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Acknowledgements

For this conference, 8 posters were accepted for the Research Poster Session, from fifteen manuscripts for an acceptance rate of 62%.

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Carson Letot Dr. Laura Rice, Dr. Melanie Miller Foster, Thomas Gabel, Dr. Daniel Foster

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Mallen Marlowe, Rama Radhakrishna, Levon Esters, Neil Knobloch, DeEtra Young, Andres Zabala

Building Social Capital through 4-H Participation

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Introduction & Framework

Facilitated by Extension, 4-H programs are well known for having a positive impact in communities. When needs are identified, programs are established to meet those needs. As needs change, Extension continues to adapt, modify, and re-evaluate the efficacy of the programs. One area that Extension has taken a leading part in is diversity education and awareness. Extension programs established over the years have attempted to meet the needs of clients with disabilities. Despite the progress this inclusion movement has made, barriers to inclusion continue to be pervasive throughout all settings in the lives of individuals with disabilities. Research indicates that inclusion has a positive impact on the lives of individuals with disabilities and the larger society (Hicks-Monrore, 2011).

Research is continually conducted with respect to social capital and its relationship with positive youth development. The social benefits of the 4-H program are wide ranging as Kinsey (2013) states “[4-H] experiences have been known to build bridging and bonding forms of social capital between youth and adults and youth and their peers” (p. 61). However, there has not been a large amount of literature published on the experiences and perceptions of youth with disabilities regarding inclusion and social capital. This study seeks to examine inclusion and the acquisition of social capital through participation in the 4-H program by individuals with disabilities. Social capital served as the conceptual framework for this study and is commonly associated with community, relationships, networks, and affiliations between individuals (Enfield, 2008). Due to the focus on relationships and social networks, social capital can be hard to define. For this study, Putnam’s (2000) definition of social capital was used “...social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them” (p. 19).

Purpose, Objectives and Methods

This study sought to examine inclusion and the acquisition of social capital through participation in the 4-H program. The central question for this study asked how did 4-H build social capital for youth with disabilities? The bound system (Stake, 1995) was 4-H alumni with disabilities. Due to the sensitive nature of the topic, a snowball sampling technique was used to recruit participants. A total of three adults from a Western state agreed to participate. The interviews used a semi-structured format that took place via videoconference. They were recorded and transcribed to aid in data analysis. To help ensure trustworthiness member checking and an audit trail were utilized (Creswell, 2013).

Findings

Theme 1: A Fulfilling Social Experience

The participants shared stories and experiences of how 4-H participation allowed them to develop close friendships with individuals who share common interests. They described developing a larger social network that was instrumental in supporting them through the challenges of adolescence. They explained how the friends they had in 4-H were people that treated them as equals. One participant described his friends and leaders in 4-H as more

“understanding and accepting”, even calling his friends “family”. Each of the participants shared stories of the activities they did with their friends in 4-H and recalled their 4-H experience with fondness. Talking about activities like trail rides, horse shows, and community service events they illustrated how “very close” to they were to their 4-H friends. While the bullying the participants experienced happened outside of the 4-H setting, it was their experiences within the organization that helped them feel accepted and supported. For one participant, her 4-H experience helped minimize bullying the school setting. She explained 4-H friends “stood up for me” against the bullies.

Theme 2: Novel Experiences

From the perspective of the participants their time in 4-H offered them exposure to a variety of novel activities, experiences, and different social settings. Exposure was a key element to staying involved in 4-H, because they were given the opportunities to build life skills through the completion of projects and practice social skills, enabling them to develop meaningful relationships with many people – friends their own age and adults who helped them with their projects. They each had opportunities to be involved with a variety of social activities such as parades, county fairs, leadership conferences and even took on leadership roles. The social activities gave them exposure talking to different people in settings whether being judged in competitions, being interviewed by TV news reporters, sharing their 4-H experiences to advocate for 4-H involvement, or offering guidance to new members as they went through 4-H. They were taught the importance of working together with others and helping others in whatever way they could. For all the participants, the exposure to a variety of social settings helped them establish relationships with many people who helped them through their 4-H years and into their adult lives to become successful, goal-oriented adults.

Theme 3: Developing Confidence and Resiliency through Participation

All the participants related they faced challenges growing up as youths with disabilities. 4-H taught them all to be more outgoing, advocate for themselves, and that their work and effort will be rewarded in the end. They relayed their 4-H activities helped them overcome challenges. The participants shared how 4-H involvement gave them confidence to speak in public, share their opinions, thus overcoming the challenge of learning to advocate for themselves. One participant described 4-H as “a place where he could be himself” and feel confident in sharing his opinion. Although advocating for himself was a big challenge to overcome, eventually his confidence in himself and his abilities grew, a phenomenon experienced by other participants.

