INTERGENERATIONAL LANDED LEARNING IN INFORMAL SETTINGS: A MIXED METHOD STUDY OF INTERGENERATIONAL LEARNING ON UBC FARM

by

CHEN CAITLIN CHEN

B.S. Beijing Normal University, Zhuhai, 2012

A GRADUATING PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF MUSEUM EDUCATION

in

THE FACULTY OF GRADUATE STUDIES

(Curriculum and Pedagogy)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

July 2013

Abstract

Intergenerational landed learning program (ILLP) is a kind of informal education, which uses UBC farm as the teaching place. Adult volunteers in ILLP are called Farm Friends (FFs). Researchers have paid attention to this kind of education, but have mainly focused on the education of children, with little research being done on the education of adults. This research focuses on what adult Farm Friends learn and what their social relationships are during the program. Surveys, interviews, and observations were used as research methods.

This research found that Farm Friends learned about "food", "ecology", and "other generations". In addition, the overall relationship amongst themselves was better than with children, this was especially reported by older FFs. Age range and relative farming experience were the main factors that caused large deviation of relationship scores between FFs and children. In addition, children's social behavior as well as FFs' personalities and cultural background were elements that influenced adult volunteers' social relationships built in ILLP.

Table of Content

List of Figures

Figures: Page

Acknowledgements

First of all, I am grateful for the patience and support of my supervisor Dr. Alex de Cosson, as well as the friendship, learning opportunities and advice of Heather Fisher. In addition, I would like to thank my friends, family, and colleagues for all of their friendliness, and encouragement throughout this process. I also want to thank ILLP for giving me the opportunity to volunteer and conduct research. Finally, I would like to thank all of my research participants, all of the Farm Friends and children for making this possible. Their friendliness, creativity, and energy inspired me to grow and change day by day.

INTRODUCTION

Landed learning is one kind of instructional strategy, which utilizes the land as a teaching tool. More specifically, land-based learning pedagogy is the combination of experiential education and environmental education (Urueta-Ortiz, 2009). Defined by Luckmann (1996), experiential education is "a process through which a learner constructs knowledge, skill, and value from direct experiences" (P. 6). Environmental education, which plays a crucial role in contemporary society, is a process that helps learners become aware of environmental issues, and foster knowledge, attitudes, motivations and behaviors in order to protect and improve the environment (Duvall & Zint, 2010; Palmer, 1998; Stapp, 1969). In reality, Landed Learning is often combined with intergenerational programs to utilize the land to educate different generations. Intergenerational programs provide interactions between different generational groups (Pain, 2005), enhancing individual's social skills. Therefore, an Intergenerational Landed Learning Program is indeed effective in educating a large cross section of the public about specific environmental knowledge, as well as the humanities.

For more than three decades, many scientists and educators have devoted themselves to the design of Intergenerational Environmental Education Programs with local schools (Ballantyne, Fien, & Packer, 2001a; Legault, & Pelletier, 2000). Studies of these programs show that using informal educational environments is an effective way to enhance intergenerational learning. Although there are numerous studies about how Environmental Education affects intergenerational learning, most researchers focus on the learning of

children or the learning transformation within parental or familial relationships (Ballantyne, Connell, & Fien, 1998b; Ballantyne, Fien, & Packer, 2001a; Leeming, et al., 1997; Legault, & Pelletier, 2000). However, members of these programs also interact with non-parental or non-familial people who also provide guidance and direction in the community (Vygotsky, 1978). A lot of research lost sight of the learning of these non-parental or non-familial adults. Even among research in informal education, there are limited studies focusing on adult education, although there is a large group of learners who are made up of community adults. Therefore, the purpose of this study is to explore, describe, and gain insights into the nature of learning in an intergenerational environmental education setting for seniors and young adults. Further, my paper fulfills my own interests and increases my understanding and awareness of how to use informal settings to educate adults effectively and at the same time educating children. My overall goal is to make a contribution to areas of this field that have not been explored in depth, and to highlight and encourage museum educators to focus attention on both adult and child education.

As Masini (2012) notes, the awareness of intergenerational relations is indeed crucial, and the study of these relations "to be the main responsibility of scholars in the area as part of the crucial normative aspect of futures studies" (p. 36). More specifically, intergenerational relationships and interactions play a significant role in shaping individual's social identity (Pain, 2005). As a result, the relevance of this study is supported by the growing importance in the academic community of understanding the nature and characteristics of intergenerational learning in an informal but structured environmental educational context.

Figure 1. Children at UBC Farm (photo by ILLP)

The UBC Farm (see Fig. 1) and its Intergenerational Landed Learning Program (ILLP) form the boundary for this study, which focuses on the intergenerational relationship built by Farm Friends (FFs). In the ILLP, FFs are adult volunteers (elderly and young adults). In other words, this paper investigates the nature of learning for adults in the ILLP at the UBC Farm, which is an informal but natural environment. The ILLP started in 2002 with its basic goals being to respond to the global environmental crisis and the urgency of nurturing youth who can be responsible and care about the environment (Mayer-Smith, Lee, Bartosh, Peterat, Sinkinson, & Tsepa, 2004). The ILLP involves 11 to 12 sessions throughout the school year, starting in the fall. There are, in total, at least 6 meetings for schoolteachers, program designers and FFs to discuss and prepare the program implementation (Mayer-Smith, Bartosh, & Peterat, 2009). There are three to five children and one to two FFs working in each group (Mayer-Smith, Bartosh, & Peterat, 2007). More specifically, there are two kinds of Farm Friends, these are, settled FFs, and Floaters. Settled FFs work with fixed groups though a whole year, while Floaters appears occasionally and work with different groups.

THEORETICAL FRAMEWORK

The theoretical framework adopted in this research is social constructivism. Social construction was coined by John Dewey in 1963. He believed that education is a result of the empowerment of the learner in a social circumstance. Constructivists, in opposition to traditional education philosophies, hold the view that thinking and learning take place through communication, and building on prior knowledge and experience (Hirtle, 1996).

I approach my research from this social constructivist approach, assuming that people's learning in informal settings is constructed within the social context. For example, Farm Friends bring their prior knowledge to the farm, and they will reconstruct their knowledge as they participate in and experience the intergenerational environmental program. The older generation will learn from the young adults and children, and these senior Farm Friends will influence the younger generation's attitudes and knowledge at the same time.

RESEARCH QUESTION

My research is guided by the following questions:

1) What do Farm Friends learn in this intergenerational environmental program?

2) What relationships develop among Farm Friends, and between Farm Friend and children?

3) What factors or characteristics influence Farm Friends' intergenerational relationships?

LITERATURE REVIEW

Environmental Education

Stapp (1969) defined environmental education as being "aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution" (p. 15). Therefore, one of the primary goals of environmental education is to improve learners' environmental attitudes and behaviors (Pěer, Goldman, & Yavetz, 2007). In order to provide the next generation with the desire, ability, and faith to build an ecologically sustainable future, many environmental educators focus their efforts on educating young children (Duvall & Zint, 2010).

However, many environmental education programs usually proceeded without a useful tool to evaluate and assess their effectiveness (Hovardas, 2005). This can be due to the insufficient literature on environmental education in terms of *theoretical grounding and methodological apparatuses* (Hovardas, & Korfiatis, 2012; Korfiatis & Paraskevopoulos, 2003). For example, Pooley and O'Connor (2000) stated that the environmental literature could be criticized for the lack of a comprehensive methodological framework, which focuses on the socio-cultural context of both formal and informal educational programs. Several recent studies have reported a "ceiling effect", which means that participants in environmental education programs with high prior motivation showed only small gains after the program (Beaumont, 2001; Brossard, Lewenstein, & Bonney, 2005; Hovardas & Poirazidis, 2006; Moody & Hartel, 2007). This finding is support by Falk, Heimlich and

Bronnenkant (2008), whose study shows that visitors with high motivation actually learn less than those visitors with free agendas.

