

# **Parental Learning Experiences with Children Active in 4-H**

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Table of Contents

Abstract.....	4
Introduction.....	4
Purpose.....	6
Key Definitions.....	6
Literature Review.....	7
Introduction.....	7
Agricultural Literacy.....	9
Agricultural Literacy Studies.....	12
4-H History & Benefits.....	13
Conclusion.....	16
Methodology.....	17
Interpretive Framework.....	17
Theory.....	18
Research Design.....	19
Sampling/Population.....	20
Data Collection Instrument Development.....	21
Interview Protocol.....	21
Data Analysis.....	22

Limitations .....	23
Findings.....	23
Discussion and Recommendations .....	26
Conclusion .....	27
References.....	29
Appendix A – Extension Agent Invite.....	35
Appendix B – Parental Invite.....	36
Appendix C - Consent Form.....	37
Appendix D - Script.....	40
Appendix E - Focus Group Transcript.....	42
Appendix F- Interview Notes.....	44

## **Abstract**

This study was a qualitative pilot study conducted on the optimal questions and venue of data collection on the learning experiences of adults with children active in 4-H. 4-H provides youth development and STEM literacy education across the U.S. and internationally. 4-H was originally developed to help increase adoption of science-based practices by adults in rural communities. The concept was that the 4-H program trained the youth and had them demonstrate the value of the new methods to their parents. If parents learn as a result of having children in 4-H, 4-H may serve as a venue for increasing adult agricultural and STEM literacy. However, previous studies found on the learning impact of 4-H on adults focused on 4-H volunteers who receive additional subject matter training. This project was intended to explore the learning experiences of parents of 4-H members who did not serve as volunteer leaders.

## **Introduction**

Agricultural literacy levels, and science as a whole, are at an all-time low in the adult population in the United States (Cronin & Messemer, 2013). Consumers are ill-informed on where their food comes from and what is truly involved in its production. As a result, they are not able to make decisions based in fact. Agricultural literacy means that one can hold a conversation and make statements and judgments based on facts concerning agricultural issues (Hess & Trexler, 2011). The average consumer today has little working knowledge of food and fiber or natural resources industries that are a vast part of their everyday lives. Having educated and knowledgeable citizens should be a top priority for us all. By having an understanding of what agriculture truly is and what affect it has on every individual, more people will be able to

make educated decisions and not be influenced by campaigns that are trying to create an “informed public” with inaccurate, often emotion based, information (Kovar & Ball, 2013).

4-H clubs were originally established to teach youth about new farming techniques so that the future generations would have these updated techniques and technologies (Reck, 1951). This also made it so they could disseminate the information to their parents. As 4-H clubs have grown, the impact of these on the youth participating has overshadowed the secondary purpose for which they were established. 4-H has helped youth grow and develop the life skills necessary to be successful people, citizens and professionals while continuing to emphasize project-based learning (Lerner & Lerner, 2013). 4-H emphasizes STEM education while also helping youth gain skills for independent living and leadership (Rice, Rugg, & Davis, 2016). In spite of 4-H’s beginnings, there was not any literature or research into the effects of children’s experience in 4-H on their parents’ knowledge found. Therefore, this study was intended to investigate the impact of having a 4-H member in the household on learning occurring by the 4-H’ers parents. The purpose of this project was to explore if parents learn as a result of having children in 4-H and if so, what did they learn. However, challenges associated with the COVID-19 pandemic made it impossible to schedule focus groups and interviews as intended. Instead this report provides insight into the methodology developed and recommendations of this project, treating it more as a pilot study. This project is intended to support further work related to the learning of parents as a secondary impact of 4-H. A means to see if 4-H can affect an adult’s agricultural literacy level is to determine if there is any passive learning by parents with children in 4-H.

## **Purpose**

The purpose of this qualitative phenomenological pilot study was to explore the optimal data collection method to explore the learning by parents/guardians of children who participate in 4-H. Determining if the parents learned and what parents learned is part of the social cognitive aspect of the study. Exploring whether parents are learning about life skills, such as leadership, or agricultural content, for example where food items originate, will begin to determine the learning that parents attained. This research will be used to lay the foundation for future work that can delve into the hidden benefits of 4-H for adults. A study was conducted that collected data via virtual and in person interviews and focus groups. This pilot study will assist in understanding the best fit for future a phenomenological study related to what parents or guardians learn as a result of having a child in 4-H.

## **Key Definitions**

4-H – Youth organization that provides opportunity for exposure to topics and skills not readily available in school or in general population. Administered by the county Cooperative Extension System through the state land-grant university.

Agricultural Literacy – Requires one to possess an understanding of and an ability to engage in conversations about the agri-food system. (Kovar & Ball, 2013)

Community Clubs – 4-H groups created within a community that does not have any specific topic. These clubs perform community service projects and discuss and learn around wide array of subjects or projects.

Focus Groups – A sample of participants selected from a community to provide a wide range of responses to provide data to better understand different perceptions of an issue.

Learning – n: knowledge acquired by systematic study; the possession of such knowledge

v: acquire knowledge of or skill in as a result of study, experience, or instruction; acquire or develop an ability to do (Rossman & Rallis, 2017)

Life Skills – a skill that is necessary for everyday life.

Project Clubs – 4-H groups that meet around a specific topic, such as Horse and Pony Clubs or Livestock Clubs

Social cognitive framework – Understanding how people actively shape and are shaped by their environment.

## Literature Review

### Introduction

Perceptions of agriculture must change as the world's population demands change. Without agriculture the world would be without proper food production to feed the masses. With the expected global population to reach nine billion people by 2050, those that are not involved in agriculture need and want to understand where their food originates (Kovar & Ball, 2013). The population boom and the corresponding demands affects agriculture. There is need for increased food production to feed a larger population. In addition, the efficiency of food production must be increased because less land is available because of increased urbanization.



Furthermore, increasing agricultural literacy reduces potential for policies and laws to be passed that are detrimental to necessary practices associated with food production.

In the 2008 Farm Bill, the USDA created the National Institute of Food and Agriculture (NIFA). NIFA was created to provide the leadership and funding for those programs that advanced agriculture-related sciences and to help ensure the long-term viability of American agriculture by distributing the cutting-edge information and technology to the people who can put it into practice (National Institute of Food and Agriculture, 2018). NIFA works with policy makers, scientists, researchers and many other impactful individuals to bolster American agriculture and improve the well-being of American citizens. It also established the Cooperative Extension System.