Discussion

The participants found 4-H to be a fulfilling social experience that allowed them to develop social support networks with youth and adults (Kinsey, 2013; Putnam, 2000). That support extended beyond the club itself and into the school system and other aspects of their life. They valued the novel experiences to help expose them to new activities, ideas, and viewpoints which in turned help them gain confidence and skills in themselves and increase their social capital with their peers (Enfield, 2000; Kinsey, 2013). Inclusive youth organizations benefit all members involved (Hicks-Monrore, 2011), efforts should be made to encourage clubs to be inclusive for youth with disabilities. It allows them to build social capital and reap benefits for a lifetime. Resources to support youth with disabilities should be made available to local club leaders.

Recommendations for research include exploring the perceptions of youth with disabilities about 4-H participation and describing any potential barriers they might face.

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Who's Involved and Who Isn't? A Demographic Study of Senior FFA Members

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Introduction

Participation in the National FFA Organization (2021b) is a crucial component of the three-component model of school-based agricultural education (SBAE). Active involvement allows an individual member to obtain leadership development, personal growth, and career success. A record 760,113 members were enrolled in the organization as of 2020 (National FFA Organization, 2021c). Barriers to involvement must be identified to ensure all members have the opportunity to achieve the FFA's mission. This national descriptive study of 2020-2021 high school senior members of the National FFA Organization was conducted to identify how involved members of the National FFA Organization were on the chapter, district/area/region, state, and national levels. This addressed the AAAE Research Priority 4: Meaningful, Engaged Learning in All Environments.

Theoretical Framework

This study used Astin's (1984, 1999) Theory of Involvement as a framework to evaluate students' participation in the National FFA Organization. Astin's theory is rooted in five basic assumptions: (1) involvement requires the investment of mental and physical energy, (2) involvement is continuous and varies, (3) involvement may be quantitative and qualitative, (4) the level of involvement is directly related to the amount of development gained from being involved, and (5) involvement correlates with academic performance. Past studies have found benefits to involvement in student organizations (Astin, 1996; Cooper et al., 1994; Dugan, 2006; Ewing et al., 2008; Foreman & Retallick, 2013; Rubin et al., 2002; Velez et al., 2018). Additional studies have used Astin's Theory of Involvement as a theoretical framework to research the effects of involvement in high school student organizations (Case, 2010; Prophete, 2013; Rayfield et al., 2008; Rosch & Nelson, 2018; Simonsen et al., 2014; Wyble, 2009).

Methodology

We used a descriptive research design with an online Qualtrics® survey to identify participants' FFA Involvement, Academic Success, and Demographics. We modified the FFA involvement section from Copeland's (2019) study to measure the type, duration, and level of involvement the participants had in the organization. The Academic Success section was also adapted from Copeland's study and measured self-reported GPA, post high school plans, and interest in post-secondary agricultural-related education. The Demographic section included ethnicity, age, gender identity, urban or rural classification, the receipt of free and reduced lunch as a measure of social economic status, internet access, and access to technological devices. The Purdue University Institutional Review Board gave approval to conduct the study. The study occurred in fall of 2020 with 1,528 respondents completing the online survey.

FFA Involvement. This section asked respondents to indicate their involvement in eight FFA events: officer positions, Leadership Development Events (LDE), Career Development Events (CDE), Agriscience Fair, conventions, leadership conferences or camps, FFA degrees, and the submission of proficiency awards. This questionnaire was modeled from similar scales used in previous Agricultural Education studies (Copeland, 2019; Dormody & Seevers, 1994; Smith et al., 2010; Wingenbach & Kahler, 1997). The respondents' total score was calculated by a numerical value assigned to the headings of no participation (0), chapter participation (1),

district/area/region participation (2), state participation (3), and national participation (4) for each of the seven FFA events. Degree values were no participation (0), Discovery (1), Greenhand (2), Chapter (3), and State FFA Degree (4). Total scores could range from 0 to 76. Values for officer positions were zero to three, as high school seniors are ineligible for national officer positions. A total score of 0 indicted an FFA member who was Not Involved. A total score of 1-10 was defined as Lightly Involved indicating some chapter level involvement or mostly chapter level with one to two higher level participation activities possible. A total score of 11-30 was defined as Moderately Involved, a total score of 31-50 was defined as Actively Involved, and total score of 51-76 was defined as Substantially Involved. To obtain a score of at least 51, the FFA member would be involved in numerous state activities and one or more national activities. This FFA member would most likely also be extensively involved on the chapter and district levels as well.