It is necessary to consider the impact that time plays on the evaluation on these findings, as learning varies through time. Individual's learning is an "organic, dynamic, never-ending, and holistic phenomenon of constructing personal meaning" (Dierking, Falk, Rennie, Anderson, & Ellenbogen, 2003, p. 109). In this view, learning is always changing and evaluations only take a snapshot of this learning. Therefore, the time researchers choose to do evaluation is an important element that affects the learning outcomes.

Intergenerational Education

The simplest definition of "generation" is an age group, which represents "a group of people who possesses given social qualities because their age stipulates that they should grow up and be active in a specific period and environment" (Feng, 2011, p.76). Based on Feng, a generation has two types of attributes, which are natural attributes and social attributes. Natural attributes are in the main age level, while "social attributes are formed by the different times and environments in which people are situated" (Feng, 2011, p.76). In United State, "people who were born between 1963 and 1973 are generally referred to as 'Generation X'; people born between 1974 and 1979 are called 'Generation Y'; and those born after 1990, as 'Generation Z'" (Feng, 2011, p.77). The concept of intergenerational gap has become part of our culture. In the 1970s, research on generations gained sudden popularity worldwide after the publication of Margaret Mead's famous work *Generation Gap* (1969). The simplest definition of intergenerational gap is "the differentiation of values,

attitudes, or behaviors between members of an older generation and a younger generation" (Salkind, 2006, p.572).

As a result, many intergenerational programs have been designed and aim to bridge the gap by promoting healthy interactions between children and seniors (Ayala et al., 2007; BC Care Provider Association, 2009; Poole & Gooding, 1993). Intergenerational studies are now available to professionals and academics in the fields of child and adult education, providing a foundation for understanding these relationships and improving programs. Pain (2005) finds that intergenerational interactions affect benefit multiple generations through effects such as increased quality of life. In addition, Poole and Gooding (1993) suggested that such intergenerational interactions could enhance individual's social skills and moral reasoning. Intergenerational interactions also break down stereotypes between different generations through joint experience, sharing of knowledge, and skill-building activities (British Columbia Care Provider Association, 2009). A growing body of research literature reports that intergenerational studies will integrate language, content and other relevant fields into a new multi-disciplinary field.

Intergenerational Environmental Education

Many intergenerational environmental education programs are evaluated through the lens of the young people, focusing on the youthful generation's learning and their relationships with parents or grandparents (Sutherland & Ham, 1992; Uzzell, 1994; Vaughan, Gack, Solorazano, & Ray, 2003). These researchers reported several limitations as follows:

1) The time periods of most programs are very short, making it difficult to evaluate changes in student attitudes or learning. For example, Legault and Pelletier (2000) investigated a program that took place over more than six months; however, researchers found that significant development of attitudes and behavior might not present during that time period, even if they have developed within the span of the program.
2) The nature of evaluation in these programs, such a post-tests or post-interviews, look to understand changes that took place over an extended period of time. This makes it difficult to determine the effect of the program, as many other variables can affect participants' attitudes and behaviour during the program and are almost impossible to separate out.
3) Enhanced environmental attitudes and behavior may not be the only benefits of environmental education programs. That is to say, researchers should also open their minds and look outside the box for program effects (Ballantyne, Fien, & Packer, 2001b; Sutherland & Ham, 1992).

Recently, many environmental educators have realized that the adults who participate in these programs are also an important group who are often neglected when designing public education programs (Duvall, & Zint, 2007). This may be due to the difficulties and barriers in educating adults. For example, Ballantyne, Connell and Fien (1998a) explain that adults have limited free time, and the funding or resources needed to carry out adult programs have been limited too. This situation suggests that adult educational programs in informal settings are difficult or unlikely to succeed (Duvall, & Zint, 2007). In

other words, because of the limited opportunities, it is unlikely to educate adults directly in terms of their attitudes, knowledge, and behaviors.

However, an effective way to bring adults into an educational program is by using an intergenerational learning style. Intergenerational programs encourage young children to share their environmental attitudes and knowledge with adults, thereby influencing adults' attitudes and behaviors (Uzzell, 1994). In order to pay attention to adults, Liu and Kaplan (2006) identify three ways to involve adults in environmental education: for adults (as a target audience); by adults (as volunteers); and with adults (as co-learners in a less structured process). In addition, Liu and Kaplan (2006) also find that there is a growing interest in engaging adults, particularly in the realm of older adult environmental education focused volunteerism. Intergenerational environmental programs establish opportunities for adults, especially older adults, to learn about the natural environment while contributing to a younger generation's environmental learning (Benson, 2000; Kaplan & Liu, 2004).

Understanding the role that older adults can play in volunteer organizations is important, as they are increasingly joining volunteer initiatives of all kinds (Liu and Kaplan 2006). According to a national estimate, senior adults in the U.S.A. contribute about 3.6 billion hours of voluntary service to organizations every year (Marriott Senior Volunteerism Study, 1991). Because of their flexible schedules and active interest in civic engagement, these senior adults represent a valuable and crucial human resource for education programs (AARP, 1992; Kaplan, 2002). Specifically, senior adults can add enrichment and authenticity in environmental education curriculum by acting as co-teachers (Duvall, & Zint, 2007). Based on the large amount of time older adults spend volunteering, it is important to consider

the role they play in learning and the effect that their volunteer roles have on their own attitudes, knowledge, and behavior.

ILLP at UBC Farm

The ILLP was started in 2002 in response to the global environmental crisis and the urgency of nurturing young people to be responsible and to care about the environment in the future (Mayer-Smith, et al., 2004). The concept of the program is to bring the environmental outdoor experience, which is experiential by nature, into the school curriculum based on arguments that students may be able to learn more effectively outside the traditional classroom setting (Bartosh, Mayer-Smith, & Peterat, 2006). The program started with a Grade Seven classroom in a private elementary school, the classroom teacher, and seven elderly farmers. Six years later, the ILLP opened to public schools, enrolled over 400 Grade Four to Grade Seven students, with over 150 adult volunteers (Mayer-Smith, Bartosh, & Peterat, 2009).

The ILLP is proceeding cautiously. Researchers are seeking to understand the effects of the ILLP one step at a time. Firstly, researchers are attempting to demonstrate that caring about the environment can be developed through nurturing relationships with nature and the people around it (Peterat & Mayer-Smith, 2006). Secondly, researchers have demonstrated that potential strength of the program is not only in integrating science and farming through experiential learning, but also the potential to learn from the intergenerational interactions between children, young adults, and older adults (Mayer-Smith et al., 2009).

Since the obvious outcomes of this collaborative program show that intergenerational programs advocate for both children and adults, Larkin and Newman (1997) suggested that "all staff members need to have sufficient knowledge of child and adult development framing the program's content in order to generate mutually beneficial outcomes" (p.9). This relates to the requirement of educators' professionalization. In this paper, considering this requirement, the ILLP assembles one senior adult (master gardener) and one young adult (university student) into one group (see fig. 2) to expand educators' backgrounds.

