy requires opportunities to produce and acquire knowledge on the depth and breadth of agrifood systems as well as the multiple roles food plays in our lives. Occasions for dialogue and deliberation around ideas and possible alternatives are also necessary to align and direct "toward the community good" that includes ethics of care for both human and non-human realms (Hassanein, 2008, p. 291). Production of knowledge in this sense supports "open-ended inquiry into particular real-life problems" that is dependent on the inclusion and participation of diverse citizens (Hassanein, 2003, p. 84). Again, the question remains as how do we best include youth?

2.4 Youth Development

Strengths-based, person-centered, and ecological perspectives of youth development dominate most youth programming in the United States today, especially among out-of-school informal education projects. Positive Youth Development (PYD) theories contribute to the most accepted approaches in youth programming and shift the focus towards youth's current and future abilities instead of attempting to remedy their perceived defects or shortcomings (Perkins & Borden, 2003). As explained by Pittman and Irby (1995), youth must have opportunities to gain skills, knowledge, and healthy attitudes, through capacity-building within all of the diverse domains commonly referred to as competencies by youth development scholars. These domains of competence

include: a) physical competence, b) emotional competence, c) cultural competence, d) employability, e) intellectual competence, f) civic competence, and g) social competence.

2.4.1 Youth and food programming

Situating youth and food programming in a PYD perspective provides a very basic guidepost that is helpful as we start to organize broad examples of learning objectives and experiences, as well as different evaluation approaches and measurements. Some of the first lessons we learn from using this theoretical framework are that disseminating nutritional information alone shows little effectiveness in supporting attitude and behavior change (Rabe et al., 2006). Instead, programs need to be experiential and engaging. We also learn how a narrow focus on the promoting the individual physical health of children limits our ability to build comprehensive youth assets that help youth be healthy and resilient throughout childhood and adulthood. Using PYD as a guidepost also highlights the need to deeply reflect on the purpose and nature of learning for healthy development. On other hand, PYD falls short in helping us to conceptualize how to situated environment causes of health disparities, social justice and CFS into youth and food programming.

2.4.1.1 Problematizing reductionist forms of youth and food programming

Early youth food programs that targeted health disparities often employed simplistic pedagogies and learning objectives. For example, (Rabe, et al., 2006) evaluated the effectiveness of Youth Expanded Food and Nutrition Education Program (EFNEP) curriculum in 3rd and 4th grade classrooms in Cleveland Ohio public schools.

They note the importance of this study since Youth EFNEP programs had not been evaluated since the 1970's. According to Rabe et al. (2006), these federally funded programs are:

> ...designed to provide nutrition education to disadvantaged urban youth. [EFNEP] is offered through schools as an enrichment of the curriculum, in after-school programs, through 4-H EFNEP clubs, day camps, residential camps, community centers, neighborhood groups, and home gardening workshops (1).

The learning objectives these authors evaluated were intended for youth to gain knowledge on the "Food Guide Pyramid, Food Groups and Nutrients, Planning and Choosing Nutritious Meals and Snacks, Nutrition Labels, and Food Safety" (Rabe et al. 2006). To test the curriculum, the authors used a self-administered survey which measured knowledge and self-reported behavior prior and following the intervention on both an experimental and control group. They discovered statistically significant changes in the youth's knowledge about the Food Guide Pyramid but no change in their self-reported behavior on food choices. The authors' note that these youth were only exposed to four sessions of nutrition education over a two to four week period which was most likely a major limiting factor. They also speculate that such limited content and the assumption that behavior change will immediately accompany the acquisition of new knowledge is unlikely to support lifelong changes.

Many in-school and out-of-school youth food programs seem incongruous with PYD theory because they employ a much too narrow focus on individual development within the physical health domain. These food and nutrition education programs attempt to modify the food attitudes and behaviors of youth but fail to influence important ecological factors such as a student's emotional or psychosocial health, as well as

interpersonal and community aspects (Ozer, 2007). For example, much of the literature on after-school garden programs considers these initiatives as intended to increase access to fresh fruits and vegetables and the predominant measurements of significant change are restricted to the program's capacity to increase participant's fruit and vegetable preferences and intake (Hermann, Parker, Brown, Siewe, Denney & Walker, 2006; O'Brien & Shoemaker, 2006), or the demonstration of nutritional knowledge (Poston, Shoemaker, & Dzewaltowski, 2005). This approach is problematic because it reduces food and eating to narrow behavioral and nutritional components instead of seeing food as existing within environmental, economic, social, political, and cultural systems that interact and are interrelated. It also reduces the conception of youth and health to a pathology or deficiency in individual knowledge.

A more in-depth approach to conceptualizing youth development can be found in Benson's (2006) 40 developmental assets. The domains of competence in PYD are valued, however this perspective supports the view that in order for youth to become healthy, resilient, and capable adults, the more 40 developmental assets they acquire, the less likely they are to engage in unhealthy risk taking behavior and are more likely to thrive despite challenging environments and situations (Benson, 2006). These developmental assets are divided into two main types, external and internal assets. External assets exist outside the youth and are often built through relationships with adults and the community. External assets are broken down into the core categories of "support", "empowerment", "constructive use of time", and "boundaries and expectations". Internal assets exist in or are actualized by the individual but are dependent on positive relationships with adults. The categories of internal assets include

"commitment to learning", "positive values", "social competencies" and "positive identity" (Benson, 2006).

Instead of illustrating each of the forty assets within these categories, I would like to draw the reader's attention to some of the specific developmental assets that lacking in youth today. In 2003, the Search Institute surveyed 150,000 youth on attitudes and behaviors related to forty developmental assets (http://www.search-institute.org/research/assets/assetfreq). About half reported experiencing external support from adult relationships. Around the same number of youth had values related to caring, and equality and social justice, positive identities that include the assets of personal power, self-esteem, and sense of purpose. As for social competencies, about half experienced cultural competence, interpersonal competence, and conflict resolution and resistance skills. What is even more alarming is that less than 30 percent of youth experienced external support in the form of positive family communication, caring neighborhoods, caring schools, adult role models, and parental involvement. The majority of these youth did not feel empowered by their community as valuable resources and had few opportunities for creative activities within their environments. Also, less than one third had a sense that they acquired planning and decision making abilities.

When considering both of the previously described youth development perspectives, change must occur at more than just the individual level to include development at more structural and cultural levels. It shows the need to build youth's confidence and social values, providing youth more opportunities for creative learning and purpose driven activities. We also need to work much harder at creating positive

intergenerational relationships, integrating youth in their neighborhoods, and youth voice in decision making and planning.

2.4.1.2 Examples of youth and food programs that build assets

There is some evidence that youth and food programs can support multiple domains of youth competence and building the needed assets for health. For example, the incorporation of leisure and recreational activities that is necessary to support youth's emotional competence, or their ability to cope with emotional and environmental stressors can be found in many youth and food programs. Building emotional capacity can also be seen as an effective strategy to promote competence within the other domains because youth are more likely to be engaged in and participate in programs that they find fun. If youth enjoy gardening as a leisurely and recreational hobby, there is no doubt that they are simultaneously improving their physical health through exercise. Fun and engaging programs can also enhance learning. For example, Clark & Foote (2004) evaluated a popular daylong workshop called "Kid's Chef School" intended to teach basic living skills such as cooking and food safety. According to the children participants, they enjoyed the opportunity to prepare and eat food along with the physically active games used to reinforce the programs content knowledge and skills. They reported liking the pencil and paper activities the least. The authors suggest the hands-on and fun experiential learning influenced the 69 percent increase in the youth's food preparation knowledge (Clark & Foote, 2004).

Teaching youth to think of food as a system is also starting to be a more common learning objective in these programs. Kinder (2008) discussed how Extension educators

and camp planners enhanced the food system education for 4-H youth who had little to no agricultural connections from family or community. These food system workshops were intended to explore food "production, management, and by-products of a specific product or commodity, coupled with a fun activity" (p.1). Similar to other workshops, these planners saw the importance of engaging youth in something they would enjoy and reinforcing learning with hands-on activities. One of the main learning objectives was for the youth to gain a foundational understanding of food and agriculture as a holistic system comprised of production, processing, distribution, and consumption nodes. Their approach to systems thinking included exploring the various roles humans play in transforming and moving food through these sub-systems. The youth were required to identify the various ingredients of trail mix, locate where the raw form of these ingredients were grown and then map the life of trail mix from the field to the processor, to the grocery store, to their home (Kinder, 2008). This activity and the use of trail mix in particular represents a useful teaching method in introducing youth to food system concepts because it aids the youth in visualizing how food is transformed from a raw commodity into an attractive and marketable food product. It also helped them to visualize how the process is dependent on diverse actors with specialized responsibilities in making the product as well as how nodes in the agrifood system are often located in particular geographic places because those places either have the appropriate growing conditions or processing and distribution resources.

Another learning objective of this workshop was to provide the youth with a greater conceptual understanding of the importance of food system jobs to local communities (Kinder, 2008) but the purpose and potential success of the methods used to

achieve this objective is unclear. Agricultural industry professionals were invited to speak to the youth in these workshops however there is no mention of exactly what they discussed outside of the details of their job or how the youth responded to these speakers. The youth were also required to discuss their parent's jobs and how they thought that these jobs were important to their community. Unfortunately, there is no discussion of how this activity was connected to the influence of food system related jobs to local community well being.

This workshop could however represent an attempt to support the PYD domain of "employability" by exposing youth to occupations that are vital to providing them the food they enjoy and need to sustain themselves. Youth need knowledge on diverse employment possibilities in order to make informed decisions regarding occupations they might excel at or jobs they would get pleasure from. Most importantly youth need to know the necessary education, experience, and skills needed to attain certain jobs. There also may have been a small attempt to support civic competence by highlighting the connections between local jobs and community well being which, if successful, could encourage youth to value the purpose of work as providing for the larger good (Huebner 2003). The importance of building assets for employability was a major motivation for youth participating in the 2007 Michigan Youth Farm Stand Project (Brander, 2008). The Youth Farm Stand Project is community-based program usually offered in after-school settings that focuses on "nutrition education, entrepreneurship, and sustainable local food systems" through the growing and selling of fruits and vegetables (Brander, 2008, p. 4). Brander (2008) found that Youth Farm Stand Project participants highly

valued the opportunity to make money, learn about the vocation of agriculture, and gain skills to prepare them for college.

2.4.1.3 What about the other competencies are needed for healthy development?

The majority of the previously reviewed studies only touch on one or two domains of PYD and few explicitly consider youth food programs as supporting cultural, social, or civic competencies. These domains are considered to be the most vital to interpersonal and intrapersonal asset development because they provide opportunities for youth to "work collaboratively with others for the larger good, and sustaining caring friendships and relationships with others" (Huebner 2003, p. 345). It also requires that youth practice planning and decision-making skills, empathy, and dialogue.

Latenshclager & Smith's (2007) study provides one of the best examples of how youth food programs can impact these social, civic, and cultural domains while also supporting the perspective of food as a system with interrelated sub-systems. They used focus groups to better understand food and gardening beliefs, knowledge, and values of both a non-participating control group and those who were active in the Youth Farm Market Project in Minneapolis/St. Paul. This informal out-of-school curriculum focused on exploring nodes within the agrifood system, learning about stewardship, and ethnic cooking by emphasizing the importance of experiential learning through hands-on activities such as gardening or meal preparation. Latenshclager & Smith (2007) discovered that those participating in this project were much more knowledgeable about seasonality, gardening techniques, where food comes from, nutrition, and cooking skills. YFMP youth also discussed how they were much more likely to try ethnic or different

foods and that since one of the central tenets of the programs curriculum is "empowering youth to respect others" the youth claimed that their favorite aspect of the program was "meeting and socializing with others" and valued that everyone actively respected each other despite any cultural or social differences (p. 253).

The previously discussed workshop, "Kid's Chef School", also provides an example of attempting, although somewhat unsuccessfully, to support the social and cultural domains of youth development since another important goal of this workshop was for the youth to gain table manners and the belief that these were valuable life skills. The youth learned how to arrange place settings and use the various types of dishes and silverware in accordance with the etiquette of a formal dinner party. The program also concentrated on other forms of formal and polite etiquette such as saying "please" and "thank you", how to politely pass food, and how to start conversations with people by inquiring about their interests, hobbies, and family (Clark & Foote 2004).

Despite the fun and recreational approach to this workshop, the evaluation showed only a 25 percent increase in the youth's understanding of food manners (Clark & Foote 2004). The evaluation of this workshop also helps draw our attention to our limited understanding of how learning occurs as well as our narrow view of the ultimate purpose or relevance of learning in these youth food programs. The authors suggested that the successful impact on youth's food preparation knowledge was because of the fun, engaging, and experiential nature of the program (Clark & Foote 2004), there is no doubt that this is an important factor of learning, however it is the form of knowledge and skills that cooking embodies that contributed to its success. Food preparation knowledge and skills cannot be understood outside the context of the kitchen or without opportunity to

practice measuring and combining ingredients or to observe the physical and chemical transformation that occurs through cooking and baking. With food preparation, it is the experience and context that reinforces the knowledge and skills.

The study showed that the workshop was not successful in significantly impacting the youth's knowledge on food safety or nutrition which is most likely due to the abstract nature of this content and skill purposes. It is difficult to situate food safety in a context that reinforces a youth's experiential learning unless they actually experience or witness the unwanted consequences of food safety failures such as injuries or cuts. It is even more difficult to apply nutrition education in an experiential way since the effects of poor diet are not often experienced until one's later adult years. In order for this knowledge to manifest as skills or attitude change it must be memorized therefore the content must be continuously introduced and reinforced by adults. Bissonette & Contento (2001) heed this concern when they conclude that communicating abstract ideas on the food system is not enough to support behavior change and that youth need experiential and critical learning opportunities to truly grasp the complex conceptual issues around food systems. Adults cannot expect significant changes if they simply preach the food system to youth.