Findings

Participants had a total mean involvement score of 18.7, indicating they were Moderately Involved. However, 6.4% of members had an involvement score of zero, with 75 participants indicating no participation in any of the eight involvement areas. Latinx and Black FFA members approached 20% reporting No Involvement. Members from Rural RUCA Classification had a higher score and those from Metropolitan had a lower. Female members had a higher score than Male. White members had a higher score. Members receiving free/reduced lunch had a lower score. Members with an “A” Overall GPA had a higher score and those with a “C” had a lower in the Slight Involvement category. Future plans involving Agriculture and 4-Year College had a higher FFA Involvement score.

Conclusions, Implications, and Recommendations

The results imply a rural, White, female, with an “A” GPA, not receiving free and reduced lunch, planning to attend a 4-year college and pursue Agriculture as a career has a higher involvement in FFA. The current study did not explore why such a composite demographic profile has a higher Involvement score. Viewing this conclusion through the theoretical framework’s lens (Astin, 1984, 1996, 1999), FFA members whose involvement is continuous and varied and who see the value of that involvement are more likely to pursue higher levels of activity in the organization. Conversely, a lack of learning and professional development are barriers to participation and involvement. We recommend local FFA advisors and state level FFA leaders actively work to ensure FFA events and degree programs are inclusive and to encourage FFA members not fitting this profile to become more involved. We recommend National FFA and Agricultural Education leaders expeditiously implement the Agricultural Education for All efforts (National FFA Organization, 2021a).

Overall Mean FFA Involvement was Moderately Involved. However, when looked at by group, several approached Lightly Involved. Students from ethnic minority groups were more likely to have No Involvement. These findings are similar to that of Velez et al. (2018) who found that Black males were more involved in non-SBAE Career and Technical Student Organizations and that White females were 20% more likely to hold officer positions in SBAE Career and Technical Student Organizations. Focused, targeted efforts on local, state, and national levels must occur to actively involve FFA members from groups with low involvement.

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Insights into Impact: Evaluating Engagement in Adult Leadership Programming
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Introduction

The ever-changing complexity of agriculture, food, and natural resources (AFNR) necessitates leaders who combine (a) knowledge of AFNR systems, (b) diverse professional relationships, and (c) the abilities required to create positive change (Kaufman et al., 2010). Agricultural leadership education seeks to develop these attributes among individuals at varying age and ability levels (Velez et al., 2015); however, in this study, we focused on an agricultural leadership program serving AFNR industry professionals in Michigan. Specifically, our aim was to detail the perceived leadership abilities of alumni from the Great Lakes Leadership Academy (GLLA) as well as the impact respondents perceived the program had on their leadership abilities. Findings from this research provide insights into the role adult leadership programming plays in empowering leaders with the abilities required to positively impact AFNR systems. In addition, the formation of a *leadership impact factor* within the current study serves as a model for program facilitators in leadership education seeking insights into the impact of their programming on participants.

Literature Review and Theoretical Framework

Recent research identifies the most common characteristics of participants within adult AFNR leadership programming (Lamm et al., 2020). Findings suggest participants are most likely to be male, between the ages of 50 and 59, and White. Further, participants are most likely to possess a bachelor's degree as their highest level of education and work full time in a managerial or executive position within a private/for profit business. Lamm et al. (2019) also explored leadership self-evaluations of adult AFNR leadership program participants, finding the average self-evaluation score to be 3.75 for males and 3.74 for females with a maximum possible score of 5.00. Data from this research also suggest self-evaluations of leadership increase with age as well as professional rank (i.e., nonsupervisory role; manager; owner, CEO, or president). In total, these studies provide valuable insights into who participates in adult AFNR leadership programs as well as an introductory snapshot of programmatic impact; however, more detailed information regarding the impact of these programs is needed to inform changes at the local program level.

The theoretical framework for this research is the Ecological Systems Theory (Bronfenbrenner, 2005). This theory illuminates the interaction between individuals and a hierarchy of systems which influence individuals. This perspective informs our focus on investigating the perceived leadership abilities of individuals as well as their perception of the impact of previously engaging in GLLA. For this study, the systems of interest within the theory were the person (i.e., program alumni), microsystem (i.e., direct program engagement), and mesosystem (i.e., indirect environment of the program).