Figure 2. FFs and Children Designing the Map of Their Bed (photo by ILLP)

METHODOLOGY

This study used a mixed-methods ethnographic approach, incorporating observations, interviews and surveys. Ethnography is the study of "social interactions, behaviours, and perceptions that occur within groups, teams, organizations, and communities" (Reeves, Kuper, & Hodges, 2008, p.512). One key feature of ethnographic research is that it has a strong emphasis on exploring the nature of a particular social phenomenon, rather than testing hypotheses. Therefore, in my paper, I chose ethnography to focus on exploring the nature of the intergenerational relationship in ILLP at the UBC Farm.

Ethnographic research usually gathers participant observations, conversational interviews, or formal in-depth interviews and documentary data such as minutes of meetings, diaries, and photographs (Hammersley, 1992). There are several advantages of ethnographic research. For example, "the use of participant observation enables ethnographers to 'immerse' themselves in a setting, thereby generating a rich understanding of social action and its subtleties in different contexts" (Reeves, Kuper, & Hodges, 2008, p.512). Participant observation also provides opportunities for researchers to gather empirical insights into social practices. Because of my role as a volunteer in ILLP, I as the researcher could easily observe the social interactions and social phenomenon as it naturally happened at the UBC farm.

Data collection

A mixed-methods approach was used for data collection in order to better understand the phenomena, including surveys, interviews, and observations. Triangulation of the data, which is a concept that allows the mixing of data sources to allow for one method to

help develop the other methods (Green, Caracelli, & Graham, 1989), was used. In this study, surveys were used to gather overall feedback about the ILLP, and the intergenerational relationships Farm Friends (FFs) had built with the children and other adult FFs at UBC Farm in the current year, 2012-2013. With the data collected from the survey, I chose five participants to do an in-depth interview to learn more about "why" and "how" questions. Originally, participants were intended to be selected from a subset of the survey population. But due to recruitment difficulties, interviews were opened to all willing participants. In addition, because I volunteered in ILLP as a FF, I got the privilege to observe other FFs' interactions with children undetected.

Survey

In the first stage of my research, I implemented a survey for adult FFs at UBC Farm in this school year 2012-2013 (See Appendix A). The survey was made up of three parts: the basic background information of participants; the relationship they built with children and other adult FFs; and participants' feelings about ILLP. In the second and third parts of the survey, I listed 30 statements for participants to choose totally disagree, disagree, agree, or totally agree.

Advantages of surveys:

1) It is much easier for surveys to gather information such as demographic data that describe the composition of the sample from large samples of the population (McIntyre, 1999, p.74). Therefore, surveys are relatively easy for making generalizations because of their widespread reach (Bell, 1996, p. 68).

2) In addition, surveys can provide information about attitudes that are otherwise difficult to measure using observational techniques (McIntyre, 1999, p.75).

Interview

I analyzed the completed surveys and searched for interesting themes. Merriam (1998) states, "it is necessary to interview when we are interested in past events that are impossible to replicate" (p.72). Inspired by this idea, I conducted individual semi-structured interviews with 5 participants from whom I had collected surveys (See Appendix B). The flexibility of this format allowed me to "respond to the situation at hand, to the emerging world view of the respondent and to new ideas of the topic" (Merriam, 1998, p.74). The intent of the face-to-face interview was to help me access the participants' learning and their intergenerational relationships built in ILLP.

The interview itself had three parts: participants' learning; their specific relationships built with the children in their group as well as with other FFs; and their feedback to ILLP. In the second part of interview my intention was to discuss more deeply with my interviewees their social relationships built in ILLP, which included the factors that may influence their social relationships. The interview was audio recorded on a digital recorder and transcribed after each session. Supplemental notes were taken during the interview process in order to highlight significant aspects of the participants' stories.

Advantages of face-to-face interviews:

1) Allows for a deeper understanding of participants thought process.

2) Provides an opportunity for probing questions and follow-up questions for

clarification.

3) Allows the targeting of a specific population.

4) More rich data about participants' experiences.

Observation

My formal observations were on Farm Visit 7 with four schools, in early April 2013. In addition, because I volunteered with Lord Roberts Elementary School, I had the opportunity to work with and informally observe all the intergenerational interactions between FFs and students from Lord Roberts from the start of the program in October 2012. Moreover, throughout the entire duration of the yearlong program, I got the opportunity to participate in FFs discussion after each visit to collect important information given by other FFs. Their comments were used in the analysis of the participants' learning. During each visit, I observed and took notes when I volunteered with Lord Roberts. It was efficient to collect data as both an observer-as-participant and participant-as-observer (Bryman, Teevan & Bell, 2009).

Data analysis

I used Excel to analyze the data collected from the 57 surveys. The higher relationship score they reported, the more satisfactions they thought in their social relationships. The 5 interviews in my study functioned as a multi-case study, which explored the nature of intergenerational learning in more detail. Data collected from survey, interview and observations contributed collaboratively to the research questions. More specifically, the first research question was answered by the data collected from interviews and observations,

while the second research question was solved by the data collected from the survey. I combined the data form survey, interview and observations to discuss the third research question more deeply. The interviews were transcribed verbatim, as a means to better understand and later analyze the information within the responses.

Researcher Role

As discussed above, the role of the researcher in this study was as an active participant. First of all, I am interested in museum education, and its relationship to informal education as compared with formal education. In this case, UBC Farm functions as one kind of informal setting. In addition, as a volunteer in the ILLP program I had a lot of field experience, which enhanced my own interests. Further, during the time I was volunteering as a new Farm Friend and young adult as well, I built a fascinating relationship with the children and the senior adults (see fig 3). This kind of intergenerational interaction and relationship enhanced my overall learning.

Figure 3. FFs and Children working in the Kitchen (photo by ILLP)

FINDINGS AND DISCUSSION

Demographics of participants

Fifty-seven FFs participated in the survey, which was 72.15% of the total volunteers this year. These Farm Friends worked with 4 different school groups: Lord Roberts; Graham Bruce; Strathcona Elementary; and Edith Cavell. In total, 38 participants were settled Farm Friends, 19 of them were floaters. Figure 4 below shows the range of Farm Friends from different school groups as well as their volunteer types. Figure 5 shows the age group of participants in this survey.