Here, we find support for the need to focus on building youth's intellectual capacity. Programs that focus on this domain within youth development are very hard to come by in the literature on youth food programs. Some might consider school garden programs that are intended to be used to teach other academic subjects such as literacy, science, and environmental studies (Graham, Beall, Lussier, McLaughlin, & Zidenberg-Cherr, 2005) as supporting intellectual development. However there is little known evidence that school gardens are successful at enhancing academic performance. Ozer

(2007) explains that the majority of evidence supporting these types of impacts is anecdotal and only represents the perceived impacts according to teachers, administrators, and practitioners. She suggests that longitudinal studies are needed to assess test scores and grades to determine whether or not school gardens influence students' academic performance. Such a study makes sense and would be very valuable, however I question the equivalence of academic competence and intellectual competence. For example, it is possible for someone to excel at tests and get exceptional grades on class assignments and lack what Huebner (2003) identifies as the intellectual abilities such as critical thinking, creativity, problem-solving, and various "expressive skills" (p. 348). Youth are constantly bombarded with multiple messages on how they should live, think, and act from family, friends, teachers, or the media. Therefore, youth need ability to be critical of the information being disseminated to them because they.

I have illustrated some examples of youth programs that have expanded to include agrifood systems education and how such a food systems approach provides more opportunities to develop other domains of PYD including employability, civic, social, and cultural competencies. I have also shown how the use of a PYD framework can be a strategy when incorporating agrifood systems concepts into youth food programs. Conversely, there is a critical component of youth development, food, and health missing from these approaches. What if the most effective food systems teaching and engagement approach that supports all PYD domains but does nothing to change diet-related health disparities because "school and home environments" prevent youth from putting "learned knowledge into practice and improve their dietary behaviors" (Rabe et al. 2006, p.9)? Dealing with this dilemma lies in how we construct the ways in which

youth make healthy transitions throughout their childhood and in the contexts of their communities and cultures. From the literature we learn that youth need increased access to empowering opportunities as well as various opportunities to directly participate in their own growth and the positive transformation of their communities. This directly parallels the idea of empowering young people through civic development to become food citizens.

2.4.2 Integrating CFS and food citizenship into youth development

Youth empowerment and civic development are seen to go hand in hand. How exactly do we go about integrating CFS and civic development with youth development in a way that empowers youth? Education as means to change attitudes or values through the communication of abstract ideas of youth's rights and responsibilities within their neighborhood or community is not enough to support civic competence or a "civic identity" (Nicotera, 2008, p. 223). Instead, youth need to be included in the remaking of what citizenship and meaningful change means to their lives.

Community Youth Development (CYD) perspectives provide striking parallels to community food security and food citizenship. This more recent approach embraces the stance of PYD that youth are resources to be developed but goes beyond its emphasis on the individual to include an individual's interaction with "the multiple levels of his or her environment" (Perkins, Borden, Keith, Hoppe-Rooney, & Villarruel, 2003). Like community food security, CYD forces us to rethink youth as capable and competent citizens, not passive recipients of education or services. Engaging youth as partners in "community evaluation research" has been shown to support their intellectual, social, and

civic competence because it provides empowering opportunities for youth to participate in organizational development and decision making (Chekoway, Richards-Schuster, Abdullah, Aragon, Facio, Figuera, Reddy, Welsh & White, 2003). It also explicitly requires us to reconsider our adult roles and responsibilities in order to effectively facilitate the meaningful participation of youth in personal and community change (Checkoway, et al., 2003).

2.5 Participation and sociocultural learning

2.5.1 The role of participation in learning and development

The concept of participation metaphor is essential to systems and CFS approaches and is explicit in sociocultural theories on change. The sociocultural model asserts that learning should not be conceived of as the accumulation of skills and disembodied knowledge. Alternatively, development and learning is understood to be a multidimensional process of transformation through participation (Rogoff, Baker-Sennett, Lacasa, & Goldsmith, 1995). Many scholars support the notion that development cannot be understood outside the particular contexts in which it takes place. However, most approaches pay attention to either the individual or the context and not the interdependence of the two throughout the change process (Rogoff, 1993). Also, the focus is rarely on the individuals' and groups' *participation* within these contexts.

Sociocultural development takes place through participation in a cultural activity, or a historically situated practice that embodies particular discourses, sets of tools, norms, and values (Rogoff et al., 1995; Rogoff, 1993). Also, this approach posits that since change is supported at multiple levels including the individual, interpersonal, and cultural

or community "planes", transformation must also simultaneously occur at all of these levels (Rogoff et al., 1995, p. 46). These planes are considered to be mutually constitutive in the development process, thus one or two planes cannot influence change on another plane without simultaneously experiencing change.

Lave and Wenger (1991) discuss that participation is "situated learning" that occurs within a "community of practice", a group of people who are not always clearly defined as a group or even closely connected. Communities of practice do however share some sort of common understanding regarding the purpose and meanings of their actions and are motivated to act and learn together. Rogoff (1993) notes that it is the activities and events in which groups participate that should be the "unit of analysis". Part of the context for development is this community of practice, but it is also the actual activities, behaviors, meanings, and tools of that community that are often embedded within historical, political, and economic contexts. Development occurs as participants themselves change and change contexts by contributing to activities and practices.

2.5.2 Participatory approaches

Participatory research processes are gaining popularity as methods to include various stakeholders in inquiry, natural resource management (McCall & Minang, 2005), and educational and program development (Doyle & Krasny, 2003; Krasny & Doyle, 2002). Scholars note that such approaches are by no means the antidote to complex social and environmental problems, and may add more complications and limitations than traditional methods. The key is that these approaches are considered vital to human development and to our progression towards democratic and social justice ideals

(Cornwall, 2008). Ansley and Gaventa (1997) believe that the purpose of research should be to "strengthen participation in civic life", or that participatory and inclusive forms of research are necessary in promoting a democratic society (p. 46). Their work shows how common it has become for university and community institutions and stakeholders to develop unique partnerships that produce both knowledge and practical change in the name of "democratizing knowledge".

2.5.3 Problems with participation

Again we see that intellectual, social, and civic capacities are essential for participatory systems approaches. This is because such practices are contingent upon the meaningful interaction of multiple stakeholders, dialogue and deliberation, critical thinking, and empathy or understanding the experiences of others, in the continual and iterative processes of constructing problems and solutions (Midgley, 2000). Therefore, like inclusive CFS and CYD perspectives, learning as well as interpersonal and community development are often considered necessary factors in more ideal forms of participatory processes (Pretty, 1995). Despite the notion that participatory approaches are more socially just and democratic, users have found many limitations to achieving complete participation, as well as the common tendency for unintended complications to arise from such approaches. A major crux in participatory approaches is that despite the fact that the different types are guided by similar "normative assumptions", they embody multiple and diverse classifications and interpretations of what should be considered adequate participation (Cornwall, 2008, p. 270). For example, is inclusion of community members in consultative or informative roles considered participation because it is often

one of the more pragmatic and accessible methods (Pretty, 1995)? Or are consultative roles, as Arnstein (1969) suggests, a form of tokenism? Those who employ participative approaches have also discovered complications when attempting to achieve true forms of participation when balancing conflicting interests of funders, researchers, and participants seems impossible (Krasny and Doyle, 2003). Another common barrier to participation is time, money, and effort needed to build rapport and find mutually understandable and relevant discourses and language among experts and community members (Jupp, 2007; Miskovic & Hoop, 2006).

Although it is assumed that participatory processes are the most progressive methods towards more ideal forms of democracy and social justice, it is also extremely difficult to actually transform traditional power roles. Participatory attempts can end in increased frustration by those involved when those in more dominant power roles fail to take accountability for inequalities, further endangering the political efficacy of these approaches (Kirshner, Fernandez & Strobel, 2002). Collaborative action does not guarantee meaningful participation, even when diverse or underrepresented stakeholder groups do come to the table. McCullum, Pelletier, Donald, Wilkins and Habicht (2004) researched group dynamics and differing levels of participation during a community based food security planning session in New York. They discovered that the traditionally dominant group promoted the belief that the process was democratic, and yet continuously "brush[ed] over" concerns made by some minority and low-income participants (p. 214). Some also used "ideological language", like "the poor are apathetic" which had the effect of silencing further discussion by participants who could have been considered poor (p. 216). Ultimately, the process of defining the group's

relationship to the food system, the problems faced by the group, and the potential solutions was constructed by a select few empowered participants. In a follow up focus group, the traditionally underrepresented participants did not feel as though their voice was valued and that the desire for their inclusion was not genuine (McCullum et al., 2004).

2.5.4 Dealing with barriers to ideal forms of participation

Cornwall (2008) suggests that the best solution to these complications is for users of participatory methods to be increasingly competent in their ability to assess and clearly articulate the forms, purposes, and applications of participatory approaches during and after a particular project. Pretty (1995) provides a helpful typology intended to guide users of participatory methods in analyzing the actual level of participation that a project achieved against a sought after ideal. Table 1 describes this typology.

Table 1. Pretty's (1995) Typology of Participation

Typology	Characteristic of each type
Manipulative Participation	Participation is a pretense. People are represented on boards or councils but have no actual power.
Passive Participation	People participate by being told what has been decided or has already happened. It involves unilateral announcements by administration or management without including anyone's opinions. The information being shared belongs only to the external experts.
Participation by Consultation	People participate by being consulted or by answering questions. External agents define problems and information gathering processes, and so control analysis. Such a consultative process does not concede any share in decision making, and professionals are under no obligation to take on board people's views.
Participation for material incentives	People participate by contributing resources such as labor in return for food cash or other material incentives. Participants are not involved in any experimentation or learning. It is very common to see this called participation but people do not have any stake in prolonging the practices after the compensation ends.
Functional participation	Participation is used by external agencies as means to achieve project goals. People may participate to meet predetermined objectives related to the project. Such involvement may be interactive and involve some shared decision making, but tends to arise only after major decisions have already been made by external agents. At worst, local people may be co-opted to serve external goals
Interactive participation	People participate in joint analysis, development of action plans, or the formation and strengthening of local institutions. Participation is seen as a right, not just a means to achieve project goals. This involves interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. As groups take control of local decisions and determine how resources are used, so they have a stake in maintaining structures and practices.
Self-mobilization	People participate by taking initiative independently of external institutions to change systems. They develop contacts with external institutions for resources and technical advice, but retain control over how resources are used. Self-mobilization can spread if governments and NGOs provide an enabling framework of support.

Interactive and self-mobilizing types of participation better support normative assumptions on how to achieve social justice and empowerment. Functional types of participation promote collaborative efforts but still run the risk of exploiting marginalized partners. Unlike the passive and consultative forms of participation, exploitation is more covert and often unintended. Understanding the nature of this is very important when engaging in adult-child collaborations. Hart (1992) refers to this exploitation as "tokenism" and it occurs when project claims to be participatory by including the voices of youth but never have the opportunity to choose how their voice is used. In the worst cases of tokenism, youth voice is often manipulated to push an adult agenda (Hart, 1992). How do we avoid tokenism and less empowering forms of participation? Checkoway and Richards-Schuster (2003) assert that "[s]uch negative consequences of participation might be reduced by preparing young people and their adult allies more effectively for their roles in the process..." "but education and training are only one approach" (p.7).

2.5.6 Participatory learning in a community of practice

A sociocultural approach to learning and development provides an excellent framework conceptualized how systemic change occurs through participatory process as well as a model for evaluating the effectiveness of these processes in the field. Let us take a closer look at how sociocultural development works. Within a community of practice, individual change takes place as newcomers participate more and more in the community's activities, master its practices and are better prepared to engage in similar activities in the future (Lave and Wenger, 1991; Rogoff, 1993). Interpersonal and community change occurs because learning through participation is also a process of

negotiation and meaning making between 'oldtimers' and fellow 'newcomers' (Lave and Wenger, 1991). Rogoff (1993) asserts that progressive sociocultural development is dependent of the meaningful interaction between these different roles within the community and notes that these roles most often include the more knowledgeable expert(s) or adult(s), the less knowledgeable apprentices, and their peers. Existing knowledge and abilities are shared between the participants, and through participation, new forms of knowledge, new tools, and new practices are created. But, how can we measure such a complex type of change?

Sociocultural development perspectives force us to rethink our conceptualization of time and knowledge when measuring change and learning. Rogoff et al. (1994) draws our attention to our assumptions of time when we view that learning and development occurs through acquisition of knowledge and skills:

> The notion of acquisition rests on the assumption that time is segmented into past, present, and future, which are treated as separate. This yields problems of accounting for relations across time- problems that are often handled by assuming that the individual stores memories of the past, which are somehow retrieved and used in the present, and that the individual makes plans in the present and (if plans are stored effectively executes them in the future) executes them in the future. (p. 55)

This suggests that traditional evaluation methods such as surveys or focus groups that collect measurements of peoples' current abilities and knowledge for comparison at the pre- and post-intervention stages are inappropriate. Instead, time should be considered as a more intrinsic feature of continuous events. Rogoff et al. (1994) argue that with a different view of time, we refocus our notions of how knowledge exists and its purpose in development:

> [a]ny event in the present is an extension of previous events and is directed toward goals that have not yet been accomplished. As such, the present extends through the past and future and cannot be separated from them. When a person acts on the basis of previous experience, that person's past is present. It is not merely a stored memory called up in the present; the person's previous participation contributes to the event at hand by having prepared it. The present event is different than it would have been if previous events had not occurred (55).