The American Association for Agriculture Education's (AAAE) identified seven research priority areas for 2016-2020 (Roberts, Harder, & Brashears, 2016). Priority one is providing "Public and Policy Maker Understanding of Agriculture and Natural Resources" (Roberts, Harder, & Brashears, 2016). This section concluded that there is still more work to do in finding appropriate avenues to bring agricultural literacy levels up. The agricultural industry wants to focus on, and highlight, the fact that Americans do not understand agricultural and natural resource or its influence on society (Roberts, Harder, & Brashears, 2016). In the AAAE National Research Agenda, the fourth priority is providing "Meaningful, Engaged Learning in All Environments" and the fifth priority is developing "Efficient and Effective Agricultural Education Programs" (Roberts, Harder, & Brashears, 2016). This speaks to how citizens can increase their literacy level and how educators and industry individuals can make that difference.

4-H is one avenue for bringing youth agricultural literacy level up. The findings from this and future studies could initiate programs provided by 4-H that assists in increasing science and agricultural literacy for parents.

Youth that have participated in research into the benefits of 4-H have shown by their actions and own words how impactful the clubs activities were (Fox, Schroeder, & Lodl, 2003). A beginning point of this research could attain an understanding of how the youth share their information and in turn how this affects their parents' knowledge and behavior. Throughout the history of the 4-H program, benefits to youth have been far reaching and continual even after leaving the program (Fox, Schroeder, & Lodl, 2003). A longitudinal study that was repeated annually for eight years conducted by Tufts University and the Institute for Applied Research in Youth Development shows the positive impact on youth (Lerner & Lerner, 2013). The study shows for all age groups and genders, the effects are vital in providing a strong foundation for years to come for many different aspects of life. 4-H'ers were more active in higher level science courses and participated in programs that revolved around science, engineering and technological subjects (STEM). These individuals increased their science literacy levels in school due to the exposure in the 4-H club.

### Agricultural Literacy

Concern around agriculture literacy dates to the 1980's when the National Research Council published a research article that listed the concerns for agriculture education titled "1988 Understanding Agriculture: New Directions for Education" (Kovar & Ball, 2013). Meischen and Trexler (2003) found that agricultural literacy efforts focused on urban and suburban

populations. They compared rural to urban adults and found the urban adults to be lacking in knowledge of agriculture. The study also found that rural non-farm participants were lacking agricultural knowledge (Meischen & Trexler, 2003). The National Academy of Science Research Council recommended that 1) the subject matter of instruction in and about agriculture be broadened and 2) all students receive some systematic instruction about agriculture beginning in kindergarten and continuing through twelfth grade (Frick, Kahler, & Miller, 1991). As technology and basic human innovations have evolved and new discoveries have been made, the standards mentioned previously have been lumped into life sciences and the STEM push for in- and after- or out-of- school programs (National Research Council of the Nat. Acadamies, 2012). This sets future students up to be better educated and to become agriculturally literate adults. However, adults need to have an opportunity to increase their levels of basic agriculture knowledge as well. School programs were not established for current adults whom are the current consumers. The 4-H Science Initiative was created in 2006 in order to address the need to increase STEM interest and use by youth (Locklear, 2013). Heck, et.al (2012) reported that youth who participated in 4-H in elementary school demonstrated greater interest in STEM by taking more science classes and taking higher level science classes in high school. This emphasizes the impact that the Science Initiative has had on youth (Heck, Carlos, Barnett, & Smith, 2012).

The most recent and comprehensive definition of agricultural literacy was penned as “the knowledge and understanding of agriculturally related scientific and technologically-based concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity” (Frick, Kahler, & Miller, 1991; Meischen & Trexler, 2003, p. 44). Frick et al. (1991) identified 11 concept areas of agriculture literacy. They are 1.)

agriculture’s important relationship with the environment; 2.) processing of Agriculture products; 3.) public agriculture policies; 4.) agriculture’s important relationship with natural resources; 5.) production of animal products; 6.) societal significance in agriculture; 7.) production of plant products; 8.) economic impact of agriculture; 9.) marketing of agriculture products; 10.) distribution of agriculture products; and 11.) global significance of agriculture. Each concept is an attempt to set simple standards to establish agricultural literacy across the globe. A simplified definition of agricultural literacy “requires one to possess an understanding of and ability to engage in conversations about the agri-food system” (Hess & Trexler, 2011, p. 1). In-school agriculture education programs can be a major factor in creating this level of literacy. Out-of school programs, such as 4-H, are another avenue to assist in this endeavor.

The 2017 Annual Report from the National 4-H Council shows the impacts that 4-H is having nationally on career selection by highlighting 4-H alumni and where they are now. Projects that youth undertook are showcased and the many different areas that 4-H touches from agriculture to civic engagement (National 4-H Council, 2018). Agriculture education professional organizations and the scientific community have made the agricultural literacy level of K-12 students a national priority which only supports the fact that these educational programs are the springboard for increasing the national agricultural literacy level. 4-H clubs are one such education program that has set their standards with the intention of raising literacy levels for many subjects. With the increasing need to revamp the overall teaching methods, and standards much more can be done to develop a curriculum that addresses the agri-food system (Hess & Trexler, 2011). With the changes in technology between 1988 and 2018, the framework and levels of agricultural literacy have to be updated to match the times (Kovar & Ball, 2013).

### Agricultural Literacy Studies

Frick, Birkenholz, Gardner, and Machetmes (1995) established a groups' perceptions of a subject and determining the level of knowledge, educators can create lesson plans and education programs that are tailored to that group. They concluded that every community is different and therefore must evaluate and establish their own benchmarks (Frick, Birkenholz, Gardner, & Machetmes, 1995). This study could be adjusted to be used on parents in a county's varying 4-H clubs to begin establishing programs that could be implemented. Hess and Trexler interviewed youth on their understanding of food and plant products. They found that the participants held incorrect interpretation and lacked the ability to discuss the agri-food system (Hess & Trexler, 2011). A 4-H Extension Agent could assess the schemata and level of agricultural knowledge of current parents and when new parents start with their children in a program. This can be used to create the benchmark. When creating an education program or project, one must consider the target group such as the participants' background. With the benchmark established one can determine the basic level of agricultural literacy which is developed by science and agricultural educators for all ages of Americans (Meischen & Trexler, 2003). Anderson, Velez and Thompson found that participants equated the agricultural industry with only two areas, plant production and animal production (Anderson, Velez, & Thompson, 2014).