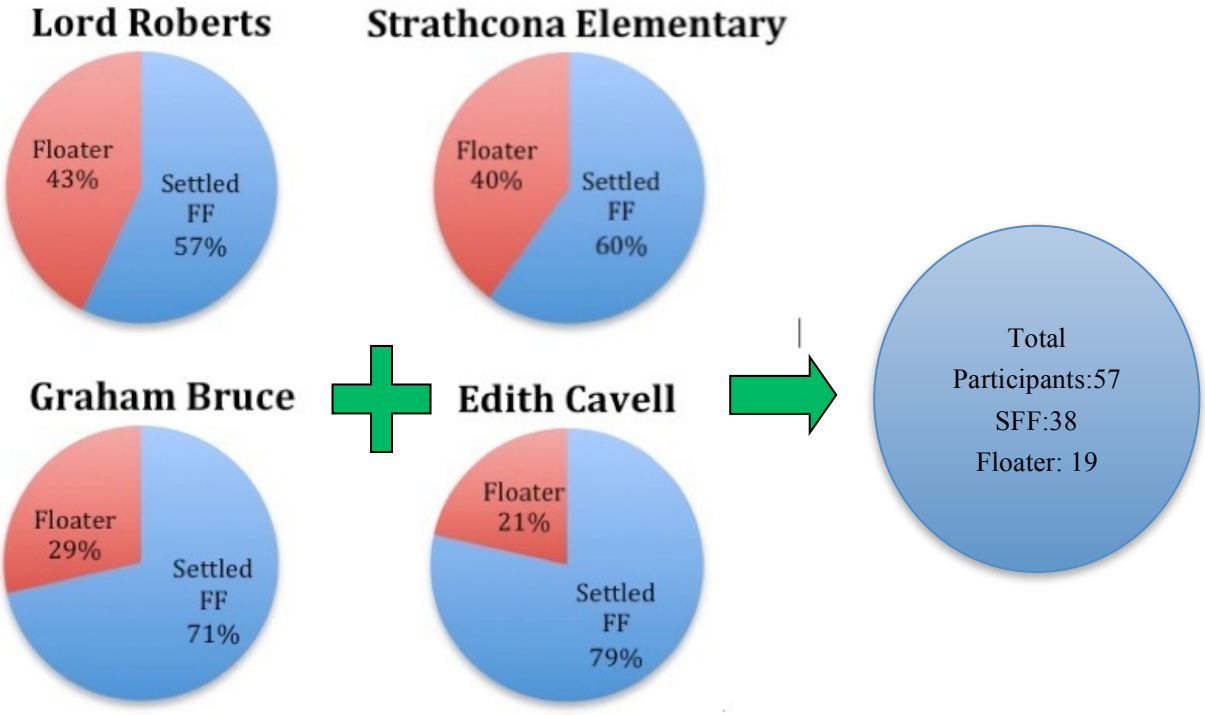


Figure 4: FFs with Four Schools

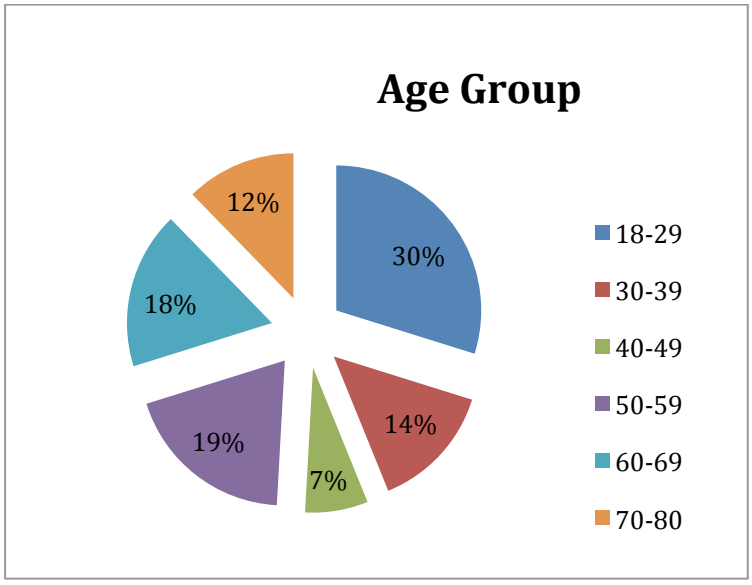


Figure 5: Age Groups of FFs

General discussion about good teaching and good learning

In order to explore whether holding different values in terms of good teaching and good learning affects people's learning and their social relationships, the researcher asked this question in the survey (See Appendix), and discussed more with her interviewees. In response to what is good teaching at UBC farm, many interviews suggested being a good listener. As one participant recalled, "I tried my best to listen carefully to them before doing our job, and I knew what they were interested in. It was easier and more effective to make them cooperate." In addition, another participant claimed, "good teaching is learning how the people you teach [want to] learn. They will teach you how they learn best, and then you can use it to teach them through making it enjoyable." These suggestions not only fit informal education, but can also be used in formal education.

Many participants responded that good learning is to find your own learning style and make knowledge useful. These volunteers came to UBC farm and facilitated school students to learn by doing. They expected their students to incorporate what they have learnt in ILLP back to their daily life. “If my teaching is successful, I hope these children in my group can eat healthy food and help their families to have healthy diets,” one participant said. Another participant suggested, “Examination is not a good way to test whether students’ learning is good or not. However, by summarizing what they have learnt at the end of the day, students can review their learning in a positive way.”

Adult FFs’ learning

When asked about the three most valuable knowledge or skills that the FF participants gained by joining this program, “food”, “ecology”, and “other generations” were the common responses. One of the interviewees said, “I bring those [food] into my own diet, and I incorporate things that I learned.” Another interviewee who was a master gardener said, “I learnt some certain plants that I don’t grow myself.” At the same time, many volunteers reported that they benefited a lot from interacting with children. For example, one participant said this kind of interactions helped her prepare to be a competent mother in the future. Based on these interactions, many participants learned characteristics of the young generation, as well as how to deal with children. For example, one elder participant said, “These children are so quick minded for me to follow them. They ‘push’ me to think and do things faster, which is good for me at this age.” She also commented that the intergenerational experience caused her to reflect back on her own life and wonder what it was like to be the age of the

children that she worked with. Several participants also talked about how to deal with "problem children", and how to utilize this knowledge in their own families. One interviewee recalled, "At first, she was too shy, and never got a chance to speak. Later I tried to call her, speak to her, and asked her to answer my questions. Now she is better, and she began to talk to me actively. I have a grandson who was also very quite. Then I took him to my garden, [and] communicated with him while doing some gardening cooperatively. I found it was really helpful to go into his world and make him speak when there was a connection between us". Peterat and Mayer-Smith (2006) also found that FFs found rewards in sharing their knowledge and experience with children.

In addition, 55 (96.49%) participants reported that they also learned from their Farm Friend partners. One participant mentioned that she learnt some teaching skills from her Farm Friend partner. She said, "[My Farm Friend partner] was a businesswoman, she knows better how to control some situations when things get out of hand." Another interview mentioned that her partner had the background knowledge of psychology, and she said, "I learnt form her that using more body language or physical contact with children helps to build social relationship with them."

Factors that influence adult FFs' learning in ILLP

Later, participants also talked about the factors that influence their learning. Most of them took the informal learning environment into account. Many researchers claimed that the environment serves as a teacher (Cajete, 1999; Jardine, 2000; Peterat & Mayer-Smith, 2006; Riley-Taylor, 2002). They believed that outdoor learning environment and hands-on learning