Purpose and Objectives

The purpose of this research was to gain insights into the role of adult AFNR leadership programming on the leadership abilities of professionals by exploring the leadership skills and programmatic impact perceived by alumni of GLLA. To accomplish this purpose, the following research objectives were developed: (a) describe the leadership abilities perceived by GLLA alumni, (b) describe the impact of GLLA perceived by alumni, (c) establish and evaluate a

leadership impact factor which combines perceived leadership abilities and perceived programmatic impact.

Methods

This research was completed using survey research methods. The data collected are part of a larger research project exploring leadership development as a product of engaging in adult AFNR leadership programming.

Population, Sample, and Data Collection

The population for this research included GLLA alumni who completed the program between 2015 and 2019, which included a total of 159 individuals ($N = 159$). Data were collected via a Qualtrics survey sent a maximum of four times to program alumni in April and May of 2021. A \$5 Amazon gift card was provided as an incentive for completing the survey. A total of 77 responses were received, yielding a 48.43% response rate.

Instrumentation

The instrument included six leadership constructs of items in which individuals were asked to rate their current ability (i.e., “how would you currently rate your skill in this area”) from 1 (*Very Low*) to 5 (*Very High*). In addition, individuals were asked to rate the impact of GLLA (i.e., what impact did GLLA have on your current ability”) from 1 (*No Impact*) to 5 (*Very Large*) on all items. Items within each construct were developed by the research team to align with the objectives of the program (see Table 1).

Table 1

Description of Constructs

Construct	Description	Items	Example Item	Reliability	
				Ability	Impact
Collaboration	Building relationships through communication.	8	Listening to opinions that differ from my own.	.76	.82
Emotional Resilience	Maintaining a healthy identity while leading.	8	Using mindfulness practices to achieve personal balance.	.84	.91
Empowerment	Supporting others lead via inclusive interactions.	8	Promoting the leadership development of others.	.88	.89
Reflective Application	Enacting leadership in alignment with best practices.	7	Making meetings inclusive for all participants.	.83	.89
Skill Development	Developing new skills as a leader.	12	Identifying opportunities for sustained leadership growth.	.90	.95
Perspective Development	Developing new perspectives as a leader.	11	Being aware of my own emotions as they occur.	.86	.93

Note. Abilities and impact reliabilities calculated post-hoc.

A panel of experts in leadership education, including six faculty in leadership education from three institutions with experience in social science research methods, evaluated the survey for face and content validity. Feedback from the panel led to changes which increased the validity of constructs. Reliabilities were calculated post-hoc and are reported in Table 1.

Data Analysis

For research objective one, an average and standard deviation were calculated for the six ability constructs. Similarly, for objective two, an average and standard deviation were calculated for the six impact constructs. For objective three, a leadership impact factor was calculated by multiplying reported ability level by perceived program impact for each construct item, then averaged across participants for each construct. For interpretation, larger impact factors suggest the program played a more significant role in developing high perceived abilities among participants.

Description of Program and Respondents

GLLA serves professionals in AFNR systems in Michigan and includes two types of experiences. The first experience is introductory in nature and includes three, four-day sessions over a six-month period. The second experience is advanced in nature and includes eight three to ten-day experiences over the span of nine months. Both experiences include classroom-based workshops on personal, team, and community leadership roles contextualized within AFNR systems. In addition, both experiences include real-world team problem solving outside the classroom. Within the advanced experience, participation includes a domestic and international travel experience to broaden the perspectives of participants. Two additional program features include utilization of mentors for participants and significant investment in building a network of professionals within the program. Participants within the program are selected via an application process with the majority of participants having their registration and engagement costs covered by their place of work.

Respondents to the survey were predominately female (i.e., 59.09%). With regard to race, 84.38% were White, 9.38% were Black/African American, and 3.13% were Asian. The average age of respondents was 41.05 years old with a standard deviation of 7.32 years.

Findings

The focus of objective one was the perceived leadership abilities of respondents at the time of data collection (see Table 1). GLLA respondents perceived their highest abilities within the empowerment ($M = 4.01$; $SD = 0.49$) and perspective development ($M = 3.81$; $SD = 0.48$) constructs. Alternatively, the lowest perceived abilities were within the skill development ($M = 3.53$; $SD = 0.56$) and reflective application ($M = 3.66$; $SD = 0.47$) constructs.