Therefore, time is understood as cyclical as that we only retrieve past knowledge to accomplish tasks and events in the present and for the future.

2.6 Measuring and observing change

2.6.1 What exactly should we measure?

Measuring learning and development within this construct of time and knowledge is more difficult than it is linear, cause and effect assumptions about time where individuals as passive recipients of knowledge. Thus, it would be unsuitable to expect that distinct forms of knowledge or distinct perspectives can be easily retrieved by individuals and captured in any standard and clearly representable fashion. This is exactly what Jupp (2007) found in her study that engaged youth in creating intersubjective meanings on public spaces. By including youth as partners in the practice of research, she hypothesized that together they would create a new shared understanding of "place". Central to her approach was the stance that in order to empower youth we must value their unique knowledge on place. In order to try to capture this existing youth knowledge she began the project through participatory mapping and dialogue activities. To her surprise this activity failed to engage the youth in any rich dialogue and they often gave "monosyllabic and extremely negative responses" to her questions (Jupp, 2007, p.

2835). This event led her to question whether or not a collective and distinct form of local youth knowledge in fact existed and was not something waiting to be discovered or articulated by the youth.

Blending ethnographic field methods to implementing and evaluating her participatory research approach, it became clearer that she had not yet developed the type of rapport needed to engage youth in intersubjective meaning making. Greater forms of trust developed and she began to shift her focus on the knowledge that emerged from her participant observations, her interactions with the youth, and their interactions with other community members. This shift exposed Jupp (2007) to a multiplicity of knowledge that seemed to be more tacit than abstract. She concluded that the youth in fact did have many values around "place" through observable evidence in the activities and interactions that took place community house as opposed to exact statements provided by the youth. It clearly an important place they had to themselves to "joke", talk, and "cultivate friendships" away from home and the streets (Jupp, 2007, p. 2839). She also observed the youth taking many opportunities to help out with other community members in the community house like making tea, pushing wheelchairs and helping out with small children. She discovered that these particular forms of knowledge are embodied and emergent from the every day activities of individuals and the interactions of groups. Her study illustrates how creating new forms of knowledge both necessitates and is positively reinforced by interpersonal development. Calling for even greater critical and reflective thinking by the experts, Jupp (2007) continues to question to what extent is power truly transformed through participatory processes considering that this knowledge was interpreted by her alone. Instead, more intersubjective meaning making in knowledge

production could be harnessed to support greater collective action to improve the the community.

2.6.2 Participatory appropriation

This notion of meaning making is fundamental to the role of the expert practitioner in a sociocultural approach to learning and development. Rogoff (1993) summarizes how through "guided participation" the more knowledgeable adult in the case of youth development should actively facilitate the meaning making process:

> In guided participation, the notions of active participation and communication are central. Novices are active in their attempts to make sense of activities and may be primarily responsible for putting themselves in the position to learn. At the same time, their more mature partners can often more easily find effective ways to achieve shared thinking that stretch the less skilled partner's understanding. The process of communication requires people to seek a common ground of understanding from which to proceed, with extensions form the common ground requiring adjustments or growth in understanding (135).

Intersubjective meaning making also requires what Rogoff (1993) calls "participatory appropriation". This concept includes the propensity for a newcomer to value and use practices in the future but goes further to highlight that that change also occurs when they "make the process their own" and modify it for greater relevance and use to the broader community Rogoff, 1993, (p. 141). Guided participation and participatory appropriation are essential to all sociocultural learning processes within communities of practice.

Fusco's (2001) study included youth in "practicing a culture of science learning", where youth are engaged in the same learning communities as scientists and educators who negotiate among multiple meanings and constructions of reality (p. 861). She diverges from both traditional teaching and research roles and states, "I was not interested

in teaching science knowledge or in researching what students knew in science in the absence of creating a practice in which science and method were produced" (p. 864). In other words, it was important for her to develop shared meanings or purposes around shared behaviors for producing knowledge. Through dialogue and collages, Fusco (2001) guided the youth through dialogue on things in their lives that concerned them the most which included AIDS, adult stereotypes about black youth, and urban violence. From these discussions, the youth were able to brainstorm and plan ideas for helping their community to change what they believe were negative realities. Through the practice of research they explored the physical space and developed collective meaning around a neighborhood vacant lot. The youth recorded data and observations and shared oral histories of things that happened in that place in order to develop the most likely options for using that space. They also invited professional adults to speak and share knowledge and ideas which provided "access to a variety of professional discourses" and tools that the youth were able to further appropriate to their own research and planning.

Rahm (2002) uses this framework to focus her participatory evaluation on the emergent learning potential of out-of-school, informal youth garden education program. The main purpose of the garden was to provide a context that becomes the "source" "of learning and development", as well as multiple observable and interactive experiences where "science is not simply absorbed through 'contemplation' but instead comes into being through gardening" (p. 166). Like Fusco (2001), Rahm's (2002) approach to emergent learning helps to prioritize those forms of expert knowledge that are to be transmitted to youth novices. Specific content and topic areas of interest emerge from interactive participation and can be situated within things that the youth find relevant.

These two studies represent valuable examples of how participatory learning and research projects focus our attention to the ways in which youth find meaning and relevancy in scientific and community development practices, thus beginning to bridge disconnects in discourse and language. Where these cases fall short is providing evidence for change that transforms traditional forms of power and cultural practices at the community level.

Kirshner et al. (2002) employed participatory appropriation to their analysis of the empowering affects of youth engaged in a community of practice. As novices or newcomers master a communities tools and when they appropriate these tools for future use, it is believe that their social position changes from the margins to a more central and important role in the community (Lave and Wenger, 1991). Through the use of "interview with youth researchers, observation of program activities, and analysis of youth artifacts such as youth's written work and research documents" these authors discovered that the youth used research and critical thinking to question general assumptions about youth (p. 8). The process of participatory appropriation was in-fact empowering. It better situated youth to enter into "new avenues for individual participation in a social group" (Kirshner et al., 2002, p.4) as they gained more credibility from adults.

Krasny and Doyle (2002) evaluated The Garden Mosaics program by exploring learning communities in six U.S. cities that were comprised of university researchers, Extension educators, youth, and community gardeners. Extension educators learned Participatory Rural Appraisal (PRA) methods and facilitated youth in using these tools. The objective was to collect of information on the gardening practices of "ethnic minorities and recent immigrants in urban community gardens" with the intention to use

the data to further participatory methods with the youth and gardeners in the creation of a locally responsive action plan for the gardens (Krasny and Doyle 2002, p. 2). Their qualitative evaluation included data from interviews, focus groups, observations, field notes, and artifact review which included "educator reports, youth journals and essays, and e-mail communications" (Kransy and Doyle 2002, p. 3).

This approach is dependent on engagement which is consistent with the CYD construct which situates youth in particular social and environmental contexts that both influences and are influenced by them. In alignment with CFS approaches, it also supports adult practitioners as educators, facilitators, and co-learners. Also, this evaluation provides a richer picture of how this participatory approach transformed each member's role and perceptions. For example, educators viewed the purpose of the project as providing youth the opportunity to be "scientists" which shifts the perceived role of youth as passive recipients of services to competent researchers (Kransy and Doyle 2002, p. 5). Adult educators and community gardeners also reported that they developed stronger and more meaningful relationships with youth. Participation in the project also provided some educators with what they viewed as helpful strategies to more effectively coordinate and evaluate relevant programs supporting the notion that the increased efficacy of learning communities could transform the traditional practices of program development and implementation (Krasny and Doyle, 2002).

Conversely, the program was intended to target and benefit the youth stakeholders more than other stakeholder group, however they are not understood to be the main beneficiaries in this case. The authors discovered the results were not very relevant to youth and actually disproportionately benefited the university researchers and garden

activist. This brings us back to the need to evaluate what level or form of participation is needed to meaningfully engage youth in community food security learning and practice that supports transformational change on multiple levels.

2.7 The objective of this study

2.7.1 Understanding needs

From the literature we find that major learning needs of youth participating in community food programs include a greater knowledge about food as existing within a system, as well as increased civic, sociocultural, and intellectual capacities. This means that youth need practice in systems thinking in order to explore the agrifood system as made up of smaller components that are interrelated and interdependent in creating a larger functioning whole. They also need practice in inductive and deductive reasoning as well as dialogue for logical and critical argumentation. As for their civic development, youth should have values or attitudes that problematize the current food system and diet-related health disparities in relation to their own lives and their community. It also means that youth need to gain a concerted interest in acting to change this system.

I have established that sociocultural theories on change and development have shown the most formidable and practical methods for engaging youth in participatory learning. These theories assert that development must occur on multiple levels of the individual, interpersonal, and community. Also, it is theorized that this type of systemic change is dependent on learning through participation in a community of practice. On an interpersonal level, youth and adults need to develop stronger relationships in order to share knowledge and abilities. Through building rapport, adults can effectively guide

participation and provide opportunities for youth to appropriate cultural tools and discourses in ways that support intersubjective meaning making. Also, these processes should allow for a greater understanding of the unique perspective of youth in order for more knowledgeable experts to situate knowledge within what youth find relevant. It is assumed that engaging youth in a community of practice should change its cultural practices and traditional power structures because there is no doubt that the youth will make meaningful and innovative contributions through their participation, and move from the margins of society to more central roles.

I would like to now highlight the potential of food environments research as a way to engage youth in a community of practice and subsequent sociocultural development. As mentioned previously, some food environments and health behavior research is beginning to attend to the need for a greater understanding of how particular food environments influence the lives of African-Americans (James, 2004) by including citizens as partners in community-based research and intervention strategies around healthy food access (Block & Kouba, 2006). Despite its shortfalls (Oakes et al. 2009), food environments research does provide a promising model and research tools for engaging youth in community evaluation activities such as mapping food environments. These maps often display the density and spatial distribution of food retail outlets and guide inquiry into their qualitative and contextual characteristics that may enable or constrain residents' access to healthy food. Market basket surveys are commonly used in food environments research to explore the cost and availability of healthy food items that is often used to compare different neighborhoods and communities.

2.7.2 Project goals and research questions

My approach asserts that instead of simply educating traditionally marginalized communities in the entirety of CFS concepts, the attainment of a socially just and sustainable food system that optimizes the physical health of all people depends on the continued increasing capacity of all those involved to engage in and facilitate participatory forms of inquiry and program development. Accordingly, I have developed, implemented, and evaluated a community-based research project that engages youth in a food environments community of practice. I hypothesized that a sociocultural approach would be most effective at supporting ideal forms of participation. Also, it was assumed that an integrated CFS, CYD, and food environments framework would be successful at promoting the types of social, civic, and intellectual learning that would ultimately contribute to individual, interpersonal, and community change. At this point it is necessary to restate the goals of this project:

1) Develop, implement, and describe an approach that attempts to effectively engage youth as partners in learning about their local food environment and community food security issues.
2) Evaluate my ability to engage the youth's interest and attention as well as facilitate social learning.
3) Document the youth's unique perspectives on community food security discourse and practices.

In order to understand if these goals were achieved and identify gaps in my practice I tried to both measure and influence multiple forms of change occurring within various individual, interpersonal, and community domains I concentrated on the following research questions:

1) In what ways did my approach to research, learning, and development engage the youth's interest and attention? How did it enable or constrain multiple forms of learning and change for myself and my youth partners?

   a. What was the role of emergent learning and was is effectively supported?
   b. What practices do they find relevant?
2) What was my capacity to facilitate ideal forms of participation?
   a. What was the role of dialogue in participation and learning?
   b. Is their evidence of participatory appropriation?
   c. What type of meaning-making came from this experience?

3. METHODS

This chapter will explore the methods for achieving the aforementioned needs through carefully planned learning objectives and experiences, and employing an Action Research (AR) approach for implementing and evaluating learning, practice, and change. It also explains the methods by which I evaluated the process and practices in order to understand the roles and forms of participation and capture the unique perspective and contributions of my youth partners. First, it is necessary to introduce the reader to the study.

3.1 Background to the case

Our community of practice consisted of university researchers and outreach specialists who focus on a diversity of food system and food related community development activities. The university researchers and outreach specialists were previously engaged in a food environments study that sought to map the entire retail food environment of the city I have named Riverton. In 2000, this mid-sized, Midwestern city has a little over 100,000 residents, about 35 percent of which are considered ethnic minorities (U.S. Census, 2000). Thirteen percent of Riverton families were below the poverty level which was four percent higher than the national average and half of those people were African-American (U.S. Census, 2000).

Features of the larger study explored thematic maps created with Geographic Information Systems on neighborhood demographic compositions such as ethnicity, education, and homeowners showing that neighborhoods located towards the western

edges of the city had higher concentrations of ethnic minorities, as well as lower rates of homeownership and education. That study also documented all the different varieties of fresh produce and sugary drinks available in Riverton stores in order to explore any connections among neighborhood composition, health disparities, and the spatial distribution of healthy food. The study discussed here is a component of the larger study. This thesis describes the outreach and engagement project with youth in order to explore their unique perspectives and facilitate their participation in food environments research in order to develop ways for us to educate/engage with adult community members on local food environments.

I partnered with nine African-American youth ages 12 to 16 that attend "The West Riverton Community Center" (WRCC). Most of these youth live in multifamily housing and in neighborhoods with percentages of low-income ethnic minorities that are about forty percent higher than those in the adjacent suburban neighborhoods (U.S. Census, 2000). The WRCC is a neighborhood-based organization dedicated to promoting programs for youth and other community members. The purpose of the WRCC is to provide educational programs, job training, life skills, and recreational opportunities for the youth and community members. The board and staff at the WRCC have been interested in starting youth gardening activities for a number of years and have been unsuccessful in sparking the interest and engagement of the youth that regularly participate in other youth programs. Since other youth programs are related to social justice issues like youth leadership, health, peace, community service and change, I saw a good fit for food environment research situated in the context of health and social disparities. Program leaders often saw the greatest value of the program as providing job

experience because of the $100 incentive offered to each participant upon completion of the project. These youth were recruited by their youth program leader who chose potential participants based on those who did not already have a summer job.