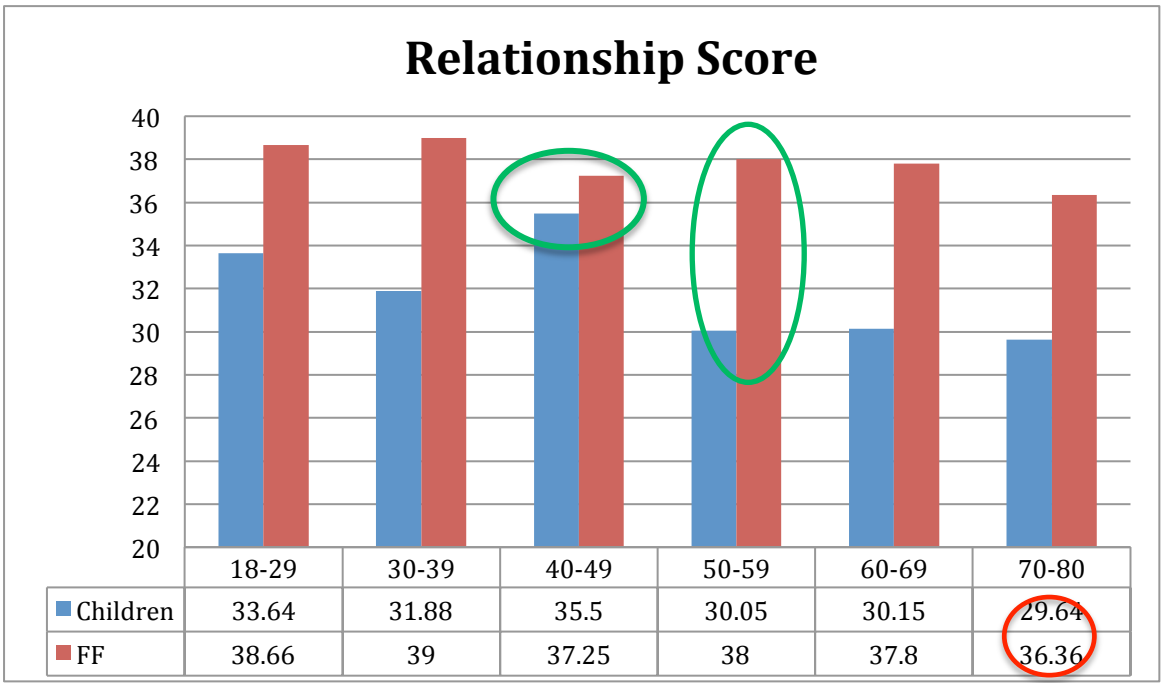
approach, which appeared as a powerful force, enhanced their learning in ILLP. Therefore, in ILLP, the natural outdoor setting was an important factor that influenced FFs' learning. One participant said, "Fresh air and outdoor activities really work on me. I am so exciting and curious when I work with nature." Several participants mentioned subjective factors such as personality and personal backgrounds. For example, one of my interviewees held the belief that following an elder's directions, without questioning it, is a virtue of respecting them. Therefore, this kind of belief resulted in less critical thinking and learning.

When asked about whether different values within work partners affect their learning, most participants replied that they did not think they had different values than their Farm Friend partners. "Idea is idea, practice is practice. Although we never talked about this question to get one agreement, we worked naturally, and we learn from each other," said one interviewee. Another interviewee who had different values than her Farm Friend partner in terms of good teaching and learning reported that "she focused more on disciplines; actually we need this to collect all the children in our group. Anyway, I do learn from her." Lastly, several participants reported that they preferred to work with somebody who had similar personality but different experience. Therefore, Farm Friends' learning in ILLP is not subject to whether or not volunteers have the same value in terms of teaching and learning.

Intergenerational relationship

Data showed that the overall relationships of Farm Friends were better amongst themselves than with the children. More specifically, the relationship score with Farm Friends was 38.05/40, while the relationship score with children was 31.88/40. Actually,

within these 57 participants, there was only one participant who gave more relationship score to children than to adult Farm Friends. Figure 6 shows the relationship score given by different age groups of participants, in which the group with 70-80 years old participants reported the lowest score to both children and Farm Friends. However, volunteers with 40-49 years old showed best relationship with children, while 30-39 years old volunteers showed best relationship with other Farm Friends. In addition, participants with the age of 40-49 reported the lowest deviation of relationship score with children and other Farm Friends, while 50-59 years old participants reported the highest deviation.



	18-29	30-39	40-49	50-59	60-69	70-80
Children	33.64	31.88	35.5	30.05	30.15	29.64
FF	38.66	39	37.25	38	37.8	36.36

Figure 6: Relationship Score versus Different Age Groups

Whether having experience of mentoring children was not the main factor

Within these 57 participants, 50 (87.72%) of them had the experience of mentoring children before joining ILLP. The participants who had experience in mentoring children before showed a deviation of +5.94 between the relationship score they gave adult Farm

Friends and children. Specifically, the average relationship score with Farm Friends given by these participants who had experience in mentoring children before was 5.94 higher than the score they gave children. However, the deviation of relationship score of the rest of participants who had no experience before was +7.71, which did not show a big difference. In addition, there were 12 (21.05%) participants whose relationship scores had a large difference ($\geq +10$) between the score they gave to Farm Friends and the score they gave to children. Whereas, these 12 participants all had mentoring children experience before. In conclusion, whether people have experience of mentoring children before was not the main factor that influenced intergenerational relationship.

Whether having different values within work partners was not a main factor

By asking "do you think you have different values with your Farm Friend partner in terms of good teaching and good learning", the researcher aimed to find whether holding different values effects the intergenerational relationships. In total, there were five (8.77%) participants who chose "Yes", 27 (47.37%) participants chose "No", and the rest of participants (43.86%) chose "Maybe". Within those 12 participants who reported a large deviation of relationship score between children and adult Farm Friends, there were three (25%) participants who believed that they had different values than their Farm Friend partner. Again, having different values than work partners was not the main factor that influenced the intergenerational relationships. In addition, these inconsistent values did not affect the relationships built with Farm Friend partners, but greatly impacted the relationships that participants built with children. More specifically, within those five participants who reported

"Yes" in this question, there were three (60%) of them gave very low relationship score to their children, while the relationship score they gave to their Farm Friend partner were near the average score. In addition, the one participant who gave children more score than Farm Friend partner belonged to the five people who reported different values than their Farm Friend partner. Therefore, although holding different values than work partners was not the main cause for the large deviation, it did influence the social relationship built with other generations.

Whether in different age groups was a factor

Figure 7 shows the demographics of 12 participants who reported the large deviation. There were five participants aged 50-59, three participants aged 60-69, one participant aged 70-80, another one aged 30-39, and two participants aged 18-29. Of the12 participants, nine (75%) of them were aged 50-80. This suggests that older adults had more difficulties than younger adults in dealing with children. From Table 1, it can be seen that almost half of the participants who were aged 50-59 reported a large difference in relationship score between children and Farm Friends.

Age Group / NO. of people	18-29	30-39	40-49	50-59	60-69	70-80
With large difference	2	1	0	5	3	1
Total participant	17	8	4	11	10	7
Percentage (%)	11.76	12.5	0	45.45	30.0	14.29

Figure 7. Age Groups with Large Deviation of Relationship Score between Children and FFs

There are three stages of adulthood, which are early, middle and late (Colarusso & Nemiroff, 1985). Therefore, there are two periods of transition; the first one happens between 30 and 35 which begins a mid-life, while the second transition occurs around 60 that leads to late adulthood. In this research, the big deviation occurred mainly within the people aged 50-59, which implied at least to some degree the characteristics in the second transition of adulthood. During this transition, people pay more attention to their health problem, and menopause may well occur anytime between 50 and 60 (Rayner, 2005). During menopause people begin to be concerned about the time limit on life and can easily get inpatient and frustrated. This might help explain the dissatisfaction the FF's aged 50-59 had with children when they were teaching.

Whether having experience in farming or gardening was a main factor

Within the 57 survey participants, there were 14 (24.56%) who had no experience in farming or gardening before volunteering in ILLP. In addition, within these no-experience participants, there were only five (35.71%) of them who reported a large deviation. However, when I compared these no-experience participants with their experienced work partners, I found that although some of these no-experience participants did not report the large deviation, their work partners did report the large deviation. More specifically, within the 12 participants who reported the large deviation, 10 (83.33%) of them had worked with FFs who had no relative gardening experiences before. Therefore, it is obvious that having no relative background experience caused the large relationship deviation.

This finding emphasized the importance of professional development for FFs as teachers in ILLP. Larkin and Newman (1997) suggested that all the volunteers in Intergenerational Programs needed to have sufficient teaching knowledge in order to make these programs efficient. Lacking background knowledge of farming or gardening led to the inefficiency within work partners. In addition, this inefficiency weakened the satisfaction of actual relationships that FFs built with children because they might feel tired or stressed when teaching the children in their groups.