Agricultural and science, in general, are being tested by the demand and constraints being pressed on them by the global population. Citizens should possess some understanding of what the agricultural industry and scientific impacts means for them. There have been, and will continue to be, room for improvement for all citizens' level of literacy. Education programs need to be made available to a much larger population, and in more places, to meet the educational

needs to increase the agricultural literacy levels (Frick, Birkenholz, Gardner, & Machtmes, 1995). By designing educational programs in and outside of school for all people to show the ins and outs of modern agriculture more people can understand the environmental, social, and economical trade-offs associated with food production (Meischen & Trexler, 2003).

Because most agricultural literacy studies are published in journals, the average citizen does not have exposure to these. The agriculture field can expand the focus to include broader audiences to disseminate the information. Publishing in non- agriculture education venues and marketing the research to wider audiences will help to open the eyes and ears of America's citizens (Kovar & Ball, 2013). As science encompasses agriculture, one study looked into the civic science literacy of adults and how an outdoor non-formal program impacted literacy levels (Cronin & Messemer, 2013). Over time, the impacts of adults re-engaging with science and learning how it impacts their everyday lives, will result in other members in the community experiencing this new knowledge. Taking the model for this study could be used as a 4-H club that is for youth and parents to affect their science literacy levels.

#### 4-H History & Benefits

The history of the 4-H clubs and programs varies by state and community slightly but for the most part they all have the same basic historical timeline. In the late 1800's adults were wary of new agricultural developments and youth were more open to these new ideas and would demonstrate to adults that the new technologies worked better (Reck, 1951). Communities began to see a connection between youth learning about the industries and translating information to their parents. In 1902, A.B. Graham started a "Tomato Club" or "Corn Growing Club" in Clark

County, Ohio, considered to be one of the precursors to the 4-H clubs (Wessel & Wessel M, 1982). There were many others that were doing the same thing at the same time throughout the country (Reck, 1951). The symbol for the 4-H is a four-leaf clover with a letter “H” on each leaf that was established after World War I (Wessel & Wessel M, 1982). Each “H” stands for a different part of what would later become the motto for the 4-H; Head, Heart, Hands and Health. Jessie Field Shambaugh developed the symbol in 1910, and by 1912 the clubs were called 4-H clubs (National 4-H Council, History, n.d.).

Clubs are supported by the local government through the Cooperative Extension organization provided by the state land-grant university. In 1914 the passage of the Smith-Lever Act created the Cooperative Extension system which provides 4-H (Reck, 1951). The original primary concern was improving agricultural production (Wessel & Wessel M, 1982). By having the experts readily available to the local communities the hope was that with the youth involved, parents would be more willing to be involved and open to the new research faster. Today 4-H is across the nation and across the globe, involving a wide range of peoples and addressing varied subjects and topics to help the youth of tomorrow to be well rounded citizens (National 4-H Council, 2018). Through the expansion of youth participation, parents could potentially become involved with their child’s 4-H projects and programs.

The benefits of 4-H programs are plentiful. Youth are exposed to a wide variety of subjects that they may not have contact with. STEM is a major factor for 4-H clubs to continually integrate into the program because of the importance of these subjects for the future (National 4-H Council, 2018). 4-H works with the schools to bolster the learning that children

are experiencing in school. Throughout the duration of participation many youth gain skills that have a far-reaching impact. The projects that youth participate in also instill ideologies and work ethic by teaching and showing youth new and fun ways to incorporate hobbies into jobs and careers (Lerner & Lerner, 2013).

The number of studies showing how 4-H benefits the youth participants is expanding every year (Lerner & Lerner, 2013). However, the benefits of 4-H to the parents that are not volunteers is not as heavily studied. There has been a positive correlation found between the competencies of the volunteers and the skills learned by the youth (Radhakrishna & Ewing, 2011). When the adults are enthusiastic and welcoming, youth were more inclined to retain life skills. Astroth and Haynes (2002) found that 4-H provides youth with confidence, competency and connectivity to the world around them. One study investigated the readiness of adult 4-H club volunteers' lifelong learning (Kungu, Machtmes, Prieto, & Jabor, 2012). Those adults that served as 4-H club volunteers showed "high readiness" towards lifelong learning. However, the sample was predominately married middle aged mothers that had at least a bachelor's degree (Kungu, Machtmes, Prieto, & Jabor, 2012). This can speak to the type of person that would already be involved in volunteering; therefore, one would want to look into how to expand the population and recruitment of more various volunteers.

Much of the literature shows the benefits of 4-H for the youth (Fox, Schroeder, & Lodl, 2003). That shows how important these programs are to help develop youth into functioning adults. However, more effort needs to be made to look into the learning of the parents involved with 4-H. Parents often feel pressed for time and trying to add additional education on top of



devoting time can be a reason for less parents involved with their children in programs (Lesmeister, Green, Derby, & Bothum, 2012). Creating a program that parallels parent learning and a youth program to work with the time adults are already devoting will be one step in the right direction (Lesmeister, Green, Derby, & Bothum, 2012).

### Conclusion

Parents of 4-H participants can gain knowledge about agriculture from their children and the projects they do. Agricultural literacy levels need to be increased across the United States to ensure that American agriculture survives to meet the continual increase in global population. A recommendation for increasing science and agricultural literacy in 4-H programs would be to create challenges that involve the community in problem-based learning activities (Rice, Rugg, & Davis, 2016). 4-H programs have been shown to have great benefits for participants and volunteers, however, the effects on a parents' agricultural literacy level has not been measured. 4-H is one of those programs already in place that can effectively meet these requirements (Locklear, 2013). Being that these programs already exist and are in place, money can be saved and/or reinvested into furthering market strategies to increase participation. These programs have the agricultural literacy standards integrated and have been in use for years, people just need to be made more aware of the opportunities and parents of members too could use more time participating with their children in more events, projects and activities as well (Smith, Worker, Ambrose, & Schmitt-McQuitty, 2015).

## Methodology

This study was approved and revised as Virginia Tech IRB #19-735. The overarching question for this study was to explore if parents learn, and if they learn, then what do they learn.