3.2 Action research: ontological and epistemological foundation

My various roles in this study included education, facilitation and research, therefore an action research (AR) methodology was identified as the most appropriate research and evaluation approach. This methodology is grounded in the ontological position that knowledge is socially constructed. It also takes a critical theory approach which posits that these constructed realities are also embedded within different political, cultural, economic, ethnic, and historic contexts, and that for some, socially constructed realities and situations can be pathological or problematic if it supports and reinforces unjust power structures (Guba & Lincoln, 1994). Research is therefore intended to support an increase in the collective consciousness about such socially constructed and systemic realities so that they may be transformed and re-constructed (Guba & Lincoln, 1994). Research that is grounded in more critical approaches is often collaborative, like aforementioned participatory approaches and systems approaches, in that it seeks to include marginalized groups in stages of the research process that are traditionally excluded.

These forms are sometimes considered quasi-experimental because one purpose of research is to directly intervene in the system to both understand the system and to change the system (Kemmis & McTaggert, 2000). Positivist and other traditional research methodologies that seek scientific rigor and validity in objectiveness are

inappropriate for such critical forms of social research because the intervention process by the research practitioner must also be a central piece of inquiry. The nature of knowledge and how knowledge can be known is rather different in these forms because it comes into being and is transformed through the act of practice, therefore a rigorous structure is needed to guide the researcher in connecting thought and action in a way that corresponds with systems thinking. Action research is believed to do exactly that. Greenwood and Levin (1998) describe how action research and systems epistemologies are linked:

> Both rely heavily on a holistic view of the world. Humans are understood to exist only within social systems, and these systems have properties and processes that condition human behavior and are in turn conditioned by that behavior. Social systems are not mere structure, but are processes in continual motion. They are dynamic and historical. They are also interlinked, intertwining the individual social structures and the large ecology of systems into complex interacting macrosystems (71).

Not only are the individual, social, objective, and subjective elements of knowledge and reality constantly transforming, but they also exist in a dialectical or mutually constitutive relationship (Kemmis & McTaggert, 2000). Humans interact with, come to know, and are impacted by the world around them just as this world is influenced and impacted by humans. Ideally and in theory, when an objective reality is changed, the subjective interpretation of that reality should shift and visa versa. Action research is intended to help make these systems more open in order to re-engage people in their systemic nature through more democratic processes (Flood, 2001; Greenwood & Levin, 1998) which is consistent with the previously described community food security and community youth development perspectives. It also provides the most appropriate methodology for these

forms of research because its central tenet is to integrate these various dimensions in a dynamic and "reflexive" fashion (Kemmis & McTaggert, 2000 p. 578)

There are many different traditions and definitions of AR, this study draws mostly from AR done by teachers and educators and is defined as: the systematic inquiry conducted by stakeholders in "teaching/learning environments" to produce practical knowledge, and "develop reflective practice" (Mills, 2007 p. 5). These types of action research systematically and iteratively "test a particular intervention based on a prespecified theoretical framework" (Berg, 2004, p. 203). Most AR scholar practitioners describe the research process as continuous cycles or spirals. These steps are always influenced by what Kurt Lewin (1952) referred to as "reconnaissance" or as Kemmis (1998) called the "field of action" (as cited in Mills, 2007, p. 16). This field of action includes the general conceptual focus and purpose of the intervention, what is already known about the context and the problem, the specific desired outcomes, as well as the most appropriate means by which the desired outcomes are thought to be achieved. The field of action is also where the prescribed theoretical framework is situated. The AR process continues with the planning of the initial intervention strategy and methods by which data is to be collected. Planning is followed by action where the research practitioner not only intervenes to promote the desired change outcomes, but also collects observations and data.

The next stage, reflection and evaluation, provides the research practitioner with the opportunity to analyze the data against the field of action which then influences any revisions in the next stage of planning and the cycle continues. Accordingly, AR allows its users to effectively connect theory and practice in an iterative and emergent fashion in

order to evaluate change efforts and better understand the particular social system which they intend to influence. It was throughout these cycles, particularly in the reflection stages, where analysis of my individual learning experiences occurred and was measured. But before I discuss analysis methods I must explain the planning process.

3.3 Methods for planning

3.3.1 Learning objectives

I employed Tyler's (1949) classical approach to curriculum and instruction to structure and review my planning process. This approach posits that detailed learning objectives must include both the intended behavior changes of the learner as well as the content area in which these behaviors should occur. Tyler's (1949) two dimensional chart is useful for displaying both these dimensions and identifying exactly where learning is intended to take place. The left-hand column of these charts outlines specific content where new knowledge is shared or learned. The top row describes the general intended behavioral changes to occur at a particular level. "X's" identify whether or not the content and behavior represent an intended learning objective. Since my desire was to promote multiple forms of learning on multiple individual and interpersonal levels three different charts were developed to help me understand the scope of my approach. The first chart in Table 2 is concerned with the intellectual and civic development of youth on an individual level. The second chart in Table 3 displays individual learning objectives for developing a reflective practice for me as an adult expert/facilitator. Finally, the third chart in Table 4 explains the social learning that is intended for the group on an interpersonal level.

Table 2. Intellectual and Civic Development: Individual Learning Objectives for Youth

Content	Behavior			
	Understanding the basic concepts and ability to apply these concepts to existing knowledge	Understanding the purpose of tools practices used to produce and ability to collect information, interpret data, draw generalizations	Ability to identify and analyze assumptions and logical fallacies related to arguments and practices	Develop attitudes for supporting change
A. The Food System				
1. A commodity system made up of comprehensive and interdependent parts.	X			
2. The Retail and Consumption nodes of the food system.	X			
1. Cost as more than a monetary transaction that occurs a the point of purchase. The hidden costs of food	X		X	X
B. Food Environments and CFS				
1. Access	X	X	X	X
2. Diet related health disparities	X	X	X	X
3. Disparities in neighborhood composition and spatial distribution of food retail stores	X	X	X	
4. Social Justice	X	X		X

Table 3. Developing a Reflective Practice: Individual Learning Objectives for the Facilitators

Content	**Behavior**				
	Ability to successfully engage the youth's interest and attention in activities	Identify the ways in which youth draw connections among basic concepts, discourses and principles	Understand youths' unique perspectives and meanings attributed to the tools and practices	Identify and understand youth motivations	Understand our capacity to achieve ideal forms and identify any gaps
A. The Food System	X	X			
B. Food Environments and CFS	X	X	X		
C. Participation				X	X

Table 4. Social Development: Interpersonal Learning Objectives for the Group

Content	**Behavior**			
	Establish rapport	Ability to share individual knowledge and abilities with others in order to create individual and interpersonal change	Ability to dialogue and deliberate	Develop a shared understanding of existing disparities in the local food environment and potential strategies for change
A. The Food System	X	X	X	
B. Food Environments and CFS	X	X	X	X
C. Participation	X		X	X

3.3.2 Learning experiences

According to Tyler's (1949) model, once you have mapped out learning objectives you can start to develop potential strategies for actually accomplishing learning through "learning experiences". There are five general principles for learning experiences as means to achieve the learning objectives. These principles are very similar to the theories on learning presented in the literature. Table 5 shows these principles.

Table 5. General Principles for Learning Experiences

1	Learners need to practice the actual behavior that represents the intended change
2	The learner must find pleasure and fulfillment from practicing the behavior
3	The behavior must be appropriate for the current ability of the learner
4	Multiple experiences can achieve the same objectives
5	Specific learning experiences can achieve several objectives simultaneously

Tyler (1949)

Therefore, these principles were taken into consideration when developing our specific learning experiences. First, it is necessary to situate the learning experiences within the contexts and methods of the larger study on the local food environment. The general

purpose of this sub-study was to engage the youth in community-based research on the following questions:

1) What fruits and vegetables would West Riverton residents prefer to buy for eating and cooking?
2) Where can we find these items and how much do they cost?
3) Are there differences in the cost and availability of these items and differences between the stores in West Riverton and the adjacent suburb?
4) If we are able to answer and share these answers with West Riverton residents, what would they think?

I met with the youth three times a week for a month before the school year began and then approximately once a week for a month and a half after school was in session. Since guided participation requires advance forms of communication in order to develop shared understanding and meaning making, dialogue was a central method to my approach. Therefore, evaluating the role of the practitioner in effectively facilitating dialogue was also important. The results of discussions were often recorded on large flip charts and individual note taking.

The youth were introduced to food systems, community food security, and food environment concepts through lectures, visuals, and hands on activities for the first week of the project. The "Inquiring Minds List" was used as visual to describe steps in the food systems including: growing, harvesting, storing, transporting, changing (transforming or processing), packaging, marketing, retailing, preparing, and consuming (adapted from Wilkins & Eames-Sheavly, 2003). The youth were informed about the project and that we would be concentrating on doing research in the marketing, retailing, and consuming nodes of the system. In order to illustrate basic concepts on interdependence within the food system we examined the packaging of orange juice and string cheese and discussed any place names on the labels as well as the different

ingredients and the potential locations and form of these ingredients as they move through the food system. Another exercise explored the hidden energy costs of food by calculating the actual price of food by multiplying the retail purchase by a certain number (Cincera, 2005). Thematic GIS maps of the city of Riverton which included ethnic composition, home ownership, and retail food outlets created by project colleagues were used to introduce the youth to the larger food disparities study. I also showed the youth how to create thematic maps using the internet software program Google Maps, and had them identify and label the nineteen retail food outlets located within the geography boundary constituting Riverton's" "Westside", as well as those located within approximately 2 miles south of the Westside in "Franklin", an adjacent suburb . Decision-making on exactly where the Westside boundaries were located was a collaborative effort between the youth and the adult facilitators. This Google Map was also used by the group in the field to locate each store on our survey.

Next, the youth surveyed adult friends and family members to identify the top eleven fresh produce items adults would be most likely to purchase from a long list of all the different varieties of fresh produce available in Riverton. We called this our "Ideal Produce Checklist". We used these eleven items to create "The Fresh Produce Survey" displayed in Figure 1.

Figure 1. Fresh Produce Survey

Store Name and Address:_____

Store Type (Supermarket, Grocery, Convenience, Other):

_____

Item	1)Price/lb	2) unit price (one apple)	3) Price/ volume	4) Other	Final Cost
Yellow Banana					
Green Grape					
Onion (cheapest)					
Apple (cheapest)					
Sweet Potato					
Kiwi					
Blueberry					
Strawberry					
Blackberry					
Red Tomato					
Green Beans					

These surveys were stapled to homemade cardboard clipboards for ease of use. This tool was used to collect data on the availability and cost of these foods at nineteen local supermarkets and convenience stores. Price per pound was used as the unit of analysis for cost comparisons across stores. Since not all prices are labeled per pound, the survey required the youth to practice multiplication and division as well as some volume and weight conversions. This is explained further in the results because this activity provided experiences for dialogue and social learning. The Fresh Produce Survey also engaged youth in the practice of hypothesizing some observable factors that might contribute to food access or health disparities or any other observable information that would be useful to our study. We collaboratively developed a list of observational questions to guide our qualitative data collection. These questions were stapled to the opposite side of their cardboard clip charts. The questions I provided included:

What is the quality of the food?

1) Is it easy to get to the store by walking? By bike? By car?
2) What does the surrounding area look like? Does it look safe? Is it on a busy street? Is it a commercial area or a residential area?

These questions introduced the youth to some environmental characteristics commonly used in the field of community food security. The youth followed my lead and added the following questions:

1) Is the store clean?
2) Where is the food located?
3) Is the food stocked?
4) What types of things does the store advertise?"

The youth were also encouraged to include any extra observations they discovered during our research they thought would be important. The group split into two smaller groups and each visited separate stores in the interest of time. When all of the data were collected, two of the facilitators compiled it and created various displays for the youth to analyze during one, two and a half hour analysis session. Following a thirty minute individual analysis process, I guided a collaborative analysis activity using several different techniques used in facilitation and participatory workshops (Chambers, 2002; Rees, 2005), including concept mapping and a sticky wall for data organization, and drawing conclusions. From these results, the youth created various displays during our next two and half hour meeting and presented the results at a community forum. This analysis session, displays, and community forum will be explained in greater detail in the Results chapter. A final wrap-up workshop was held with the youth at the end of the project in order to engage the youth in reflections on the process and their experiences, as well as to go further in-depth into and validate some of my findings regarding their perceptions. This was accomplished using a recorded focus group, a questionnaire, and a sticky wall activity.

3.4 Methods for evaluation and analysis

These events and activities represented the units of analysis and were evaluated in an on-going, iterative and systematic process through the use of the Action Research

methodology described earlier. Throughout the acting and evaluation stages of each cycle I reflected on the following research questions:

1) In what ways did my approach to research, learning, and development engage the youth's interest and attention? How did it enable or constrain multiple forms of learning and change for myself and my youth partners?
    a. What was the role of emergent learning and was is effectively supported?
    b. What practices do they find relevant?
2) What was my capacity to facilitate ideal forms of participation?
    a. What was the role of dialogue in participation and learning?
    b. Is their evidence of participatory appropriation?
    c. What type of meaning-making came from this experience?

The specific methods used to answer these questions included participant observation, artifact analysis which included all of the documents produced individually by the youth or as a group such as surveys, work journals, flip charts, sticky wall, and concept maps.