Factors that influence the intergenerational relationship

Factors that influence the relationship with children

Based on the data collected from the interviews, most of the interviewees mentioned that children's social behavior was the main factor that influenced their relationship. More specifically, children of different age groups had different social behaviors. This year's groups had Grade 3 and Grade 7, and volunteers reported differences between these children. Students from Grade 1 to Grade 3 were classified as younger children, while students from Grade 4 to Grade 7 were considered as older children. Participants pointed out that younger children were more cooperated than older children. One interviewee said, "older children tend to do what you ask them to do, but then, they're like 'OK you are not [in] my social life, let me play with my friends.' [However], the younger kids are so malleable." It was more difficult to help older children focus on one thing, and they tended to be in pairs. Taking the Grade 7 children in my group as an example, when I sent one of them to do a task, they always went together. One participant said, "30 percentage of my volunteer time was

collecting them back to me. It [was] quite easy to lose one of them." Based on this fact, some volunteers began to separate their children in pairs to do tasks.

Factors that influence the relationship with adult Farm Friends

In general, most of the participants reported a high relationship score with other Farm Friends. When asked about what factors influenced their relationship with other Farm Friends, the most common responses were "personality", "experience" and "objective". Many participants agreed that they built better relationship with the person who has similar personality but different experience. "It is so nice to meet other volunteers here at UBC Farm. They come from different places with different culture and different stories," said one participant. Obviously, every volunteer came to ILLP with his or her own expectations. For example, some young adult volunteers were university students, and several of them reported that they enriched their volunteer experience in order to find a good job after graduating. Although they had their own expectations and reasons to volunteer in ILLP, there was at least one common objective that was to help others and contribute to society. One participant explained, "We are not forced to come here, and we have the same aim. So we are very nice to each other." It was the reason why adult volunteers could build good relationship with each other.

At the same time, several participants reported negative feedback to their FF partners because of the ineffectiveness of their cooperation. During a break one FF in discussion with another FF, mentioned that their FF partners had no idea of farming or gardening and were somehow a burden to her. She thought this kind of partner was like one more child in her

group. However, one master FF, worked with a no-experience partner, reported positive feedback. She said, “I took over the teaching part, while my partner did the timing and journal parts. We cooperated very well even though she does not have much knowledge about farming”. Therefore, properly dividing up working responsibilities within FFs could complement each other and minimize the shortages within work partners.

Only a few of participants who were young adults reported that they felt a little constrained when working with their FF partners who were older adults. One interview said, “[my partner] is older than me, and I respect her. So I followed her lead without critics or doubts. Sometimes, I felt nervous to question her. I probably won’t be like this when I work with my peers.” This experience was definitely caused by a generational gap. However, the interesting thing was that older adults did not report situations like this. They did not feel any generational gap with young adults.

Feedback to ILLP

It is great to get all participants’ positive feedback in terms of recommending other people to participate in ILLP at UBC farm. However, based on the data collected from surveys, there were 11 (19.3%) participants who felt stress about their ability to teach and learn in ILLP at UBC farm. Most of them gave the reason of the lack of gardening knowledge as the basis for this stress. Several of the participants also reported ESL as a main problem for them. One interviewee who was not a native speaker said, “I have to bring an electronic dictionary with me because I cannot match the name of a plant in English to the name I know in my mother language.” There were few participants who reported that they

felt stress because they lacked confidence in their teaching skills.

Finally, participants gave some recommendations to ILLP. The following are the most common suggestions given by adult volunteers in ILLP:

1. By publicizing itself better, ILLP could raise more funds and get more social support from the surrounding neighborhoods.
2. Give volunteers more time to get together, exchange learning experience and stories. For example, one interviewee said, “I know many Farm Friends traveled around the world though some personal conversations, so I think celebrating other aspects of our Farm Friends will be really cool.”
3. Give children more opportunities to cook in the farm kitchen. As participants mentioned, being a chef is children’s most favorite job. It helps children to learn more about what they are going to plant, and stimulates children’s initiatives.

LIMITATIONS

Most of the limitations of my research came from the methods I utilized. First of all, participants for the survey were only 57, which was relatively low for quantitative analysis. Secondly, participants in the interview were five, which is not a large sample. Thirdly, the recruitment of participants for the interviews was different from the original experimental design. More specifically, the original design for the recruitment of interviewees focused on the participants who reported large deviation between the relationship with adult FFs and the relationship with children. However, because of the difficulty in reaching those potential participants, I changed my interviewees into the people who showed interests in participating in my interview. Therefore, it reduced the ability to collect the variable answers from the whole volunteer group. In addition, as the observation was done by myself, some personal elements may affect the results somewhat.

In addition, there were also some limitations because of the research boundary. First of all, there were in total 79 volunteers in ILLP this year, which was fairly a small population to sample from. Secondly, the two different types of volunteers, Steeled Farm Friends and Floaters, had different social relationships in ILLP. For example, the Floaters appeared occasionally, which means they built short-term relationships with different children and FF partners in different farm visits. Therefore, those participants in my survey, who were Floaters, gave their average feedback to the children and FF partners they worked with. At last, new volunteers kept enrolling in ILLP, which also reduced the interviewees to sample from because new volunteers had limited interacting experience with children and other FFs.

CONCLUSION

ILLP provides an opportunity to study an area that is not well understood and to explore the two-way impact of the program, which is on school students and adult volunteers. Researchers have paid attention to this kind of intergenerational education, but mainly focused on the education of children, while little research has been done on the relationships between Farm Friends. Whether Farm Friends have good working relationships affects not only the education equality, but also the program's reputation to potential volunteers. This research focused on what Farm Friends learn and how their social relationships develop during the program.

In order to explore adult volunteers' learning and their social relationships built in ILLP, this research contains survey, interview, and undetected observation. Surveys were used to collect participants' basic information and their overall relationship with the children and other FFs. Interviews were designed to discuss more specifically their social relationships in ILLP including the factors that may influence these relationships. The undetected observation was used to collect and increase the database. Data collected from three different methods were used collaboratively to answer the three research questions.

The three most valuable skills and knowledge that adult FFs gained volunteering with ILLP were to do with food, ecology, and relationships with other generations. In addition, the informal and natural learning environment was a main factor that affected their learning. More specifically, the informal learning environment functions as a powerful incentive to increase their interests in learning. Meanwhile, participants' subjective elements such as

personalities and cultural backgrounds were also influential factors. However, holding different values in terms of good teaching and good learning between FF partners did not obviously affect their learning.

The overall relationships of Farm Friends were better among themselves than with the children. Specifically, the 70-80 years old participants reported the lowest score in relationships with both children and Farm Friends, while participants with 40-49 years old showed relatively equal satisfactions with other FFs and children. In addition, the group with 50-59 years old participants reported the biggest deviation in relationship scores between other FFs and with children. In addition, whether having relative farming experience before was also a main factor that caused the big relationship deviation. However, whether having experience mentoring children before participating with ILLP did not obviously affect the social relationships.

More specifically, children's social behavior was a main factor that influenced FF's relationships with children. As Mead (1969) said, "nowhere in the whole world are there any elders who know what the children know, no matter how remote and simple the societies in which the children live" (p.135). It order to build better relationships with children, adult FFs should accept children's social style, thinking, and behavior. The overall relationship among FFs was very satisfactory although there were some negative feedback.