The following research questions guided this work:

- 1.) How has your knowledge changed as a result of having your child involved in 4-H activities?
- 2.) What have you learned about from your child's 4-H activities?
- 3.) What contributed to your learning as a result of having your child involved in 4-H?
- 4.) How do you use what you learned?

As a result of COVID-19, the overarching research question was shifted to determine if the questions and methodology presented would support answering the research questions in a future study.

## Interpretive Framework

The interpretive framework for this study is based in the ontological view. Being that every individual sees and interprets reality differently, there are many views (Merriam, Caffarella, & Baumgartner, 2007, p. 196). Social constructivism also plays a vital role in the focus group study in that individuals seek to understand the world in which they live and work (Creswell & Creswell, 2018). Interactions with their children and the 4-H activities can have an effect on the understanding and in turn possibly change behaviors. The viewpoints are varied and multiple even for individuals in the same household and having experienced the same situations.

The researcher inductively develops a theory or pattern of meaning by recognizing that individual and own backgrounds shapes interpretation (Creswell & Poth, 2018). Reality is co-constructed between researchers and researched and shaped by individual experiences. The researcher honors individual values and negotiates among individuals (Merriam & Tisdell, 2015).

### Theory

The theoretical framework for this paper centers on the cognitive theory. Cognitive theory states that the memory system is an active organized processor of information and that prior knowledge plays an important role in learning (Nesbit & Leach, 2004). This theory was collectively created by Gestalt psychologists, such as Jean Piaget. Gestalt, a German word for pattern or shape, indicates they looked at the whole rather than the parts or the patterns throughout (Merriam, Caffarella, & Baumgartner, 2007). Piaget’s research on developmental psychology is considered to be the basis for the constructivist theory (Piaget, 1964). Ideas are based on pre-conceived thoughts on how something is and why things are. Jean Piaget focused on the internal processes of learning. He suggested that there were four different stages that people went through in cognitive development (Piaget, 1964). The fourth stage had the greatest bearing on adults and later works. The fourth stage, formal operational stage, is where a person has “an ability to reason hypothetically, logically and systematically” (Merriam, Caffarella, & Baumgartner, 2007, p. 326). With this stage, one is considered to be able to think abstractly. Cognitive development has an emphasis on qualitative rather than quantitative developmental changes and is more meaningful when learning through activity. For adults that may not directly

participate with their children but inquire of their child's projects and events adults can still learn.

This qualitative research focuses on phenomenology by focusing “on the experience itself and how experiencing something is transformed into consciousness” (Merriam & Tisdell, 2015, pp. 25-26). By investigating the phenomenon of adults learning from their children and establishing what it is they learned, the researcher can follow through with finding out how the adults apply this knowledge. The phenomenon being studied is the participation of children in 4-H, prompting the research question of how this affect their parents. The phenomenon elicits the research questions that explore the learning that parents experience and what it is that they learn. As a pilot study, the questions and corresponding answers from participants were reviewed. 4-H focuses on youth, however, adults that volunteer or participate with their children observe activities and have the potential to learn and gain new knowledge. 4-H clubs are comprised of groups of youth and volunteers and often meet with other clubs or interact during competitions. Learning “can occur on a vicarious basis through observation of other people’s behavior and its consequences for the observer” (Merriam, Caffarella, & Baumgartner, 2007, p. 288). Later research will be able to look into the impact this knowledge has on an adult’s agricultural literacy level.

### Research Design

Phenomenological studies collect information from a number of participants and describe what they have in common as they experience a specific phenomenon (Creswell, Hanson, Plano

Clark, & Morales, 2007). The phenomenon being studied in this case would be having a 4-H member in the household.

### Sampling/Population

The participants were recruited from 4-H parents in the counties of Campbell, Bedford and Franklin in order to provide a variety of populations from different types of communities. Bedford and Franklin counties are more rural with towns spread throughout the counties while Campbell County is more sub-urban to urban. This allowed for a wider data sample that would have an expansive knowledge set and agricultural experience level and understanding.

Participation was elicited by having the 4-H Extension Agent send out an email requesting, those that were participating in the upcoming meeting, if they would be interested and willing listen to the invitation to participate in the focus group (Appendix A). Adults from three different 4-H clubs from three different counties were asked to participate in focus groups or interviews. The use of the three counties allowed for a wider demographic setting for participants from rural to urban based on State census data. This ensured that deeper and richer information was attained. By using a variety of 4-H clubs agriculture was not directly implied because community clubs are broad in their topics covered unlike project-specific clubs, such as livestock clubs. 4-H Community clubs cover topics from STEM and agriculture with life skills incorporated. There was also a 4-H Homeschoolers club and 4-H Horse and Pony club that were used to attain participants. The focus group setting enabled participants to be open and have the ability to build off of one another. With others in the group, participants had something “jog their memory” which provided more depth to data (Morgan, 1997). One telephonic interview was

added due to limitations with scheduling and the pandemic. Data collection was held at a mutually agreeable time and place. This was intended to facilitate data collection that was not rushed and created an amiable and comfortable environment.

#### Data Collection Instrument Development

The researchers committee initially reviewed the focus group protocol. The researcher had a focus group of extension agents that have or had children participate in 4-H evaluate and give feedback and recommendations. This served as a panel of experts and pilot study to ensure transferability in execution of the focus group. The questions asked during the focus group were based on the question of do parents learn from their 4-H members and if so what do they learn. One Extension Agent used his child in boy scouts to answer the questions. There was a selection of open-ended questions used as warm-up questions at the beginning of the focus group.

At the onset of this study, the researcher asked for participation by having an advisor and a local 4-H extension agent help to recruit participants. The researcher then sent out an email (Appendix A) with the body of it containing the recruitment information and consent asking if they would be interested and willing to participate in the focus group (Appendix B). The script used for the focus groups and phone interview is included in Appendix D.

#### Interview Protocol

Participants were asked to respond to the four questions. Focus group and interview protocol is provided in Appendix D. The questions asked during the focus group were based in the question of do parents learn from their 4-H members and if so what do they learn. There was a selection of closed and open-ended questions used as warm-up questions at the beginning of

the focus group. Close-ended questions used established the parents' age range, highest level of education, child's age range, and years in 4-H. The open ended questions centered on the research questions (Appendix D). Inquiring of what the parents perceived as learning allowed us the ability to see from their point of view (Merriam & Tisdell, 2015). Because of the social cognitive theory and constructivist theory that this research is framed around, the collective answers of the participants also portrayed an image of what the 4-H experience is to them.