Data from field notes, artifacts, questionnaire and transcribed focus group were systematically analyzed, coded for common and reoccurring themes, and triangulated throughout each AR cycle of the project. This data was also triangulated with the help from project colleagues and the youth programs leader. As evidence emerged I attempted to revise and improve my conceptualization of needed behavior changes and content areas (learning objectives), as well as the tools and approaches that were most effective for engagement, facilitating dialogue, and producing different forms of knowledge. Therefore, a detailed description of the process is summarized and situated within the Results section.

4. RESULTS

This chapter presents the findings from my research. I tried to both influence and measure multiple forms of change occurring within various individual, interpersonal, and community domains. The goals of this project were to:

1) Develop, implement, and describe an approach that attempts to effectively engage youth as partners in learning about their local food environment and community food security issues.
2) Evaluate my ability to engage the youth's interest and attention as well as facilitate social learning.
3) Document the youth's unique perspectives on community food security discourse and practices.

Each event and activity represents a unit of analysis which was measured in the context of the aforementioned research questions. It is not appropriate to describe each event and its evaluation since the ultimate purpose of my research questions and methods is to look at the interdependence of questions and situate the results within a larger framework. Iterative cycles of analyzing data from fieldnote observations, artifact review, the final wrap-up workshop and consultations with adult project peers structured my learning and behavior change.

The first part of this chapter examines the effectiveness of research practices and tools in engaging youth's interest and attention in order to promote learning. By systematically measuring engagement, I was able to gain a better look at the likelihood for a particular tool or practice in supporting learning such as emergent learning opportunities or through participatory appropriation. Most of the tools, practices, and approaches that positively impacted engagement and learning were reinforced and were further developed if possible. As I discovered those practices that were least effective in engaging my youth partners throughout the project, I tried to modify my approach or

simply let them fall from project priority in favor of tools and practices that were more successful at engaging the youth's interest and attention. Successful tools also were useful in framing my teaching. It may become increasingly evident to the reader that one of the main limitations of this project was that the scope of learning and participation objectives was too large for the length of the project, and that objectives were not in balance with planned learning experiences. I will show how this limitation represents a major theme that cuts across my results in various ways.

The second section of this chapter explores how the continued evaluation and enhancement of dialogue played a large role in our interpersonal learning and was an influential factor in promoting an increased capacity for us to engage in meaning making activities. My own personal learning and role transformation was more significantly impacted than my youth partners. This section of results describes these valuable insights I gained into how youth perceive the tools and practices of food environments and community food security. Specifically, I learned that my approach was limited in its ability to effectively communicate concepts related to health disparities and social justice. I also learned that the youth's main motivation for participating in this project was the monetary compensation we provided. How the youth attributed meaning to work sheds light on new youth and food system relationships and raises questions on how to best promote civic development.

The third section describes my evaluation on the nature and forms of participation this project supported in comparison to my ideal of "interactive participation". It also examines the role that participation played in how we developed shared knowledge on the local food environment. The final section of this chapter examines ways in which

community food security and food environments research can be made more relevant to the lives of youth and highlights their critical perspective on the field's tools and practices. Anything that is in quotations is an actual spoken or written quote from the youth retrieved from the youth's work folders, data collection material, flip charts, questionnaires, or focus group transcription.

4.1 Individual and interpersonal learning

4.1.1 The use of food environments research practices as tools for learning and engagement

I found that the youth were much more engaged and interested in the project when I was leading more hands-on activities than when I lectured. This suggests that food environments research tools such as maps and field note observations can be helpful in promoting learning. The nature of this project provided many opportunities for experiential learning but not all instances were successful in engaging youth's interest. For example, some of the more complex hands-on tools like the demographic maps were too difficult for the youth to understand the first time they saw them.

The youth were introduced to the larger study by examining thematic GIS maps. This activity was not very engaging because the maps were not appropriate to the developmental abilities of my youth partners. We spent approximately one hour working with these maps which proved to be an inadequate amount of time since these entire city scale maps were rather complex and difficult for most of the youth to read and understand accurately. They had trouble orienting census blocks or groups of blocks shaded to identify ethnic compositions to specific geographic locations known by the

youth such as places and streets. In other words, it was difficult for the youth to use the map as a representation of real places. Due to the inadequate amount of time, the complexity of these maps, and the youth's lack of interest in these particular maps, I do not believe that they were useful in helping illustrate differences in ethnic and income compositions in the city of Riverton. The youth did however become more knowledgeable and proficient with maps later in the project through the use of Google maps, therefore it may be beneficial to reintroduce these maps and concepts in a more youth-centered or user friendly way.

I found that the youth were more interested and engaged in more developmentally appropriate hands on activities like the Google Maps and "going out into the community to do research". Google Maps allowed the youth to quickly learn and use different labeling and features like zooming in and out on specific locations which made it much easier for them to understand and use the map as a representational tool. For example, the youth chose different symbols to label the different types of food retail stores in the area and also chose to input any text or price data into each food retail location on the map. From our final map, we could identify certain neighborhoods where residents are required to travel the longest distances to reach supermarkets and convenience stores. We also could visualize even greater distances from locales and the specific supermarkets with superior cost, availability, and quality. Most of the map's content was created by the youth without adult influence, however this content was limited and narrowly situated within the conceptual framework of cost and availability of fresh produce that was chosen by the adult facilitators.

Certain tools provided practical opportunities to reinforce the use and transferability of skills which is believed to influence the youth's capacity to appropriate these abilities in the future. The youth applied existing knowledge and abilities to novel activities and gained new knowledge at the same time. It is also important to highlight that through the collaborative act of exercising skill sets, the youth simultaneously contributed to the learning of other youth and adult facilitators by sharing and teaching.

The Fresh Produce Survey is an excellent example of collaborative learning and illustrates how diverse abilities or knowledge positively contribute to the group. In reference to Figure 1 on page 63 of this thesis, there are multiple columns included to document various types of price displays likely to occur to supermarkets and convenience stores. This served the function of saving time since they were not slowed down by trying to do the math in the store as a group. Apples provide a good illustration of why this is necessary, for example in a supermarket you can find loose apples variably priced per pound and bagged apples variably priced by package. The youth were required to record the cheapest price of each apple buying option and any pertinent information about each buying option including the net weight of the different bags or the size of loose apples. At convenience stores it was more common to find apples that were singularly priced. In this case, the youth were instructed to record if the apple was small, medium, or large in order to use our price per pound conversion formula related to individual apple size.

We returned to the car after we filled out this survey in the store and the group compared the data they recorded and collaboratively calculated the final cost of each item. Some of the youth were exceptionally good at figuring out how to convert and

calculate cost using weight and volume equations. Most times, these youth were much faster and more accurate than the adult facilitators. The youth who were more limited in their math skills appeared to improve throughout the survey process or continued to rely on others to figure it out. Almost all of the youth improved their ability to correctly and consistently fill out the necessary information on the survey and the in-car conversion and calculation sessions went smoother the more stores we visited. On one occasion, two youth who were less skilled at math contributed a different form of knowledge to the activity through their ability to understand and articulate the rationale for how these math skills would be important in grocery shopping on a budget.

Some might argue that the Fresh Produce Survey data collection activity only instrumentally supported skill development which is partially true when simply multiplying or dividing numbers. On the other hand, the complex conversion process was dependent on the youth's ability to comprehend its theoretical and conceptual practices, situate these concepts in the context of food retail prices and packaging, and employ or appropriate these practices in order to find the final cost. This type of intellectual capacity is the same form of higher order thinking needed in advanced mathematics and systems thinking.

4.2 Intersubjective meaning making

4.2.1 The role dialogue in early emergent learning and meaning making

Emergent learning was dependent on improving dialogue throughout the entire process and played an important role in our collective individual and interpersonal experiences. Developing dialogue required me to be critically aware of the changing

rapport I had with my youth partners and challenging the ways our roles traditionally interacted and communicated with each other. The learning objectives and experiences during first two weeks of the project focused more on content-based knowledge via lectures. In other words, our roles took on the more traditional roles of passive student and active teacher. Evaluating engagement forced us to observe and respond to the ways youth communicated their responses to us. For example, it was not uncommon for three to six of the youth to completely disengage at any given time during the first days of the project. They would put their heads down, color in their notebook, whisper to a neighbor, or text on their cell phones. There were also reoccurring moments when a youth would communicate in a more obvious fashion through body language like eye rolling or verbal groans and sighs which I believed were intended to tell us that they were annoyed or uninterested. These non-verbal and behavioral forms of communication were addressed by us as much as possible during group discussions and embraced to promote emergent and more relevant learning opportunities.

A fundamental area of content knowledge in my approach dealt with health and social justice issues in order to support civic development. Many of the initial activities and lectures were framed around neighborhood ethnic compositions and diet-related health disparities. I found that the learning experience did not adequately provide understandable, relevant evidence or ways to illustrate these connections. In contradiction to my intent, some of the initial learning experiences had the potential to influence harmful assumptions that reinforce racial stereotypes and social injustice. One of the youth hypothesized that diet-related health disparities were caused by African-American traditional foodways when she stated the possibility that "black people just

want", or choose to "eat more junk food than white people, like chips and fried chicken". I tried to use probing questions to transform these statements into a discussion starter but I was unable to get this youth or others to contribute or expand on this statement. It almost seemed as if they accepted this as matter of fact, were hesitant to discuss it further, or were simply annoyed by the discussion, so much so that I offered the youth the option to end the day's work on that note and they quickly agreed that that is what they wanted.

This instance deeply concerned me since it is a potentially harmful message that I felt needed to be either dispelled or explored. During the evaluation step of this AR cycle, I found this to be a very complex subject that raised more questions regarding appropriate content, tools, and methods than answers. This youth's perception of the existence of unhealthy African-American traditional foodways, or differences in junk food preference among African-Americans highlights the fact that there are still many unknown causal factors potentially contributing to diet-related health disparities.

This example also exposes the time and scope limitations of this project. Because I only had two months with the youth and pressure to produce an end product, I often found myself rushing through activities and missing many opportunities to take advantage of valuable emergent learning opportunities. The previous comments provide a valuable learning opportunity that could be explored as one single participatory research project where we took a more in-depth exploration into the "why" of one single take on health disparities.

Because of time and resource constraints, I often responded to emergent learning early on with more traditional forms of transmitting content knowledge which limited both dialogue and participation. For example, in response to the aforementioned

discussion, I tried to reinforce popular health, food and social justice work through websites of social justice and race focused youth food programs like The Food Project of Boston (http://thefoodproject.org/). I also showed a short YouTube video on the People's Grocery (http://www.youtube.com/watch?v=6IQKiquFrmA) which explored food access and health disparities in Oakland California through interviews of African-American residents and programs leaders. I hoped that these tools would effectively engage the youth and reinforce my continued reiterations that other factors such as poverty, access to education or health care, and even the changes in our national food system which makes less nutritious foods more available and attractive to all Americans, could be contributing to diet-related health disparities. I also tried illustrating how some people think it is an issue of fairness but that no one knows all of the causes for sure which is why good research is so important. To my surprise, the youth were observably uninterested in this video since they needed frequent redirection by the facilitators for talking, sleeping, or simply not paying attention. The youth were not eager to participate in subsequent discussions and the only two reactions to the film were "The music was distracting" and "I didn't know it got that cold in California".

4.2.2 Motivations and the meaning of youth work and monetary compensation

It became apparent to us early on that the youth were primarily motivated to participate in this project because of the monetary compensation that was offered. This topic emerged after adult facilitators challenged the youth's silence and resistance to participating in early project tasks by actively seeking their reasons for not wanting to engage. In other words, youth non-engagement turned into participation when the right

forms of dialogue opportunities were presented. In fact, discussions on this topic were the first that effectively engaged the youth in any sort of in-depth dialogue and they centered on the aspects of work that they valued. The following paragraphs describe the emergence and progression of this topic.

It was extremely difficult to get the youth focused and participating in our review of the results from our Ideal Produce Checklists in order to identify the top eleven items we would survey in the stores. The youth appeared to be very tired and many of them had their heads down on the table, or were talking with each other. I tried to keep the activity going but after giving them several reminders to focus and contribute I decided to stop that activity to ask the youth directly why they did not want to participate. Some claimed it was too early in the morning. Others very honestly admitted that they just did not want to do it or did not see the importance. At this point, I could see the possibility that I failed to adequately communicate the purpose of the project and the importance of their role. When I asked others if they understood what they were doing and what their role was, some noted that they understood that they were collecting data for someone else, which provided them a job and they needed a job and that was the extent of it. When I reinforced that they were in-fact employed as research assistants and asked if they valued the opportunity to work. To my astonishment, one youth asked who they were working for and when I told them that they were Michigan State University Junior Research Assistants, they acted surprised. Some expressed that when their friends asked where they worked they would tell them "MSU" and they thought this was really cool. Alarmingly, this suggested to us that the youth had not read and understood the consent

process and had been tuned out for a large portion of the first week of the project. On the other hand, it also showed us that they valued jobs that were considered cool.

I chose to re-frame some discussions around the food system and youth employability when other topics did not engage the interest of the youth. I found that, according to my youth partners, the most accessible job opportunities for teens in West Riverton are in food service, particularly fast food restaurants and supermarkets. The youth often considered these to be the least desirable jobs because they were "greasy", "dirty", and "make my face break out". Youth preferred jobs in other youth dominated social spaces like malls, clothing stores, or with children but were believed to be willing to work in retail food jobs because they paid well and which was the most highly valued aspect of work. Most of the youth agreed that they and other teens care about "making money" and "buying everything [they] want". When I asked why, they explained that it was a "particular lifestyle", and one youth agreed this was especially the case when they were in school "because you have to have all of the shoes and clothes".