Finally, some suggestions to promote the condition of volunteers were given based on the participants' feedback, as well as from the view of personal interactions. Firstly, it's important to divide FFs into small groups that consider their age, gender, character and so on. Secondly, some pre-training, focused on both education and relationships with workmates,

should be given to the volunteers before the program formally started. Thirdly, various kinds of activities aimed at strengthening the volunteers' relationship should be held.

Investigating the ILLP provided an opportunity to explore the nature of children's learning in the program as well as the intergenerational relationships between Farm Friends and the children. This is essential as there is little research in the literature that describes the nature of these relationships. In future research there needs to be greater focus on the role of adult volunteers, such as the Farm Friends, in intergenerational learning programs.

REFERENCE

American Association of Retired Persons. (1992). *Education projects: Idea book — A guide for volunteers*. Washington, DC: Author.

Ayala, J. S., Hewson, J. A., Bray, D., Jones, G., & Hartley, D. (2007). Intergenerational programs: Perspectives of service providers in one Canadian city. *Journal of Intergenerational Relationships, 5,* 1-22.

Ballantyne, R., Connell, S., & Fien, J. (1998a). Students as catalysts of environmental change: A framework for researching intergenerational influence through environmental education. *Environmental Education Research, 4,* 285–298.

Ballantyne, R., Connell, S., & Fien, J. (1998b). Factors contributing to intergenerational communication regarding environmental programs: Preliminary research findings. *Australian Journal of Environmental Education, 14,* 1-10.

Ballantyne, R., Fien, J., & Packer, J. (2001a). School environmental education programme impacts upon student and family learning: A case study analysis. *Environmental Education Research, 7,* 23–37.

Ballantyne, R., Fien, J., & Packer, J. (2001b). Program effectiveness in facilitating intergenerational influence in environmental education: Lessons from the field. *The Journal of Environmental Education, 32*(4), 8–15.

Bartosh, O., Mayer-Smith, J., & Peterat, L. (2006). *Informal science learning on the farm: Teachers' and students' experiences in a long-term environmental education project.* Paper presented at the NARST 2006 Annual Meeting, San Francisco.

Beaumont, N. (2001). Ecotourism and the conservation ethic: Recruiting the uninitiated or preaching to the converted? *Journal of Sustainable Tourism, 9*, 317-341.

Bell, S. (1996). *Learning with information systems: Learning cycles in information systems development.* New York: Routledge.

Benson, W. (2000). Empowerment for sustainable communities: Engagement across the generations. *Sustainable Communities Review*, *3*, 11–16.

BC Care Provider Association. (2009). *Creating caring communities: A guide to establishing intergenerational programs for schools, care facilities and community groups*. British Columbia, Canada: BC Care Provider Association.

Brossard, D., Lewenstein, B., & Bonney, R. (2005). Scientific knowledge and attitude change: The impact of a citizen science project. *International Journal of Science Education, 27*, 1099-1121.

Bryman, A., Teevan, J.J., & Bell, E. (2009). *Social research methods* (2nd ed.). Don Mills, ON, Canada: Oxford University Press.

Cajete, G. (1999). Reclaiming biophilia, lessons from indigenous peoples. In G. Smith& D. R. Williams (Eds.), *Ecological education in action, on weaving education, culture, and the environment* (pp. 189-206). Albany, NY: State University of New York Press.

Dewey, J. (1963). My Pedagogic Creed. *The School Journal, 54*(3), 77-80. In Experience and Education. New York: Macmillan.

Duvall, J., & Zint, M. (2007). A review of research on the effectiveness of environmental education in promoting intergenerational learning. *Journal of Environmental Education, 38*(4), 14-24.

Feng, Z. (2011). The evolution from generation to post-XX. *Chinese Education & Society, 44*(2), 76-79. doi: 10.2753/CED1061-1932440205

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), 255-274. doi: 10.3102/01623737011003255

Hammersley, M. (1992). *What's wrong with ethnography?* Methodological explorations. London: Routledge,

Hirtle, J. S. P. (1996). Social constructivism. *English Journal, 85*(1), 91.

Hovardas, T., & Korfiatis, K. (2012). Effects of an environmental education course on consensus estimates for proenvironmental intentions. *Environment and Behavior, 44*(6), 760-784. doi: 10.1177/0013916511407308.

Hovardas, T., & Poirazidis, K. (2006). Evaluation of the environmentalist dimension of ecotourism at the Dadia Forest Reserve (Greece). *Environmental Management, 38*, 810-822.

Jardine, D. (2000). *"Under the tough old stars," ecopedagogical essays*. Brandon, VT: The Foundation for Educational Renewal.

Kaplan, M. S. (2002). Intergenerational programs in schools: Considerations of form and function. *International Review of Education*, *48*(5), 305–334.

Kaplan, M. S., & Liu, S.T. (2004). *Generations united for environmental awareness and action*. Washington, DC: Generations United.

Korfiatis, K. J., & Paraskevopoulos, S. (2003). *Environmental education — Theory and method*. Thessaloniki, Greece: Christodoulidis.

Larkin, E. & Newman, S. (1997). Intergenerational studies: A multi-disciplinary field. *Journal of Gerontological Social Work, 28*(1), 5-16.

Leeming, F. C., Porter, B. E., Dwyer, W. O., Cobern, M. K., & Oliver, D. P. (1997). Effects of participation in class activities on children's environmental attitudes and knowledge. *The Journal of Environmental Education, 28*(2), 33–42.

Legault, L., & Pelletier, L. (2000). Impact of an environmental education program on students'and parents'attitudes, motivation, and behaviours. *Canadian Journal of Behavioural Science, 32,* 243–250.

Liu, S., & Kaplan, M. S. (2006). An intergenerational approach for enriching children's environmental attitudes and knowledge. *Applied Environmental Education & Communication, 5*(1), 9-20. doi: 10.1080/15330150500302155.

Luckmann, C. (1996). Defining experiential education. *The Journal of Experiential Education, 19*(1), 6-7.

Masini, E. B. (2012). Intergenerational responsibility and education for the future. *Futures,45,* S32-S37. doi: 10.1016/j.futures.2012.11.005.

Mayer-Smith, J., Bartosh, O., & Peterat, L. (2007). Teaming children and elders to grow food and environmental consciousness. *Applied Environmental Education & Communication, 6*, 7-85.

Mayer-Smith, J., Bartosh, O., & Peterat, L. (2009). Cultivating and reflecting on intergenerational environmental education on the farm. *Canadian Journal of Environmental Education, 14*, 107-121.

Mayer-Smith, J., Lee A., Bartosh, O., Peterat, L., Sinkinson, S., & Tsepa, M. (2004). *Teaming science and environmental stewardship on the farm through an intergenerational experience.* Paper presented at the NARST 2004 Annual Meeting, Vancouver.

Mead, M. (1969). The generation gap. *Science, 164*(3876), 135-135.

McIntyre, L. J. (1999). *The practical skeptic: Core concepts in sociology*. Mountain View, CA: Mayfield Publishing.

Merriam, S.B. (1998). *Qualitative Research and Case Study Applications in Education*. San Francisco, US: Joey-Bass Publishers.

Moody, G. L., & Hartel, P. G. (2007). Evaluating an environmental literacy requirement chosen as a method to produce environmentally literate university students. *International Journal of Sustainability in Higher Education, 8*, 355-370.

Pain, R. (2005). Intergenerational relations and practice. *International Centre for Regional Regeneration and Development Studies (ICRRDS),* 1-46.

Palmer, J. A. (1998). *Environmental education in the 21st century: Theory, practice, progress, and promise*. New York: Routledge.