### Data Analysis

Following the focus group, the data was transcribed verbatim from an audio recording (Appendix E). The transcript was reviewed by the focus group members to increase validity through member-checking (Merriam & Tisdell, 2015). One participant did make note of a response that was transcribed incorrectly. The original transcript indicated that the participant had been involved in 4-H growing up, but they indicated they had not been after reviewing the transcript. The transcript was revised with the correct information. The data gained from the transcript was themed for the first cycle of coding (Saldana, 2016).

The interview on the phone was not audio recorded. Notes were taken during the phone interview which were used for the comparison of responses from the focus group (Appendix F). Granted, this did not hold the same strength as the verbatim transcribed audio recording. There is not as much in-depth data and it does not capture every word from the interview (Creswell & Creswell, 2018). The interviewee was able to provide examples of experiences that broadened her exposure to learning due to the fact that she had five children that had varying interests.

## Limitations

The primary limitation is this study uses the qualitative research method causing data to relate only to the group studied and cannot be generalized to other groups. Further research, that can be expanded to include other clubs, will be able to account for more parents and passive learning opportunities. This project had to be amended due to the COVID-19 global pandemic. This limited the researcher's ability to meet with groups. A number of participants were also involved in the medical field and were too busy to participate.

## Findings

Through the warm up questions, it was determined that half of the four participants had been in 4-H growing up. All individuals had post high school education of some kind. Their children were varied in ages with a range from 10 to 18 and an average of 12. The children's interests were wide and varied in subject matter and participation level. The in-person focus group with three participants in Franklin County and one individual interview from Campbell County were conducted. The focus group participants were three mothers of active 4-H members. The age and number of children varied, as did the length of 4-H participation. The one interview was a mother of five children, all whom had or were current 4-H members.

After theming the open-ended research responses there were similar statements between the three focus group participants and the one interviewee (Saldana, 2016). Due to the differences in child interests there were mostly unique responses but there were a few commonalities, obvious and implied. There were notes taken during the focus group to capture the "in the moment" feeling and to assist in analysis and reflection. There was a happy and



laidback feel to the group which allowed participants to be open with their responses. The themes that were found were parental interaction/participation levels, child's interest/activity levels, and activity variations. Once the themes were identified the data was coded via pattern coding (Saldana, 2016). The pattern that emerged was the parental interaction level was dependent on the child's participation level. The parents that had children with a wider set of interests, and activities that they participated in, found themselves more involved and more engaged with the learning. One statement made was "This gives us more interaction with the community and with each other giving us something that we can do together and talk about". This emphasized the fact that the more the youth had interests in the more the parents were involved. It also gave family time a new meaning for all. Participants remarked on planning and organizing being a skill that was sharpened for themselves and had assisted their children in many aspects of life and school.

Another participant commented on a different aspect of her child's activities; preparation. Personally, I have learned a lot about the rules and regulations for the State 4-H horse show. There are a lot of rules you have to know and the entry forms are difficult. We get them wrong every year. I have learned a lot about the equestrian side. I think the rules and regulations, in and of themselves, for the horse show forces me to understand and know so that I don't set her up for failure. If you don't have everything and she doesn't have everything then she cannot participate. There are things that the district level requires and then there are requirements for the state level and they are not the same.

This child was involved in one competition; however, it was at a higher level that required more dedication from both the child and the adult. Learning about 4-H and its history and opportunities was discussed by the interviewee and a member in the focus group.

All participants discussed the exposure to new topics and opportunities that everyone could be involved in and collaborate on those new interests in the children and adults at home. The guest speakers and trips that different clubs planned or hosted were the biggest impacts on the participants' learning and knowledge changes. One participant remarked

Washington D.C. I had never done that trip, nor ridden the train. All of the metro around D.C. and visiting the National 4-H center I had never done and was all educational. I had visited the museums in D.C. before. The hiking trips that we have done in previous years. I had not been to all of those locations before. That was fun and educational to see all of the new places.

When completing both the interview and focus group, the participants had a hard time differentiating an answer between the first two questions: “How has your knowledge changed as a result of having your child involved in 4-H activities?” and “What have you learned about from your child’s 4-H activities?” Examples of possible responses were provided to participants for the two questions; however, they provided the same responses to the two questions.

The responses from the participants also pointed to how the social aspect affected their learning. Each participant remarked on the probability that if it were not for 4-H, they would not have attained certain knowledge from the guest speakers. Most guest speakers were attained by a member not the extension agent. These were everyday people talking with their friends and neighbors about everyday things that are not common knowledge. All participants remarked on

the group setting for the activities and how it affected their child(ren) which in turn affected them. Social cognitive theory posits that people learn through observing others (Merriam, Caffarella, & Baumgartner, 2007). The social constructivist view also puts emphasis on the social interaction creating a learning environment (Merriam, Caffarella, & Baumgartner, 2007). The children active in 4-H learned from one-another, and saw opportunities, about activities, competitions and projects available to them. Once the children showed interests, most parents were involved in some way, and learned vicariously and directly on these interests. Once projects and competitions were completed, members reported back to the group and disseminated their knowledge gained.

### **Discussion and Recommendations**

Having conducted an in-person focus group and an interview over the phone the researcher recommends the depth and breadth of data from an in-person focus group. The atmosphere within the small focus group was comfortable and created a collaborative space to delve into the learning experiences of the adults. Participants helped each other and bounced different situations off of each other. The focus groups, either face-to-face or virtual, gave more in depth data from the questions than the interview. The comparison between the interview and focus group were then reviewed by reading the responses as a whole, then selectively followed by detailed (Van Manen, 2016). This allowed for the findings to include the responses from both methods of data collection. The notes taken from the interview were still admissible due to the change in the final study endpoint (Maxwell, 2013). They gave some insight into the richness of the data gained from a virtual interview versus an in-person or virtual focus group.

A larger sample size would be the first and biggest impact on exploring the learning of the parents. Recruitment of male participants may also give a different view point into parents learning and how this knowledge is applied. It's recommended that the interview protocol undergo significant changes. Some participants interpreted the questions and prompts differently and clarification is needed for future work.