The more I encouraged in-depth discussions on this topic and reviewed my fieldnote observations I found only a few examples of what could be evidence of the youth connecting civic values to youth work. One youth told us that in addition to being monetarily compensated he was motivated to participate because he was "A good Samaritan". For example, on many occasions I observed some of the youth stepping in to help the adult volunteers and staff discipline, comfort, and teach the very young children attending WRCC after school activities. This suggests that despite their preoccupation with money, the youth did care about working to help others for nothing in return.

4.3 Participation: ideal vs. results

4.3.1 The role of participation in producing shared knowledge on the local food environment

Community youth development theorists stress that youth should be full partners in the development of programs which exposes another weakness of this project. We, the adult experts, chose the project's conceptual model including the research questions, focal areas, and methods prior to any contact with the youth. This conceptual model which situated health disparities and social justice in the context of retail food environments, and the stance that new knowledge on the spatial distribution of available and affordable fresh fruits and vegetables would provide meaningful information for all stakeholder groups. According to the ladder of young people's participation provided by Hart (1992), this project could be considered "participatory" but one of "assigned" participation by adults where the youth's role was more informative and consultative. This was especially evident in the maps activities where expert definitions and constructions of the problem and analysis tools limited youth input.

Considering that the rigid structure of the map activities did not support a high level of ideal participation and did not effectively engage the youth in health and social justice issues, I decided to look for research tools that were more flexible and open in permitting the youth to contribute what data they saw as valuable to our research project. In my review and analysis of observational data which was conducted by the youth in conjunction with our survey on produce cost and availability, I discovered that the youth predominantly focused on variables and characteristics related to the perceived

environmental quality of food retail stores. Some common variables that the youth thought were relevant to our research included characteristics that appealed to or offended their senses such as the physical appearance of a stores exterior and interior, if a store was "very cold", or if it "smelled bad" and "had leaking trash" by the entrance. Other variables included the quality of the fresh produce. The youth were quick to point out when fruits and vegetables looked "nasty" if they were rotten or moldy. The youth also documented instances where certain types of produce were "well stocked" which, to the youth, indicated that a store either provided adequate or limited ability for a shopper to choose the best product. One of the more unique ways the youth perceived the food environment and store quality included positive examples of customer service and particular amenities that were either provided by the store or were located nearby such as gas stations, strip malls, and even fast food restaurants. These variables greatly impacted the youth's interpretation of the combined data during the concept map and sticky wall analysis activities.

The intellectual performance by the youth during the analysis activity was impressive considering the amount of data we collected, the very short amount of time we had to analyze it (two and half hours), and major distractions from the ten or more small children running around the community center and occasionally jumping on the laps of the youth for comfort and attention. It is from this activity where we really see how by doing science, it is made relevant.

Each youth, primarily on their own, attempted to make meaning out of a large amount of raw information that included the compiled data displays in order to develop the content and materials for a community forum intended to share our findings and

engage adult community members in a related discussion. From a review of each youth's data analysis materials following this activity, such as highlighted data, or written notes on raw data displays and separate pages I learned how some youth chose to focus on only one form of data such as the compiled final costs of Fresh Produce Survey, whereas others combined two forms like observational data with the graphs displaying the cost and availability of one produce item across all stores.

Following this individual analysis activity, I facilitated a collective analysis activity with the use of a mind map and sticky wall. Most of the youth contributed at least one thing they learned from their individual analysis session. The mind map illustrated the process and tools of data collection how "What We Did" translated into "What We Learned".

The concepts and themes that emerged from the mind map and dialogue were then written on large post it notes by one of the facilitators and randomly stuck on the wall for the youth to organize in rows, groups, or columns in order to help them theorize or draw some conclusions on possible connections among diet-related health disparities, differences in food cost and availability, and differences in the built environment. For example, the youth concluded that someone might choose a store in Franklin because these stores are cleaner, newer, and provide more available quality produce than stores in West Riverton. Positive characteristics of west Riverton stores were found in the many amenities offered near these stores including bus lines, gas stations, and fast food restaurants. It was clear for us as adult experts to interpret this as evidence of a disparity between the food environments of these two communities however, despite our attempt to start such a conversation, the youth did not view this as an inequality or social justice

issue. Instead, the youth decided to present our results on the cost and availability of fresh produce between West Riverton and Franklin in an objective fashion by situating the data in the context of hypothesized consumer shopping preferences based around their observations on the quality of the built food environment.

At this point in the project time was running short, the youth appeared to be growing tired and increasingly disinterested in participating, therefore I did not further encourage critical dialogue regarding the findings from our analysis session. These findings provide an excellent opportunity to support deeper reflection on what causes differences in the built food environment and engage the youth in questioning whether or not those differences are fair and just? It also provides an opportunity to discuss how youth perceive the idea of consumer preferences and consumer driven markets. Instead, emergent learning took a back seat or funding deliverables and we were forced to spend our time planning and preparing to share our data with adult community members.

We held the community forum to present our results at the WRCC during weekday evening hours. Forum participants included: parents and extended family members; other youth not involved in our project; WRCC's executive director; WRCC staff; and university faculty members involved with the larger food disparities study. Data on cost and availability was described by the youth with the use of poster size bar and line graphs that they created in conjunction with the spatial data provided by their Google map. They also used a poster which explained the research process and included photos of the concept map and sticky wall analysis activities since the youth's conclusions on shopping preferences were predominantly drawn from their observational data during that analysis session. This presentation immediately triggered a discussion

amongst the adult community members; they agreed that the majority of West Riverton stores are of poorer quality, have less available quality produce, poor customer service, and it is because of these factors that they are willing to travel longer distances and pay more money for food at stores located in the suburb of Franklin. This discussion evolved to explore how these preferences and behaviors reinforce existing economic disparities because much-needed local dollars are spent outside the community. This was the only time that social justice issues were brought up by people other than the adult facilitators during our study.

4.3.2 The changing social position of youth through participation

As I became better skilled at facilitating opportunities for the youth to make decisions, my approach more closely resembled the ideal of "interactive participation". The observational data activities provided the youth the flexibility to contribute their own reflections on the built food environment. Since they were able to use this data in our analysis session, they were able to attain greater control over what type of results they felt were relevant and should be integrated into the food environments model chosen by the adult experts. This collaborative form of knowledge production was positively reinforced by adults at the community forum because they responded directly to the models and hypotheses the youth offered. It suggests that the youth's perspective better represented the actual food environments of West Riverton and Franklin, as well as how the residents interacted with this environment. For example, the food retail environment in this community is rather different from other inner-city core neighborhoods which were more drastically affected by post WWII development including the relocation of the white

middle class and the redlining of inner-city supermarkets (Eisenhauer, 2001). The landscape of this part of Riverton is characteristic of the recent shift in land use practices that separated commercial from residential zoning. West Riverton is the city's home to the first "big box" stores and strip malls. But what is interesting and clearly observable by the youth are disparities in the poor physical and environmental quality of these stores versus the newly built stores in the adjacent suburb. Dramatically aging commercial retail districts as embodying potential factors in the decline of community health are fairly unexplored contexts in the field of community food security and food environments (Eisenhauer, 2001). Recall that the adults at our community forum were very conscious of the fact that they spend most of their money outside of their community despite the diversity of supermarkets located near their neighborhood. It is possible that a participatory research project that follows the money trail of a family's grocery spending could be highly significant and interesting to communities, especially if such capital flight is contributing to retail blight.

The adults' response during the community forum also suggests that a change occurred in the status of the youth, at least according the youth perspective. Through the youth's discussion on this forum, we see evidence that suggests the youth's participation in this process supported a shift in their social position away from the margins into a more central and empowered role. Prior to the community forum, a two hour session was allotted for planning logistics including plans for food and who would lead what presentations. This session was particularly frustrating for us as facilitators since it was very difficult to engage the youth's interest and participation in planning. In retrospect, I discovered that the youth were not motivated to present our results to a room full of

adults because they themselves did not see the relevance or usefulness of our study. Following the presentation, the youth noted that to their surprise that, like our study, the adults chose to "compare and contrast" the quality of local food stores. They also said that they enjoyed this experience because "so many people could understand what we were relaying to them" and that "they were actually interested and asked us questions". Participation in research tools and practices provided the youth with a greater understanding on how knowledge is legitimized. I assumed that this allowed the youth to see that even adults do not have all of the answers.

This evidence of the changing role of the youth contributed to enhanced interpersonal learning as well as development and change at the community level. I was able to integrate the youth's views on youth work, money, and consumer behavior into our food disparities study during a final wrap-up workshop discussion. In this activity, I guided the youth's reflection on how some adults at the community forum also focused on the concern that money is leaving their communities. As you will see from the dialogue below, the youth's usual WRCC youth program leader, saw an emergent learning opportunity from this discussion. This is important because it represents the only time that she contributed to our activities and discussions (referred to as Y Leader).

Y1:	Yeah, and we in a recession.
Facilitator:	So what does that mean for jobs for teens?
Y1:	They [jobs are] leaving but they coming back because I trust Obama
Facilitator:	How do you hope that he will help [create] teen jobs?
Y1:	Well maybe only jobs for over 18.

Y Leader: Things are really changing because of the fact that there are so many adults out there that don't have jobs. It's going to adults that get those jobs unless there is a problem with those adults, if there are not adults that can't pass the drug test or whatever the issues may be preventing them from getting those jobs, and that is the only way those teens are going to get those jobs. If you got teens that are in high school, or you know, the thing with high school diplomas, but yeah they get these jobs but if they don't have their high school diplomas by like 19, they can't move up.

Y Leader: Or you gotta get your GED.

Facilitator: That is what I found so interesting with this topic, as I said before, there are more opportunities for teens to start these projects and not as much with adults.

Y Leader: Especially for non-profits, a lot of our money comes to run programs for teens, like the one we just got that is to pay me to be able to stay at the center is for them. Yeah, I'm getting paid, but if it wasn't for them being in the center, we wouldn't be able to get the money.

We tried to guide the conversation to job creation and youth having a more central role in making decisions on developing opportunities for youth work. On the other hand, the value of money and payment dominated the rest of our discussion.

Facilitator: So my question is to [the youth], if there were more food programs coming, would you all want to be a part of developing those types of programs or would you just want someone to come in and say here's what we're going to do...

Y1: I'd rather be a part of it, but what ya'll did, you didn't just come in and said this here is what we're going to do, but ya'll gave us some background and we didn't just jump right into it. Ya'll did ok.

Facilitator: Thanks. What about the garden project? That wasn't your idea and you guys didn't want to do that.

Y Leader: I think that if the garden project actually paid them, they would be out there. Well some of them. I would say some youth. If somebody were to come in and say hey…

Y3: It depends how much they payin.

Facilitator: How much would they have to pay you?

Y3: It depends how long they going to have me working.

Y Leader: If someone was going to come to me and say "I can pay 10 teens to get your garden up and running so that we have fresh fruits and vegetables. And we're going to pay them a stipend of $50 a week", or maybe not that much.

Y3: For that I would do it.

Y Leader: See. If they had something like that, they probably would do it. We just don't have the means or the time to do it. Like I told them, I don't do gardens that's just me.

Y2: I would do it.

This provides more support for the notion that these youth were primarily motivated by monetary compensation. It also draws our attention to the critical need to identify, encourage, and reinforce non-monetary values and motivations for participation, work, and the nurturing of youth food citizens.

4.4 Making food environments research relevant

4.4.1 The relevance and appropriation of research tools

Increased rapport, more advanced dialogue skills and more relevant discussion topics provides evidence that the youth gained greater knowledge on research and its uses. When I asked the youth during the final wrap-up workshop how this project changed the way they thought about research in general, their responses included, "you

don't always have to use a computer for research", "it showed me how to gather information", and "the more that you learn the more you pass on to other people". The youth experienced a full process of inquiry thereby participating in phases of asking questions, using tools to collect information, and engaging in forms of dialogue and collective meaning making. Most of the final wrap-up workshop consisted of audio recorded dialogue and these discussions were by far the most rich and interactive. These discussions allowed me to observe how the culmination of experiences and interpersonal development influenced our reflections and new forms of knowledge. The following examples of this dialogue show that the youth did in fact gain a greater understanding of the role of research and that they were capable of appropriating these methods in the future if they chose to do so. They told me that they enjoyed the opportunity to go out and collect data in the community and some stated that they would have preferred to do more of this. Some also mentioned that if we included stores in other suburban communities it would have made the study stronger. "I think that it was more store orientated, like, if we went to more stores and talked about it, it would've been better", one youth stated. He continued to describe how if we surveyed stores in an adjacent college community:

> Y1: we could see where people, who are not too much older than us but not as old as the people who shop on the [Westside], so we could see what they was buying and what they was more interested in.

This youth identified age and market demographics as an important variable when studying food environments. Marketing and advertising research was also brought up by other youth. One youth thought it might be interesting to explore the type of advertising

outside of stores in order to see if it was connected to what people actually purchased or how it influenced people's shopping preferences. Another youth further speculated on the role of advertising and purchasing behavior on people of different ages:

> Y3: Everybody, you know we could be too busy, adults might know more than us, but maybe not because they just have to make sure that people have food to eat. So what ever looks better on the commercial then they might just get that.

In response to this statement, a girl highlighted the differences between supermarket commercials and what we observed in the actual stores.

> Y2: They be trying to make look it all good [on TV] and it's all nasty at the grocery store.

I noted to the youth how this would be a totally different type of project which would require different tools. Content analysis approaches to exploring food advertisements and commercials could be an engaging and interesting project. But, instead of exploring what these tools might be, a couple youth brought the conversation back to the way we used research tools to measure the spatial distribution of food stores and the cost and availability of certain items. One stated that we should try the exact same study with another group of youth in another city, whereas other suggested we try it again but focus on things other than fruits and vegetables like "meat", "junk food", or "greasy food".