Table 2

Perceived Abilities

Construct	Minimum	Maximum	Mean	Standard Deviation
Empowerment	2.38	5.00	4.01	0.49
Perspective Development	1.91	4.82	3.81	0.48
Emotional Resilience	2.00	4.88	3.77	0.53
Collaboration	2.63	4.88	3.73	0.47
Reflective Application	2.43	4.86	3.66	0.47
Skill Development	1.92	4.75	3.53	0.56

Note. Response options ranged from 1 (*Very Low*) to 5 (*Very High*).

For objective two, the focus shifted from abilities to programmatic impact (see Table 3). Respondents perceived the highest programmatic impact within empowerment ($M = 3.94$; $SD = 0.70$) and emotional resilience ($M = 3.80$; $SD = 0.75$). The lowest perceived programmatic

impact was reported for skill development ($M = 3.37$; $SD = 0.84$) and collaboration ($M = 3.52$; $SD = 0.64$).

Table 3

Perception of Program Impact

Construct	Minimum	Maximum	Mean	Standard Deviation
Empowerment	2.00	5.00	3.94	0.70
Emotional Resilience	1.00	5.00	3.80	0.75
Perspective Development	1.45	5.00	3.79	0.69
Reflective Application	1.14	5.00	3.77	0.70
Collaboration	1.38	5.00	3.52	0.64
Skill Development	1.00	5.00	3.37	0.84

Note. Response options ranged from 1 (No Impact) to 5 (Very Large).

For the final objective, perceived ability and programmatic impact were combined in the formation of a programmatic impact factor (see Table 3). The largest impact factors were observed within the empowerment ($M = 15.83$; $SD = 3.68$) and perspective development ($M = 14.52$; $SD = 3.47$) constructs. The lowest impact factors were observed within the skill development ($M = 12.00$; $SD = 3.91$) and collaboration ($M = 13.21$; $SD = 3.41$) constructs.

Table 4

Programmatic Impact Factor

Construct	Minimum	Maximum	Mean	Standard Deviation
Empowerment	7.03	25.00	15.83	3.68
Perspective Development	5.42	23.21	14.52	3.47
Emotional Resilience	3.88	23.13	14.44	3.96
Reflective Application	4.08	22.86	13.92	3.58
Collaboration	4.98	23.16	13.21	3.41
Skill Development	3.03	21.38	12.00	3.91

Note. Impact factors could have ranged from 1.00 to 25.00.

Conclusions, Recommendations, and Discussion

Adult AFNR leadership programs play an important role in empowering leaders to enact positive change within their communities and AFNR systems (Kaufman et al., 2010). The approach

utilized within the current research informs the role GLLA has played in developing the abilities of alumni. Analysis of the programmatic impact factors illuminate the program is excelling in building empowerment (i.e., supporting others lead via inclusive interactions) and perspective development (i.e., developing new perspectives as a leader) abilities among participants. Alternatively, data illuminate the potential to refine the program to enhance skill development (i.e., developing new skills as a leader) and collaboration (i.e., building relationships through communication), the two items receiving the lowest impact factor among participants. In addition to informing facilitators of the current program, this approach is a model which could be adapted by other leadership education programs which impact leadership learners at all levels (Velez et al., 2015) with and without an AFNR focus. The opportunity to enhance the quality of learning experiences for current and future leaders compels continued utilization and refinement of the impact factor method proposed in this study.

As we reflect on the findings in alignment with the ecological systems theory (Bronfenbrenner, 2005), additional insights emerge. First, the average programmatic impact scores across constructs suggest the GLLA made a lasting impression on the leadership abilities of alumni, in alignment with the ecological system theory. Further, questions emerge regarding the impact of specific experiences which occurred during the GLLA and how those experiences influenced the development of leadership outcomes. For example, it is reasonable to assume domestic and international travel experiences led to increased ratings of perspective development; however, additional research would help inform leadership education within GLLA and beyond. Continuing in this line of inquiry, there exists an exciting opportunity to conduct this research across multiple adult AFNR leadership programs. In this research, comparing different programmatic features and participant outcomes will yield further evidence regarding the type of educational experiences occurring within the microsystems and mesosystems of leadership education which catalyze leadership development.