Another recommendation would be to change the pilot study focus group participants to consist of individuals from the same population as the target sample. After much reflection and discussion, the results of this study do show that there is some learning occurring when parents have children active in 4-H, however what type of learning is very dependent on the role that the parents take in those interactions. By using suggestions from those individuals that the researcher has rapport with and whom have gone through the questions, could ensure that the questions are understood by future participants.

## **Conclusion**

This study explored the learning that parents experienced in the phenomenon of their child's 4-H activities, meetings and events. Parents did experience some learning but it was focused on the child's activities not the content of the child's learning. The social construct of the clubs as groups of individuals within a community coming together did play a role in the experiences. This was due to the fact that ideas for trips, activities and guest speakers came from each individual, not just the Extension Agent. The data collection instrument produced data that showed there were some changes in knowledge but not in the agricultural literacy of the parents.

Science literacy, and the agriculture subcategory, is on the minds of policy makers, citizens and educators alike (Roberts, Harder, & Brashears, 2016). Out-of-school programs, such as 4-H, have shown to have a positive impact on youth, however, the passive learning that the parents may, or may not attain has not been found. Data collected will begin to attain an understanding of the affect that 4-H programs have on adults with children that participate. This pilot study sets the groundwork for future studies, and future findings could set a foundation for developing 4-H programs and projects for their applicability in affecting adults' science literacy levels. Programs and curriculum designs can be altered to incorporate parents more and new programs could be designed that brings parents into the activities more then what they do now. This can also be used to reevaluate those altered or new programs by exploring the learning that parents have experienced to ensure the longevity of said programs. Other groups may be able to review the findings, develop conclusions, and customize recommendations based on how they see the study fitting with their situation.

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## Appendix A – Extension Agent Invite

Dear Agent,

I am contacting you to request permission to come to a 4-H meeting to speak with the 4-H club parents to invite them to participate in a focus group. This project is part of my research for my master's degree that I am obtaining from Virginia Tech, working with Dr. Karen Vines. The IRB number for my project is 19-735.

The purpose of the focus group is to provide insight into the passive learning that adults with children active in 4-H may experience from their child's 4-H participation. Information gathered from these sessions could be used to develop future programs and understand the phenomenon of adult learning and possibly avenues of information dissemination. There are no direct benefits, however; participants may take the pleasure in knowing that they are contributing to research to strengthen 4-H and Extension programs in the future. I appreciate your participation in helping me to begin to grasp the possible implications that 4-H has on adults, as was the original purpose for the formation of 4-H clubs.

The focus group for your county and/or club will take place when a majority of parents are able to meet at their convenience and audio recorded for supporting documentation for the duration of the project. I've included a script to let you know what I plan to present at that time. I have also attached a consent form for your review. I will bring copies of the consent forms for the parents to the meeting. We will discuss this form and answer any questions during the invitation session.

Please respond and let me know if I may be able to attend the next monthly meeting to invite parents and set a time, date and place for the session. If I do not receive an email from you within the next week, I will follow-up with a phone call.

Please let me know if you have questions or would like additional information about the focus groups or this research project.

Thank you!

Sincerely,

Sarah Wysor Fink

540-798-9067

[defgoats@vt.edu](mailto:defgoats@vt.edu)

Graduate Student, Virginia Tech

OMALS Program- Education emphasis

Sarah Wysor Fink  
Parental Learning Experiences  
OMALS Program – Education Emphasis

## Appendix B – Parental Invite

Good Evening,

I am here this evening to invite you to be participants in a focus group or interview. This project is part of my research for my master's degree that I am obtaining from Virginia Tech, working with Dr. Karen Vines. The IRB number for my project is 19-735.

The focus groups or interviews are intended to provide information on the passive learning that adults with children active in 4-H experience. Information gathered from these sessions could be used to develop future programs and understand the phenomenon of adult learning and possibly avenues of educational programming. All sessions will be audio recorded for supporting documentation for the duration of the project. The criteria of participation is having a child active in 4-H for more than 1 year. There are no direct benefits, however; I appreciate your contribution to my research. 4-H was originally developed as a way to let youth and their parents experience new research findings, increasing knowledge and changing practice for both. Please help me explore the possible implications that 4-H has on adult learning.

Each of you should have received a consent form. Do you have any questions about the form or about this project?

The focus group or interview should last approximately 60 minutes.

Please let me know if you have questions or would like additional information about the focus groups, interviews or this research project.

Thank you!

Sincerely,

Sarah Wysor Fink  
540-798-9067  
defgoats@vt.edu  
Graduate Student, Virginia Tech  
OMALS Program- Education emphasis

## Appendix C - Consent Form

**VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY**  
**Informed Consent for Participants in Human Subjects Research**

**Title of Project:** Learning Experiences of Adults with Children in 4-H

**Investigators:** Karen Vines, Sarah Wysor Fink,

### **I. Purpose of this Research/Project**

This study is aimed at evaluating the learning that parents may go through when they have children in 4-H and what they learn. By recording what all of the participants experience around having their children in 4-H, an understanding of the phenomenon will be shaped. The data would create a picture of what parents experience and how they experience it. Science literacy, and the agriculture subcategory, is on the minds of policy makers, citizens and educators alike. Out-of-school programs, such as 4-H, have shown to have a positive impact on youth, however, the passive learning that the parents may, or may not attain has not been found. Data collected will begin to attain an understanding of the affect that 4-H programs have on adults with children that participate.

### **II. Procedures**

If you agree to participate, you will participate in an audio-recorded focus group session. Your name will not be recorded or attached to any use of the recording. The interview will last approximately 60 minutes.

### **III. Risks**

There are no known risks associated with participation in the session.

#### **IV. Benefits**

No promise or guarantee of benefits has been made to encourage you to participate. However, you may have the satisfaction of knowing that you have contributed important information to a study to explore the effect of 4-H on the parents. Participants will have the opportunity to review the transcripts to ensure validity by providing an email to the co-researcher at the end of this consent form.

#### **V. Extent of Anonymity and Confidentiality**

The information concerning your participation in the study will be kept entirely confidential by using a pseudonym or false name which the participant will select for themselves (e.g., “Jane Doe” = “Sussie Que”). At no time will the researchers release the data from the study in a way that identifies you as a part of this study to anyone other than individuals working on the project without your written consent.