In order to further explore participatory appropriation during our reflection activities, I wanted to learn more about how research could be used in a way that was more relevant to the lives of teens. I encouraged the youth to explore different content areas where research might be useful outside food for this discussion. My youth partners where part of a larger WRCC youth group that met weekly during "Teen Scene" where

they followed 4-H and "Peace Jam" curriculum on other task- and project-based activities. I knew that they were currently writing short plays on teens dealing with tough issues like drugs, drinking, and sex so I attempted to start the discussion around connecting research and 4-H projects. Below is what unfolded:

Facilitator: So thinking about your 4-H projects and the plays that you are writing. Are there ways that you can use research to do various 4-H projects or to help you write this play?

Y1: We have been doin research. On like why, like questions to ask, but not make them questions in the play, but how to turn it into a scene. We putting, most of the stuff in the play is education stuff so like we acting out but it's like we teaching at the same time.

With this 4-H project, the youth think up potential real life scenarios or interactions youth may have with their peers or adults. This youth linked the learning and teaching parts of acting and playwriting as a response to the assumed needs of their peers which includes the new knowledge on how to best respond to pressure from others to engage in risky or unhealthy behavior. This young person further connects the plays to research by noting that they are hypothesizing particular questions their peers may have and responding with providing them knowledge. Although it was not explicitly discussed, I hope that continued reflection by these youth on their experiences in this project over time may influence the future appropriation of research concepts and practices in ways that enhance their everyday informal education activities at WRCC.

As I encouraged deeper discussions about making research relevant to the lives of teens, the youth focused primarily on teens using research because they "want to change the rules", "[e]specially with the schools". The following dialogue illustrates the youth's perception that they do not have the power to change rules in their school but also explores the potential support of research.

Facilitator: Do you think kids feel empowered to change the rules at school?

Y1: They can, they could go to the board and they got that thing on Channel 21 where you can go and voice your opinions.

Y2: But it is rare.

Facilitator: Do you think research could make that different?

Y1: Sometime you can change the rules by getting enough signatures.

Y5: A petition.

Y1: Yeah, you know for certain issues it gotta be like a certain amount.

Facilitator: So [a petition] is one tool for getting information for change. Are there research questions that you could ask and answer with a petition?

Y1: You have to have a good reason why you want to change the rule and then the reason why the rule was put in place.

Facilitator: So there is knowledge that you have to get. What about with other teens, are there some ways to gather information or to ask teens, could you go out and ask other teens how they felt about the rule?

Y1: That would help too.

Y6 [If] there was more than one voice, and maybe that more people would believe and want to change.

Facilitator: Or you might find different opinions. You might find teenagers that might think that rule is good.

Y1: At my school, they don't have the hour lunch any more and some students think it's good and some don't.

Y5: I don't think it's fair.

4.4.2 The role of advanced dialogue in further emergent learning

Advanced forms of dialogue, rapport, and more relevant discussion topics also supported more emergent learning opportunities by allowing us to share my CFS

knowledge in a way the youth found more interesting. The dialogue below illustrates how participatory appropriation and dialogue helped us to situate CFS issues and topics into discourses relevant and understandable to the youth. It also shows how throughout participation and learning, the youth became better versed in the CFS language and were able to critique some of the field's discursive practices such as food safety policy and popular notions of whole, farm fresh foods as being healthier than other foods.

Our discussion turned back towards a focus on CFS topics when one youth asked about food licenses and we discussed the fact that farmers do not have to have a license to sell food if they do not cut it, cook it or change it in any way. Licenses are required and important for people that process or change raw products. This evolved into a discussion on food safety and rules when one youth expressed disbelief that any company or store would actually sell unhealthy food and one youth asked, "Is there a law against dangerous foods?". This youth equated food contributing to diet-related ill health as "dangerous". We discussed how some states are banning the use of trans-fats, which required us to explain what trans-fats were and what they do to the human body. I felt this provided an opportunity to reinforce some public concerns regarding the current food system and food security.

Facilitator:	There are some people who believe that there a lot problems with the food that we eat. I think someone mentioned not being able to drink regular milk, and someone else mentioned hormones in the milk.
Y6:	No I just drink a lot of milk.
Y2:	Are you lactose intolerant?
Facilitator:	There are a lot of extra things companies do to food, to make more of it and sell it.

Y6: I can't even have a whole bunch of regular milk but I can have organic milk.

Facilitator: Are you allergic to it?

Y5: You eat cheese.

Facilitator: But cheese is a different form of milk.

This youth was not able to articulate why she could have organic milk and consume regular cheese but not large amounts of regular milk. This could have been because she was uncomfortable sharing any details but it also highlights the complexity and controversial nature of food safety.

Y3: What's the hormone thing?

Facilitator: Some people think that the hormones that they inject…

Y1: To make the cow produce milk

Facilitator: They're similar to woman's hormones that help us develop so they wonder if milk is connected to young girls developing too soon like at the age of 7

Y1: Estrogen

Facilitator: It's like estrogen.

Y5: [Early development] comes from drinking milk?

Facilitator: They don't know. That's the thing, people are talking about these connections to food and health but we have to do the research to know for sure.

This shows evidence that some of the youth had heard about the public concern regarding hormones and milk but that the issue was still confusing.

Y2: They try to make it where they don't have to kill cows?

Facilitator: They want to make more and sell it. They're trying to make more produce for cheaper money and some people think that it is a big problem with food security...Thinking about the rules, people are trying to change those to make it a rule that you have to label that milk and say what you injecting into those cows. But we have to go through these research processes to find out that is the truth.

Y3: But do the cows need it?

Facilitator: Some people think they do and some don't. Without the hormones, it would take longer to produce more milk and it could make milk more expensive. Which then causes a problem, because milk is believed to be good for us.

Y5: Milk is already expensive.

Facilitator: So that is why research, like asking people's their opinions. Like if we did know a lot about these hormones, would we still want it?

Y5: What do the hormones do to us?

Y1: What about men, what does it do to us?

Y6: But you don't have female parts so you don't have to worry about it.

Facilitator: Actually, men have estrogen in their bodies and us women have testosterone. We just have the right amount and balance for one or the other.

Y1: That is what I'm saying, what if men are getting too much estrogen in their bodies.

Facilitator: No, milk won't make you a woman. [group laughs] I don't want to scare you guys. I think that some people are more concerned about connections between milk hormones and cancers. But again, much of the public doesn't feel like they know for sure if it harms us or not. Some might think that the overall benefits of milk outweigh any bad.

Y5: I think this is interesting.

This conversation progressed into topics on recent food safety scares brought up by the youth including the E coli contaminations of peanut butter, spinach, and tomatoes. This

allowed us to discuss the centralized control of the food system and how a very few companies have control over much of the food production in the U.S. The youth were very intrigued to learn that the same batches of crushed peanuts are used to make different brands of peanut butter.

The evidence from this discussion also suggests that while youth are knowledgeable about some public concerns regarding food safety, they may be receiving complex or mixed messages from the media or their parents that impedes their ability to make sense out of them. This further supports a growing need for a greater capacity for youth to be critical of information they receive. Youth need to be able to identify the assumptions, logical fallacies of arguments, as well as alternative perspectives. My approach to engaging youth in learning and development that included them as partners in a food environments community of practice supported such opportunities for exploring and facilitating the development of a critical youth perspective.

4.4.3 Critical perspectives of the youth

In contrast to the perceptions of the adult facilitators, the youth found the general research questions that focused on the cost and availability of fresh produce to be uninteresting and irrelevant to lives of teens. One participant expressed how the fresh produce aspect had the least influence on her motivation to be involved in the project, "I don't care about no fruits. I wouldn't think about studying no fruits". The youth also questioned whether or not people in their community actually wanted better access to fresh fruits and vegetables. This influenced suggestions by many of the youth that this

project might be more appropriate for adults since they were the ones responsible for grocery shopping.

As mentioned previously, ongoing participation in the various practices of food environment research also enabled the youth to become more knowledgeable in and better versed in community food security concepts and discourses which they used to take a more critical perspective of some of the field's research and outreach practices. On one occasion, a participant questioned the definition and reasoning behind the use of word "fresh" as an indicator for better quality food. Since these comments directly followed a reference to the small farmers market sponsored by the community center, and my knowledge that it is very common for community-based farmers markets to claim that locally grown food is fresher and therefore better, I assume that our group discussions provided an opportunity for this youth to challenge a discursive practice that she experienced outside of this project.

Y2:	Alright, so fresh produce that is in the grocery store is not really fresh produce because it's picked from the ground and later put in the store?
Y4:	It's fresh produce.
Y2:	So it's just produce, it's not fresh.

Another example of youth criticism of community food security discourse is illustrated by the following conversation that emerged during our final wrap-up workshop. It is regarding some of the youth's views on the ethical implications of food and health research.

Y1: I think that you shouldn't take it [research and education] so far...that it might change the way somebody eat.

Facilitator: You don't think that would be a good thing?

Y1: No, because that could be their favorite food but you show them the bad stuff about it then they stop eating, but that might, that is the only thing they used to eat. That would be bad.

Facilitator: Good. You brought up the importance of ethical issues that we need to be conscious of. How do you others feel about that? Like, when people come to you and talk about good food and bad food.

Y2: I don't like it.

Y4: I don't like it when people tell me what I can and cannot eat. What if that was the last thing on earth? Like, I know what food is not good for me but I like eating it.

Facilitator: Thinking about health. Do you think that ....

Y2: I think that, like if it is something that is affecting something real bad and they just keep on eating, you should break it down for them and tell them.

This discussion suggests that too much negative information on food can ruin the personal enjoyment people experience when they eat food they like. It also highlights the youths' consciousness of the potential for food and nutrition outreach and engagement to influence unjust stigmas or judgment of people based on their eating behaviors or preferences. Making a person feel guilty is not fair. This discussion also provides great potential for emergent learning that takes a more in-depth exploration of what people like to eat based on taste, cost, and convenience. On the other hand, the final comment shows that it might not only be acceptable to inform people about nutrition if their current eating

behaviors are seriously hazardous to their health, but that it also may be our responsibility to protect them.

My youth partners came to the final consensus that the disparities in fresh produce cost and availability that we discovered on the Westside of Riverton as compared to the adjacent suburb were not very significant and unlikely to be the cause of diet-related health disparities. Therefore, in the perspective of the youth, fresh produce disparities did not pose a legitimate problem in West Riverton that local food system projects could fix. Instead, the youth conceived diet-related health to be a behavioral issue related to individual choice. On several occasions many participants reiterated the opinion that most people were in fact knowledgeable on foods that are healthy and foods that are unhealthy, but that people would simply eat what they want to eat. In our final workshop, one youth concluded that if an individual wanted to be healthy, they would do whatever was necessary to travel to the supermarket and pay more money to eat and be healthy.

5. DISCUSSION AND CONCLUSIONS

This thesis has described a university-community partnership where youth participated as members of a food environments community of practice intended to foster the sociocultural learning and civic development needed for more systems approaches to community food security initiatives that seek to promote the diet-related health of minorities. My youth partners were provided many diverse opportunities to gain knowledge and skills through participation in the cultural practices of research including surveys, field observations, data analysis and displays. This project was successful at including youth in activities they are traditionally excluded from which aligns with systems thinking, CFS, and CYD perspectives. Also, in the spirit of the concepts of food democracy and food citizenship, traditional adult and child roles were transformed and different forms of learning and changed occurred. On the other hand, my results show that this project was very limited in creating a greater shared youth/adult understanding on how environmental factors impact minority diet-related health disparities or the larger system in which these disparities are embedded. Thus, there is little evidence that this project promoted much civic development for my youth partners.

5.1 The value of learning and participation

5.1.1 My personal learning through participation

I experienced the most influential learning and role transformation as a result of my participation in this project. My approach forced me to continuously reflect on my ability to build a different type of relationship with youth partners. This required me to listen, observe, and patiently engage them in discussing their reactions and perspectives

more than if I had simply taught these youth about community food security and food environments. This knowledge that I gained from the youth is very valuable but it only provides a small window into how youth perceive and are able to use the tools and practices of food systems research. This type of knowledge mirrors other youth and food studies that narrowly explore youth beliefs and motivations (Bissonette & Contento, 2001; Lautenschlager & Smith, 2007; Brander, 2008) or evaluate a program's ability to build youth's diverse assets (Clarke & Foote, 2004; Kinder, 2008).

I learned that the youth were more interested and engaged in research and learning tools or approaches that were hands-on. Fortunately, this project provided many such instances. Some common tools employed in food environments research we used like city-scale demographic maps were too complex for the youth to understand. Since these demographic maps illustrated the particular economic and ethic composition of their community, their inability to understand these maps severely limited my ability to communicate food environments concepts and their relation to social justice. The effectiveness of Google Map activities in engaging youth's interest suggests that this internet application is more user-friendly and developmentally appropriate for youth ages 12 to 16.

The use of Google Maps in youth and food programs that explore environmental factors of health should continue to be explored and evaluated. If my project with these youth were to continue, I see great potential for us to further collaboratively explore the youth's findings on disparities in the quality of the built environment through the use of Google Maps. It provides a learning opportunity to introduce the youth to concepts on zoning and the historical and current contexts of commercial and housing development in

their community. I assume that the more practice these young people have with using maps as representational tools the better skilled they will be at understanding and applying demographic data such as neighborhood economic and ethnic composition. More studies on how youth engage with and learn through the visualization of geographic food and health information would contribute to these types of youth and food programs.