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Assessing Farmers' Stress and Career Commitment During Pandemic: A Pilot Study

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Introduction

Career commitment is a critical component to grow in an agriculture pathway, developing specialized skills and providing the power to persist even in the most challenging times (Mrayyan & Al-Faouri, 2008). A strong career commitment may promote strategies to maintain the job over time, be willing to self-sacrifice for the career, and tend to accommodate to hard times rather than withdraw from. The COVID-19 pandemic affected the agricultural sector, adding more stress to farmers' lives (Johansson, 2021). Farmers are experiencing higher levels of psychological distress, depression, and anxiety (Rudolphi et al., 2020; Yazd et al., 2019), which has consequences both for the person itself and for agriculture, increasing the chances of having occupational accidents, farming withdrawal, and in more severe cases, farmer's suicide. We hypothesized that a high level of farmers' stress may negatively affect farmers' commitment to career in agriculture. Also, we explored the relationship between farmers' occupational and personal stress and career commitment. This study is framed in the belief that a strong career commitment can protect farmers from withdrawal from their occupational roles by reducing farmers' stress level. Studies show that highly committed individuals have less intention to withdraw from their occupations (Blau, 1989) and perform better (Mrayyan & Al-Faouri, 2008). Two research objectives guided this pilot study, 1) Describe farmers' occupational (OS) and personal stress (PS) and their career commitment (CC), and 2) Determine the relationship between career commitment and farmers' stress (on-farm and off-farm stress, and personal stress)

Methodology

This quantitative study utilized an online survey method to collect data during Spring 2021 from Pennsylvania farmers. The Office for Research Protections approved this study (IRB STUDY00015683). We collected data using the Qualtrics platform. We sent online survey to approximately 3000 Pennsylvania farm operators registered on the Penn State Extension database. Approximately, 10% response rate was obtained from the study ($n = 332$). However, after applying inclusion and exclusion criteria and removing missing cases, a sample of 186 was used in this study. We used three instruments, a *Career Commitment Scale* (CC), *Occupational Stress Questionnaire* (OS), and *Personal Stress Questionnaire* (PS). A *Career Commitment Scale* is a 10-items scale adapted from OCQ Scale (Colarelli & Bishop, 2016) and was measured using a 5-point Likert scale from strongly disagree to strongly agree. Higher scores indicated high commitment. An *Occupational Stress* is a two-factor scale developed by researchers to measure; (a) off-farm (5-items), (a) on-farm (9-items) stress factors. A *Personal Stress* is a one-factor scale (7-items) that was developed by researchers. Both OS and PS scales were measured using a 5-point Likert scale from never to always. Higher scores indicated higher stress. The survey responses were analyzed using SPSS 26. We used descriptive statistics to describe farmers' occupational and personal stress level and career commitment, followed by correlation analysis to determine the relationship between farmers' stress and career commitment.

Results

For objective one, the overall mean score for occupational stress was 3.11 ($SD = .65$, $n = 186$). Mean score of on-farm stress was 3.07 ($SD = .67$, $n = 186$); off-farm stress was 3.18 ($SD = .81$, $n = 186$). Overall mean score for personal stress was 2.71 ($SD = .82$, $n = 186$). The overall mean

score for the career commitment scale was 4.05 ($SD = .59$, $n = 186$). Farmers reported less stress on personal factors and higher on off-farm stress factors during the pandemic times. Farmers indicated higher level of career commitment during the COVID-19 pandemic.

For research objective two, we found significant low positive correlation between career commitment and on-farm stress ($p = .151^*$). No significant correlations were found between career commitment and off-farm stress and farmers' personal stress level.

Discussion, Limitation, Conclusions

This pilot study described Pennsylvania farmers' occupational stress (on-farm and off-farm), personal stress, and farmers' career commitment (CC) during pandemic times. Farmers reported that the personal factor brought less stress. The off-farm stress factor affected farmers most during the pandemic. Farmers' commitment to agricultural career was relatively high during the COVID-19. We found significant low positive correlation between PA farmers' career commitment and on-farm stress ($p = .151^*$). We found no significant correlation between career commitment and personal factors. Our study supports previous research in terms of the relationship between stress and career commitment. Borg, Riding, & Falzon's (1991) indicated that less stress relates to higher career commitment. The results from this research cannot be generalized to another population because it was a pilot study that used a convenient sampling approach.

Future Directions

Moreover, we plan to utilize small group interviews with farmers to confirm the quantitative part of the study. Also, we believe that results based on interviews with farmers will help us better understand the impact of occupational and personal stress on farmer's career commitment.