**Please enter the pseudonym you would like to use-**

---

Each focus group will be audio recorded to accurately record participant statements. Only the student researchers and the research team will have access to the files. The audio files will be erased at the conclusion of this research project.

It is possible that the Virginia Tech Institutional Review Board (IRB) may view this study’s collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

#### **VI. Freedom to Withdraw**

Participation in this study is entirely voluntary. Refusal to participate will involve no penalty or loss of benefits. Similarly, you may withdraw from this study at any time without penalty or loss of benefits.

## VII. Subject's Responsibilities

I voluntarily agree to participate in this study. I have the following responsibilities:

- Participation in a 60 minute focus group and
- Ask questions of the researcher about the study at any time.

If questions arise about research subjects' rights or any concerns about the conduct of this study, please contact The Virginia Tech Institutional Review Board, [irb@vt.edu](mailto:irb@vt.edu) or 540-231-3732.

If the questions relate to content and findings of this particular study, please contact one of the project investigators:

- Karen Vines, 540-231-1264, [kvines@vt.edu](mailto:kvines@vt.edu), Faculty
- Sarah Wysor Fink, [dfgoats@vt.edu](mailto:dfgoats@vt.edu), Student Researcher
- Subrato Kuri, [subrato@vt.edu](mailto:subrato@vt.edu), Student Researcher

## VIII. Subject's Permission

I have read the Consent Form and conditions of this project. I have had all my questions answered. I am not a minor and give my voluntary consent to participate in this study:

\_\_\_\_\_ Date \_\_\_\_\_

Subject Signature

Please provide your email below if you wish to review the transcript. This data will not be stored anywhere else and only the research team will be privy to this information. At the conclusion of this study all information will be deleted from record.

\_\_\_\_\_ Subject Email



## Appendix D - Script

### **Learning Experiences of Adults with Children in 4-H**

#### **Semi-structured Focus Group Protocol**

#### **PROTOCOL**

The interviewee will follow a standard protocol for each session that includes:

- Welcome and opening remarks
- Informed consent form review
- Reminder of interview procedures
- Questions and answers period
- Wrap-Up

#### **WELCOME AND OPENING REMARKS**

Welcome, and thank you for being here. My study focuses on parents with children active in 4-H clubs. The purpose of this study is to find out if parents experience learning. Have you learned from your child or your child's activities and how has this knowledge affected you?

I am Sarah Fink, and I will be conducting this focus group. We are going to focus our discussion today on your experiences. My task is to ask questions, and seek clarification as needed during our visit. This session should take approximately 60 minutes.

#### **CONSENT FORM REVIEW**

You received a copy of the consent form with your invitation to participate in the focus group. Do you have any questions about this form, or parts of the form that you would like to review? Are you willing to give your consent to participate in this focus group? If yes, I will now turn on the recording device. If no, thank you for visiting with me.

#### **INTERVIEW PROCEDURES**

- I will be recording this interview using an audio recorder.
- If you need to take a break at any time, please let me know and I will give you the time you request.
- You do not have to answer any questions you do not want to and you can stop your participation at any time if you feel uncomfortable.
- Within the next week you will receive a written transcript of this focus group. Please respond within one week, indicating any changes that need to be made. If you need additional time, please let us know. If we do not hear from you, we will assume that you were comfortable with the transcript and felt it accurately reflected our visit.

## **Interview Questions**

### **Warm-Up**

1. Were you involved in 4-H growing up?
2. What is your highest level of education
3. How old is your child?
4. How long has your child been active in 4-H?
5. What, if any, 4-H competitions has your child participated in or intends to?

### **Do Parents Learn**

- 1.) How has your knowledge changed as a result of having your child involved in 4-H activities?

### **What Learning Adults Experienced**

- 1.) What have you learned about from your child's 4-H activities?
- 2.) What contributed to your learning as a result of having your child involved in 4-H?
- 3.) How do you use what you learned?

### **Wrap-Up**

We are now at the end of the focus group. I want to sincerely thank you for your time and input. Are there other comments you would like to make or questions you might have?

I will provide the written transcript within a couple weeks. If I do not receive corrections from you within the agreed upon time, I will assume the transcript is accurate. Thank you and have a wonderful day!

## Appendix E - Focus Group Transcript

**Interviewer:** OK so we are starting this evening with my 1st focus group. Welcome and thank you for being here. My study focuses on parents with children active in 4H clubs. The purpose of this study is to find out if parents experience learning, have you learned from your child or your child's activities and how has this knowledge affected you. I am Sarah Fink and I will be conducting this focus group. We are going to focus our discussion today on your experiences. My task is to ask questions and seek clarification as needed during our visit. The session should take approximately 60 minutes. You had already received your copies of the consent form with your invitation to participate. Do you have any questions about this form or parts of the form that you would like to review? Are you willing to give your consent to participate in this focus group?

**Participant 1, 2 & 3:** Yes

**Interviewer:** My interview procedures are: I will be recording this interview using an audio recorder. If you need to take a break at any time please let me know and I'll give you the time you request. You do not have to answer any questions you do not want to and you can stop your participation at any time if you feel uncomfortable. Within the next week you will receive a written transcript of this focus group. Please respond within one week indicating any changes that you feel need to be made. If you need additional time please let us know. If we do not hear from you we will assume that you are comfortable with the transcript and felt it accurately reflected our visit. So we will start with just some warm up questions just to start feeling out the focus group. So each one of you, if you wanna go around the room, were you involved in 4-H growing up?

**Participant 1:** No

**Participant 2:** No

**Participant 3:** Yes

**Interviewer:** What is your highest level of education?

**Participant 1:** Bachelors in Science

**Participant 2:** Associates in Science

**Participant 3:** Bachelors in Science

**Interviewer:** How old is your child?

**Participant 1:** First child 10, second child 12.

**Participant 2:** 17

**Participant 3:** 18

**Interviewer:** And how long has your child been active in 4H?

**Participant 1:** Between two and three years. On our way to three.

**Participant 2:** About 5

**Participant 3:** Yeah, about 5.

**Interviewer:** What if any 4-H competitions has your child participated in or intends to?

**Participant 1:** The County Fair. Both have done entries for the county fair and the horse for the hay bale competition.