5.1.2 Interpersonal learning through participation

My youth partners showed improved capacity for the social and intellectual development common for community food security research practitioners as our collective ability to dialogue and create shared meanings became more frequent. This project and my AR approach to inquiry supported many forms of emergent learning opportunities which, like similar projects (Rahm, 2002; Fusco, 2001), enhanced knowledge sharing and made science more relevant to young people. By taking advantage of as many emergent learning opportunities as possible, I was able to teach the youth my knowledge on community food security and gain a greater understanding of their views so I could situate content in ways that I thought would make the most sense to the group.

The value of emergent learning and dialogue experiences was evident as the youth became more and more interested and versed in the language and practices of community food security as the project evolved. Sometimes the topics of our conversation strayed from the content and behavioral learning objectives I planned from the beginning. Also, they often left us all with more questions than concrete answers. Some might question whether or not any of this knowledge ever truly solidified with the youth in any

meaningful way which I agree is something I wish I could continue to measure over time. But if traditional passive forms of knowledge sharing and assumed learner retention are ineffective, such interactive and participatory forms of learning through conversation are not common in classrooms or informal education settings and are worth exploring further. These dialogue experiences showed me that my youth partners were critical of food environments practices and were able to articulate such views. Therefore, if we want youth to gain a greater capacity to critically question such things as advertisements or media, they need frequent opportunities to practice those abilities (Pittman and Irby, 1995).

Similar to Brander (2008), my youth partners were highly motivated by money and the opportunity to gain employment skills. Neither the youth nor I ever realized how many of the most accessible and best paying jobs for teens are often in their local food system before participation in this project. Jobs flipping burgers in fast-food restaurants, bussing tables at diners, or stocking shelves at grocery stores were not considered to be the most glamorous jobs to my youth partners. But since these jobs provided the monetary compensation many U.S. teens so highly value, they were willing to do the work. This may suggest that we take a closer look at the relationship between diet-related health and the work environments and work culture of teens. The fact this project was framed as a job opportunity and that participation provided a monetary incentive was problematic and limited our ability to engage in discussions on values around collective work to improve the common good. In retrospect, I wonder if I should have tried to recruit and engage youth who had more established civic values to participate in the project from the start. On the other hand, I believe that these findings reflect the reality

of many youth today who are born into a culture of consumerism that collectively values money and materialism. Such a reality poses a major challenge in supporting the development of youth food citizens as partners in creating new forms of food personhood and a civic culture that exist outside traditional market values.

Beyond a minor change in the social position of my youth partners after the community forum where adult residents listened and reinforced their hypotheses, or the mere act of including them as researchers, this project does not provide strong evidence that the youth experienced or influenced transformative interpersonal or cultural change. I recently was informed that the summer following this project the WRCC obtained Federal Workforce Reinvestment Act funds to provide the youth paid or volunteer job experience. I am unaware of the specifics of this program but it would be interesting to learn if our project had any impact on those program development decisions. If it did, that could suggest that this program supported forms of organizational change. All in all, as other community-based participatory researchers, the project did little to make major transformations in the knowledge, perspectives, and social position of my youth partners (Krasny & Doyle, 2002; Kirshner et al., 2002).

5.2 Citizenship and participation

It is true that the youth were provided opportunities to make some decisions regarding data collection, analysis, and how their voice should contribute to the larger project. However, the time limitations and the fact that their participation occurred within a context of predetermined objectives defined by expert stakeholders, I conclude that the actual form of participation resembles more of a "functional" form than a true

"interactive" form (Pretty, 1995). Interactive participation could have been better supported if the youth were involved with the development of the research focus, questions, methods, and purpose. The danger in functional forms of participation is the likelihood of token involvement (Pretty, 1995). This occurs when a project claims to be participatory but in actuality the youth are often not completely aware of the issues and purpose of the project. They may provide their own voice but are not provided feedback by adults or the opportunity to choose how their voice is used. In tokenism, youth voice is often manipulated to push an adult agenda (Hart, 1992).

I discovered that using fresh produce cost and availability and data on neighborhood ethnic compositions as possible variables contributing to health disparities was not effective in engaging the youth's interest in public health and social justice issues. Instead, it appears as though this framing may have reinforced the popular support of personal responsibility, individual choice, and individual behavior change perspectives. More time for more dialogue and participatory learning activities is needed to provide youth and adults opportunities to critically reflect and explore human experiences with diet-related ill health and how we are hypothesizing causal relationships. It is naïve to think that we can transform the deeply ingrained and often hidden social and cultural perspectives on food, health, and social justice in just a couple months.

5.3. Conclusion

This study has both described and evaluated a specific approach to a community-based research project. The goals of this project were to:

1) Develop, implement, and describe an approach that attempts to effectively engage youth as partners in learning about their local food environment and community food security issues.
2) Evaluate my ability to engage the youth's interest and attention as well as facilitate social learning.
3) Document the youth's unique perspectives on community food security discourse and practices.

I employed an AR method commonly used by teacher researchers to evaluate the levels and forms of sociocultural learning and participation that my approach supported, measured change, and adjusted my plans and approaches throughout the project to maximize project goals and learning objectives. Evaluating and enhancing both dialogue and ideal forms of participation played a large role in this project.

My overall findings support that my approach to learning and engagement positively promoted some social and intellectual development for both the youth and for myself. Through participation in the cultural practices of research including surveys, documenting observations, data analysis and displays, the youth gained new knowledge and skills, but more importantly they applied existing knowledge and perspectives to novel activities. One of the most positive impacts of this experience was that it provided me with a greater capacity to facilitate learning, dialogue and embrace multiple forms of knowing in action.

One of the greatest limitations of this project included time and resource constraints which are common complications to achieving full participation. Because I only had two months with the youth and pressure to produce an end product, I often found myself rushing through activities. This constrained my ability to take advantage of emergent learning opportunities that were relevant to the youth since they were not considered a priority learning objective. The scope of this project and the types of

learning and development objectives I sought to achieve were too broad and too large for the time span of this project. My planned learning experiences were not able to effectively balance all that I wanted to accomplish. According to theorists, quality participatory youth development projects should last at least one year (Perkins and Borden, 2003). If we were afforded more time and resources, I could have facilitated these relevant emergent learning opportunities in order to better integrate the youth's unique ways of knowing in the field of CFS. I also could have promoted better forms of participation.

These theorists also stress that youth should be full partners in the development of programs. In this case, adult experts chose the project's conceptual model including the research questions, focal areas, and methods prior to any contact with the youth. This conceptual model which situated health disparities and social justice in the context of retail food environments, and the stance that new knowledge on the spatial distribution of available and affordable fresh fruits and vegetables would provide meaningful information for all stakeholder groups. According to the ladder of young people's participation provided by Hart (1992), this project could be considered "participatory" but one of "assigned" participation by adults where the youth's role was more informative and consultative.

Traditional education alone is not enough to promote community food security and solve the diet-related health disparities among minority youth. Our approaches must seek to transform the traditional roles of all participants, engage with those traditionally marginalized, and support the development of system thinking that integrates multiple forms of knowledge and perspectives on the relevancy of research tools and discursive

practices. Such inclusive and participatory approaches are not without fault but can progress towards more ideal forms when the users increase their capacity to effectively understand and modify the types, applications, and outcomes of participatory processes. The results from this study make a valuable contribution for researchers and practitioners interested in developing future participatory food environments activities that better resemble interactive forms of participation. Therefore, I encourage others who are interested in engaging youth in CFS and food environments to support more meaningful opportunities for youth partners to make shared decisions on project development from the start including a project's research topics, questions, methods and purposes.

6. APPENDICES

6.1 Compiled cost and availability data

Table A: Cost and availability data

	Store 1	Store 2	Store 3	Store 4
Yellow Banana	0.44 lb	0.44 lb	0.44 lb	0.44 lb
Green Grape	X	X	X	X
Onion (cheapest)	0.56 lb	X	0.55 each = 1.10 lb	0.55 each = 1.10 lb
Apple (cheapest)	0.49 each= 1.47 lb	0.49 each= 1.47 lb	0.49 each= 1.47 lb	0.49 each= 1.47 lb
Sweet Potato	X	X	X	X
Kiwi	X	X	X	X
Blueberry	X	X	X	X
Strawberry	X	X	X	X
Blackberry	X	X	X	X
Red Tomato	X	X	X	1.89 for 3/20oz= 1.51 lb
Green Beans	X	X	X	X

	Store 5	Store 6	Store 15	Store 18
Yellow Banana	0.44 lb	0.44 lb	0.44 lb	0.44 lb
Green Grape	X	X	X	X
Onion (cheapest)	0.55 each = 1.10 lb	0.56 lb	0.56 lb	X
Apple (cheapest)	0.49 each= 1.47 lb	0.49 each= 1.47 lb	0.49 each= 1.47 lb	0.49 each= 1.47 lb
Sweet Potato	X	X	X	X
Kiwi	X	X	X	X
Blueberry	X	X	X	X
Strawberry	X	X	X	X
Blackberry	X	X	X	X
Red Tomato	1.89 for 3/20oz= 1.51 lb	1.89 for 3/20oz= 1.51 lb	1.89 for 3/20oz= 1.51 lb	X
Green Beans	X	X	X	X

Table A: Cost and availability data (continued)

	Store 11	Store 17	Store 13	Store 14
Yellow Banana	0.69 lb	0.69 lb	0.59 lb	0.45 lb
Green Grape	1.79 lb	1.79 lb	1.18 lb	1.24 lb
Onion (cheapest)	0.66 lb	1.24 lb	0.99 lb	0.56 lb
Apple (cheapest)	1.99 lb	1.99 lb	1.69 lb	1.09 lb
Sweet Potato	0.99 lb	0.99 lb	0.99 lb	
Kiwi	1.50 each	1.50 each	X?	1.69 ?
Blueberry	3.49 pint=4.65 lb	4.99 pint= 6.65 lb	2.50 pint=3.33 lb	1.99 pint = 2.65 lb
Strawberry	4.99 lb	4.99 lb	2.00 lb	X
Blackberry	11.40 lb	11.40 lb	5.00 lb	X
Red Tomato	1.49 roma*	1.79 lb	1.99 lb	1.19 lb
Green Beans	1.49 lb	1.49 lb	1.19 lb	X

	Store 12	Store 19
Yellow Banana	X	0.79 lb
Green Grape	X	X
Onion (cheapest)	X	0.99 lb
Apple (cheapest)	X	0.99 each = 2.97 lb
Sweet Potato	X	X
Kiwi	X	X
Blueberry	X	X
Strawberry	X	X
Blackberry	X	X
Red Tomato	X	X
Green Beans	X	X

Table A: Cost and availability data (continued)

	Store 7	Store 8	Store 9	Store 10
Yellow Banana	$0.59	$0.59	$0.57	$0.69
Green Grape	$1.77	$1.77	$1.59	$1.79
Onion (cheapest)	$0.99	$0.99	$0.43	$0.66
Apple (cheapest)	$1.33	$1.33	$1.66	$1.99
Sweet Potato	$1.49	$1.49	$0.69	$0.89
Kiwi	$0.59	$0.59	X	$1.50
Blueberry	$5.32	$2.50	X	$4.65
Strawberry	$2.99	$2.99	X	$4.99
Blackberry	$6.00	$6.00	X	X
Red Tomato	$3.99	$2.99	$1.29	$1.79
Green Beans	$1.49	$1.49	X	$1.49

6.2 Combined physical environment observational data examples

Store 1:

- Trash in bags on outside
- By houses and busy roads
- Easy and walkable (how?)
- Four roads connect so people can get here and there is a highway near.
- Leads off to a highway
- Gas Station/it has gas pumps
- Parking spots are available
- A lot of advertisement
- Leaking trash (where?)
- Open bananas brown/old
- Bugs (where? What kind?)
- Neatly stacked except bananas
- Gift cards (?)
- Nice employees
- Lots if snacks (like what?)
- Canned green beans
- Fruit is altogether in a refrigerator
- Food is neatly stacked

- Lots of ads on front of the store (ads for what?)

Store 2:

- Gas station
- Lots of ads (what kinds)
- Bigger (than what?)
- More parking spots (than what? How many?)
- Has other convenience stores around
- It is located on the west
- Surrounded by apartment complexes
- Is coming off of a main road
- Has no single bananas
- Has canned fruits
- More of the foods (?)
- Less uncanned and nuts
- It was pretty clean
- Near a hut down rite aid
- Walkable (how?)
- Neatly stacked food
- Canned Green beans are $0.99 to $1.49
- Canned fruits
- More packaged foods
- A lot more open space (than what? QD 1?)

Store 3:

- School (where?)
- Corner store
- Strip mall across street
- Busy road
- Not much advertisement
- Coffee, cappuccinos
- Outdated/small
- Food is neatly stacked
- A dirt trail (?)
- Connected to another store
- No ads
- Has a slurpy machine
- Medicine
- It is very secluded
- No gas station
- By a lot of stores
- Just like the last store as far as items but the layout was different.

Store 4:

- On a busy street
- In a residential area
- Tomatoes are not very red
- Clean

- Prices not clearly marked
- Staff did not know that they had apples
- Food in a cool area
- Not a lot of bananas
- Prices seemed high

Store 5:

- Really clean
- More variety (than what?)
- Staff told us they don't have a produce aisle because of a lack of space.
- Bananas are kind of rotten
- Only had one apple
- more variety of produce (like what? Green peppers, iceburg lettuce)

Store 6:

- vary spacious
- clean
- more variety of produce like oranges, lettuce and carrots
- you could see the produce at first.
- Produce in corner not noticeable
- Stocked better (than what?)
- Food looked very nice
- Very organized.

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