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Perceptions of Curriculum Availability for Career and Technical Education Teachers to Teach Small Gas Engine Technology in Secondary Schools

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Balancing technical knowledge and skills with the need to provide locally specific courses of study is a demanding task. This complexity could be why Shultz et al. (2014) found small gas engines (SGE) related skills were considered important, but over 25% of teachers reported not being confident in their abilities. For those new to teaching, the complex skills and manufacturer-specific knowledge not only sows doubt in their confidence, but Tummons et al. (2017) found it may create a fear of loss of credibility. When teaching unfamiliar content, pre-service female teachers suggested it might prevent them from teaching agricultural mechanics courses. One method curriculum developers have devised to alleviate this fear of unknown content is through the use of educative materials, or curriculum designed to teach both the teacher and the student the content (Beyer & Davis, 2009). Overcoming fear and a lack of preparation is requisite for teachers trying to meet a growing industry demand for new employees (Alston et al., 2018) Students must be given exposure to these careers. If teachers are not confident in their ability to teach these skills, workshops must provide training that builds confidence and technical skills and allows teachers to create locally specific courses of study.

The framework for this study is based on Newcomb et al. (2004) “Factors Influencing Decisions about Instruction” which posits that instruction is a function of a teacher’s knowledge and skill. When presented with a set curriculum, a teacher must modify it to meet their classroom and students’ needs (Darling-Hammond & Bransford, 2007). One method to support teachers is posited by Roberts and Ball (2009) when they described an agricultural education model that uses industry-validated curricula combined with technically competent educators to provide students with instruction and skill acquisition.

Purpose & Objectives

The purpose of this study was to evaluate the participants perceptions of the quality of the curriculum available to them prior to and after attending a three-day workshop utilizing an educative curriculum. As identified by (Roberts et al., 2016), advances within the industry have helped to drive and dictate the need for skilled and knowledgeable educational professionals who are capable of adequately utilizing available resources and experience to teach the future industrial workers. The objectives of this study were to describe changes in teachers’ perceived quality of the curriculum available to teach SGE 1) inspection and testing, 2) repair, and 3) theory and safety-related skills prior to and after participation in a three-day workshop.

Methods

To determine the self-perceived quality of the educative SGE curriculum available to teachers a pre/post non-equivalent design method was utilized. Based upon a review of literature, a questionnaire was developed, reviewed by a panel of experts ($N = 5$), and revised. Briggs and Stratton technicians confirmed the content and construct validity of included items. Respondents who attended a SGE workshop from eight locations rated 51 SGE competencies.

To determine instrument reliability, post-hoc reliability analysis was conducted from the pre-test instrument ($N = 20$) for the sub-scales: *Inspection/testing* ($\alpha = 0.992$; $n = 25$), *repair* ($\alpha = .991$; n

= 19), and *theory/safety* ($\alpha = .990$; $n = 7$) using Cronbach' alpha coefficient. Based on recommendations by George and Mallery (2003, p. 231), the scales were deemed reliable. Data collection via a paper questionnaire occurred before and after, the workshop ($N = 136$). Objectives were analyzed using a *paired-samples t-test* and *Cohen's d*.

Results

Nationally, school based, CTE teachers who participated in the Briggs and Stratton SGE workshops were mostly male ($n = 80$; 58.8%), had an average age of 37 years ($M = 36.69$; $SD = 15.38$), of white ethnicity ($n = 126$; 92.6%), completed a Bachelor's degree ($n = 90$; 66.2%), and primarily taught agriculture ($n = 106$; 77.9%), and completed a traditional teacher certification program ($n = 103$; 75.7%).

The *curriculum to teach* scale content was divided into three sub-scales. Researchers determined that the teachers' perceptions of the content in all three sub-scales was significantly impacted for all competencies taught during the workshop. Teachers reported the largest increase in the sub-scale of repair skills (1.94) while the sub-scale of inspection and testing and the sub-scale of theory and safety had identical mean difference scores (1.68). Overall, teachers reported the highest perceived quality in the available curriculum related to *engine theory and safety practices*.

Fifty-one different skills were included in the construct. Overall, the teachers perceived the three areas with the lowest quality curriculum available to teach pre-workshop were *using small engine diagnostic software* ($M = 1.90$, $SD = 1.03$), *inspection of EFI* ($M = 1.94$, $SD = 1.04$), and *testing fuels for quality and use* ($M = 1.99$, $SD = 1.05$) all items in the sub-scale of inspection and testing skills. Following the workshop, two items were rated the highest for perceived quality of available curriculum, SGE personal protective equipment ($M = 3.71$, $SD = 1.18$), and four-stroke engine operation ($M = 3.71$, $SD = 1.19$). The item with the single largest mean difference between pre and post was *correct use of fuels, oils, cleaners, and lubricants* (mean difference = 1.28).