**Participant 2:** The 4-H state horse show and hippology and equismartz. And the hay bale competition.

**Participant 3:** Hippology, equismartz, the photography at district level for a couple of years, fair entries. 4-H Summer Camp, teen counselor/leader a year or two and the hay bale competition.

**Interviewer:** OK so we're gonna be getting into the main part of the questions. So do parents learn? How has your knowledge changed as a result of having your child involved in 4H activities?

**Participant 1:** I can't say that I have increased my knowledge on anything agricultural. I would not have known about the county fair entries had they not been in 4-H. I would not have gotten the forms. I would

not have known where to go and that's something we would not have done. We would have gone to the county fair but we would not have submitted entries or learned that side of it. The outings that you guys have done have exposed us to the area and community, broadening our whereabouts for those opportunities. We have been here 7 years and did not know about the lake Community Park with the beach.

**Participant 2:** The way that the meetings are conducted. There is a formal way to conduct the meetings. Personally, I have learned a lot about the rules and regulations for the State 4-H horse show. There are a lot of rules you have to know and the entry forms are difficult. We get them wrong every year. I have learned a lot about the equestrian side.

**Participant 3:** Washington D.C. I had never done that trip, nor ridden the train. All of the metro around D.C. and visiting the National 4-H center I had never done and was all educational. I had visited the museums in D.C. before. The hiking trips that we have done in previous years. I had not been to all of those locations before. That was fun and educational to see all of the new places. And a little hippology because of Valerie's involvement with that.

**Interviewer:** What have you learned about from your child's 4-H activities? You all have given some great examples of that and I guess we can say that you answered that in many respects. I think we can go ahead and move to the next question.

**Interviewer:** What contributed to your learning as a result of having your child involved in 4-H?

**Participant 1:** I think you always want your child to be excited about and interested in, then you are going to be in there with them to help encourage that passion and growth. With their interest and excitement you are going to try to learn more about it and get involved with them and push them further if it is something they are really enjoying. I garden but I can't get him out there to help me garden but however if they are entering something in a competition and they're gonna win all the sudden he's helping me pick out pepper plants and we all are trying to learn about pepper plants. He was interested in Japan last year and we found a Japanese pepper to grow and submit for the fair. He won a blue ribbon for that.

**Participant 2:** I think the rules and regulations, in and of themselves, for the horse show forces me to understand and know so that I don't set her up for failure. If you don't have everything and she doesn't have everything then she cannot participate. There are things that the district level requires and then there are requirements for the state level and they are not the same.

**Participant 3:** Having been in 4-H and getting to start this Community Club and having all of the different speakers, such as the fire chief and train safety guy were things that we would not have learned about otherwise.

**Interviewer:** So it sounds like a lot of the experiences that you get to experience with them really does a lot and both your involvement with them in this but outside of home too and just in general really kind of helps to develop them in a lot of different ways and your relationships as well.

**Participant 1:** This gives us more interaction with the community and with each other giving us something that we can do together and talk about.

**Participant 3:** We have visited the museum downtown and the train museum and the Virginia Tech Vet school a couple of times. So those are places, as a family I would not have gone to those places, unless I was with a group to go and you get more out of it.

**Interviewer:** We are now at the end of the focus group. I want to thank you for your time and input.

## Appendix F- Interview Notes

### **Learning Experiences of Adults with Children in 4-H** Semi-structured Interview Protocol **Campbell County Homeschoolers 4-H Club Interview**

#### **PROTOCOL**

The interviewee will follow a standard protocol for each session that includes:

- Welcome and opening remarks
- Informed consent form review
- Reminder of interview procedures
- Questions and answers period
- Wrap-Up

#### **WELCOME AND OPENING REMARKS**

Welcome, and thank you for being here. My study focuses on parents with children active in 4-H clubs. The purpose of this study is to find out if parents experience learning. Have you learned from your child or your child's activities and how has this knowledge affected you?

I am Sarah Fink, and I will be conducting this interview. We are going to focus our discussion today on your experiences. My task is to ask questions, and seek clarification as needed during our visit. This session should take approximately 60 minutes.

#### **CONSENT FORM REVIEW**

You received a copy of the consent form with your invitation to participate in the interview. Do you have any questions about this form, or parts of the form that you would like to review? Are you willing to give your consent to participate in this interview? If yes, I will now turn on the recording device. If no, thank you for visiting with me.

#### **INTERVIEW PROCEDURES**

- I will be recording this interview using an audio recorder.
- If you need to take a break at any time, please let me know and I will give you the time you request.
- You do not have to answer any questions you do not want to and you can stop your participation at any time if you feel uncomfortable.
- Within the next week you will receive a written transcript of this focus group. Please respond within one week, indicating any changes that need to be made. If you need additional time, please let us know. If we do not hear from you, we will assume that you were comfortable with the transcript and felt it accurately reflected our visit.

## Interview Questions

### Warm-Up

6. Were you involved in 4-H growing up? **No**
7. What is your highest level of education? **Post Graduate**
8. How old is your child? **8, 10, 12, 14, 16**
9. How long has your child been active in 4-H? **The oldest has been in for 4.5. The youngest has been in for 1 year. The others are within that range**
10. What, if any, 4-H competitions has your child participated in or intends to? **Photography, Shooting and Food Challenge**

### Do Parents Learn

- 2.) How has your knowledge changed as a result of having your child involved in 4-H activities?  
**Primarily learned about agriculture and the history of 4-H. Made an impact on planning and organizing. One of the organizers for the club. Volunteer Leader.**

### What Learning Adults Experienced

- 4.) What have you learned about from your child's 4-H activities? **(Participant felt they answered the question in the first question)**
- 5.) What contributed to your learning as a result of having your child involved in 4-H?  
**The speakers, field trips, hands-on activities and videos really impacted the learning. Loved the variability in topics.**
- 6.) How do you use what you learned? **Planning and organizing within everyday life. Skills gained as a volunteer leader.**

### Wrap-Up

We are now at the end of the interview. I want to sincerely thank you for your time and input. Are there other comments you would like to make or questions you might have? **The children's interest is sparked which sparks the parent's interest. Enjoys the increased exposure for their children and themselves.**

I will provide the written transcript within a couple weeks. If I do not receive corrections from you within the agreed upon time, I will assume the transcript is accurate. Thank you and have a wonderful day!