Pěer, S., Goldman, D., & Yavetz, B. (2007). Environmental literacy in teacher training: Attitudes, knowledge, and environmental behaviour of beginning students. *Journal of Environmental Education, 39*, 45-59. doi: 10.3200/JOEE.

Peterat, L., & Mayer-Smith, J. (2006). Farm friends: Exploring intergenerational environmental learning. *Journal of Intergenerational Relationships, 4*, 107-116.

Poole, G. G., & Gooding, B. A. (1993). Developing and implementing a community intergenerational program. *Journal of Community Health Nursing,* 10(2), 77-85.

Pooley, J. A., & O'Connor, M. (2000). Environmental education and attitudes: Emotions and beliefs are what is needed. *Environment and Behavior, 32*, 711-723.

Reeves, S., Kuper, A., & Hodges, B. D. (2008). Qualitative research methodologies: Ethnography. *British Medical Journal, 337*(7668), 512.

Riley-Taylor, E. (2002). *Ecology, spirituality, and education, curriculum for relational knowing.* New York: Peter Lang.

Salkind, N.J. (2006). *Encyclopedia of human development*. Thousand Oaks: Sage Publications, Inc.

Stapp, W. B. (1969). The concept of environmental education. *The Journal of Environmental Education, 1*(1), 30–31.

Sutherland, D., & Ham, S. (1992). Child-to-parent transfer of environmental ideology in Costa Rican families: An ethnographic case study. *The Journal of Environmental Education, 23*(3), 9–16.

Uzzell, D. (1994). Children as catalysts of environmental change [Final report]. London, England: European Commission Directorate General for Science Research and Development Joint Research Centre.

Vaughan, C., Gack, J., Solorazano, H., & Ray, R. (2003). The effect of environmental education on schoolchildren, their parents, and community members: A study of intergenerational and intercommunity learning. *The Journal of Environmental Education, 34*(3), 12–21.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

APPENDEX A

Intergenerational Learning of Farm Friend In ILLP at UBC Farm:

Please answer the following questions as honestly as possible. There are no right or wrong answers. This survey is voluntary and your answers will be anonymous. If you have any questions, please ask the researcher.

Thank you for your help in filling out the survey ☺

Researcher: Caitlin Chen

(UBC Graduate Student)

E-mail: cc90423@126.com

Tel: 778-237-2675

Name: _____

School Name: _____

Name of your group: _____

Age group: 18 – 29 _____ 30 – 39 _____ 40 – 49 _____

50 – 59 _____ 60 – 69 _____ 70 – 80 _____

Gender : Male _____ or Female_____

How long have you been volunteering in this program?

: _____ months or _____ years

How did you learn about the program? (Please circle one answer)

: Friend / Poster / Website / Other: _____

Have you had any experience mentoring children before?

YES___ or NO___

How many years of experience of gardening or farming do you have? _____

E-mail or telephone # (please provide the one you prefer to be contacted at)

Email _____

Tel _____

Study of Intergenerational Relationship

In the Landed Learning Program at UBC Farm, you are working with a small group of children. The questions below ask about the relationships between you and children in your group in the Landed Learning Program. Please answer each question by circling one answer that is best for you. Thank you.

	Never 1	Sometimes 2	Often 3	Always 4
1. Children in my group respect my feelings.	1	2	3	4
2. Children in my group understand me.	1	2	3	4
3. I trust the children in my group.	1	2	3	4
4. Children in my group pay attention to me.	1	2	3	4
5. I get along well with the children in my group.	1	2	3	4
6. Children in my group are proud of the things we do.	1	2	3	4
7. In ILLP at UBC farm, I can count on the children in my group when we have a problem.	1	2	3	4
8. I am satisfied with the relationship I have with the children in my group.	1	2	3	4
9. I feel good about how well the children in my group and I worked together during this year.	1	2	3	4
10. I like the children in my group this year.	1	2	3	4

Study of Intergenerational Relationship

The questions below ask about you and the adult Farm Friends you work with this year in your small group. Please choose only one answer for each of the following questions. Thank you.

	Never 1	Sometimes 2	Often 3	Always 4
11. I like the adult Farm Friend(s) I work with in my group this year.	1	2	3	4
12. The adult Farm Friend(s) in my group respect my feelings.	1	2	3	4
13. Farm Friends in my group understand me.	1	2	3	4
14. I trust the adult Farm Friend(s) in my group.	1	2	3	4
15. The adult Farm Friend(s) in my group pay attention to me.	1	2	3	4
16. I get along well with the adult Farm Friend(s) in my group.	1	2	3	4
17. The adult Farm Friend(s) in my group are proud of the things we do.	1	2	3	4
18. In ILLP at UBC Farm, I can count on the adult Farm Friend(s) in my group when we have a problem.	1	2	3	4
19. I am satisfied with the relationship I have with the adult Farm Friend(s) in my group.	1	2	3	4
20. I feel good about how well the adult Farm Friend(s) in my group and I work together during this year.	1	2	3	4

21. How do you divide up the work and responsibility with Farm Friend(s) in your group?

_____

_____

22. Do you think that you and your FF partner have different values and ideas in terms of what is good teaching and what is good learning?

Yes_____ No_____ Maybe_____

Overall Feeling about ILLP

Please tell us about your experiences in the Intergenerational Landed Learning Program (ILLP) at UBC Farm. For each question, please circle the answer that is best for you. Please choose only one answer for each question and make sure you answer ALL of the questions. Thank you.

	Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4
23. I understand the ILLP Curriculum and feel prepared before each visit.	1	2	3	4
24. I feel no stress to teach and learn in ILLP at UBC farm.	1	2	3	4
25. As a FF, I enjoy taking part in discussions and activities in ILLP (FF meeting, Saturday work parties, family day, etc.).	1	2	3	4
26. Children in ILLP at UBC Farm will have a good chance in being successful in gardening.	1	2	3	4
27. I enjoy working with the small group of children in ILLP at UBC farm this year.	1	2	3	4
28. I have learned from my Farm Friend partner in my group.	1	2	3	4
29. I think ILLP at UBC farm is a great project to put informal learning into practice.	1	2	3	4
30. I would recommend someone to participate in the ILLP at UBC farm.	1	2	3	4

THANK YOU

Caitlin Chen

Appendix B

Semi-Structured Interview Questions:

Before this interview, I will briefly introduce my research topic and objectives to my interviews, and ask if they have any question for me or for this interview. In addition, I will get their permits to record our conversations. The questions are as follows:

Warm-up Conversations:

What is the most impressive thing that has happened to you during your volunteer time in ILLP at UBC farm? Can you share that with me?

1. Please tell me the three most valuable knowledge or skills you have gained by joining this program.

2. What are the factors that affect your learning in this project?

3. What are your expectations from your FF experience in this project?

4. In your opinion, what is good teaching? And what is good learning?

5. Do you think your FF partner and you hold the same beliefs in terms of teaching and learning? How do you often choose to divide up the work and responsibility with your FF partner? Why?

6. Can you please tell me more about the relationships you have built with your FF partner, other farm friends, and the children in your group?

7. What do you think influences your relationships with other generations? For example, are you and your FF partner in different generations? How does that affect your teaching and learning experience?

8. In your opinion, what are the obstacles and difficulties when working with children and adults?

9. Is there something you dislike when working with them?

10. Does this kind of intergenerational interactions affect your life? If so, how?

11. Do you think that an informal learning experience like ILLP at UBC Farm can facilitate people's learning? And if so, why?

12. From your experience as a FF, could you tell me, in your opinion, what can be improved in the ILLP?

Thanks.