Researchers determined that within the sub-scale of *inspection and testing skills*, the workshop had a significant impact on teachers' perceptions of the available curriculum for all competencies taught during the workshop. The two largest effect sizes were related to the *testing of fuels* ($d = 1.08$) and *carburetor visual inspection* ($d = 1.07$). These were areas in which Briggs and Stratton had created specialized aids to enhance their curriculum. The next two largest effects were in related items, *test running an engine* ($d = 1.07$) and *evaluating engine performance* ($d = 1.06$). In these areas, technicians worked with teachers as they assembled, started, and adjusted their running engines. Teachers who had problems with their engines received added instruction through questioning and demonstration enabling them to better understand the procedures beyond the instruction in the curriculum.

Within the sub-scale of *repair skills*, the four largest effect sizes were in the areas of *performing static governor adjustments* ($d = 1.18$), *setting armature air gaps* ($d = 1.11$), *properly adjusting valves* ($d = 1.07$), and *performing dynamic governor adjustments* ($d = 1.02$). These skills also received more focused instruction throughout the workshop. Technicians carefully demonstrated these skills and then coached the teachers through performing them on their engines. Within the sub-scale of *engine theory and safety skills*, all items had a large effect, with the highest effect in

the *theory and safety skills* sub-scale was *correct use of fuels, oils, cleaners, and lubricants* ($d = 1.05$). All the areas in this section were introduced through video and slide-deck presentations and had less hands-on involvement between the teachers and the curricular content.

Conclusions & Recommendations

Teachers reported an increase in perceived quality of the available curriculum they had to teach small engines content among all three constructs, inspection and testing, repair, and theory and safety skills. As part of the intensive workshop, teachers were provided with the curriculum, and were given limited time to interact with the curriculum. As noted in the results section, those areas where teachers had difficulty and received additional hands-on instruction were found to have the highest effect sizes. While this study did not have specific measures for determining SGE related Pedagogical Content Knowledge (PCK), areas where misunderstanding occurred would serve as a good place to focus efforts to create a comprehensive list of SGE specific PCK. Briggs and Stratton's technician training program discovered that carburetors were an area where PCK greatly impacted students' ability to understand a complex system. This led to the clear carburetor that each teacher was given for their own teaching. Based the evidence of Brigg's technicians having at least a cursory understanding of PCK specific to SGE by the creation of the clear carb and its integration into their educative curriculum workshop, additional research should be directed toward focused interviews of long-term instructors at their factory schools to aid in the creation of a small engines PCK list which teacher preparation programs could integrate into their courses to better prepare future teachers.

Perhaps the perceptions of the quality of the newly provided curriculum would increase if the amount of time dedicated to exploring the curriculum were increased. While it is encouraging that teachers' perceptions showed they evaluated the new curriculum higher than their prior curriculum, the scores suggest that there is still room for improvement of the provided resources. Those areas of the curriculum which showed the largest effects were the areas where the most hands-on time was devoted to both initial instruction and increasing teachers' PCK through focused explanations beyond that readily available in the written curriculum guides. As there was far more content in the curriculum than could be covered in a 3-day workshop, perhaps there would be additional benefit for teachers to continue training via distance technology at periodic intervals following the initial workshop? This would align with Roberts and Ball's (2009) conceptual model of industry-validated curriculum, improving technical competence, and improving teachers ability to provide students with greater skill acquisition.

The intensive workshop was designed both to provide the teachers with the curriculum through the educative curriculum model and to train them with the skills necessary to effectively deliver the content to their students. Given that teachers ratings ranged from *Good* to *Above Average* for all units of instruction, improvements can be made to further help teachers and improve their perceptions of the curriculum. The largest effects were related to those areas of the workshop where teachers and technicians worked in a hands-on setting with step-by-step support and explanations beyond the written educative curriculum guides, furthering the claims that a curriculum designed to educate both the teacher and the students was the most effective in settings where teachers had limited prior experience (Beyer & Davis, 2009).

Due to the significantly improved scores related to the perceived quality of the curriculum, it is an effective way to help teachers and should be continued. However, since the ratings show there is still room for improvement, we suggest that in the future, post-workshop interactions with the teachers be increased and routine data collection occur gathering suggestions for improving all aspects of the curriculum including organization, structure, technical level, and guided interactions with the material. Since the curriculum was written by the leading manufacturer of SGE in the world, the technical content was considered by the researchers to not need changing, but perhaps adding more scaffolding within the lesson content for the students and within the lesson structure and planning resources for the teachers may improve perceptions regarding the curriculum quality as a whole.

One area of the PCK and the Factors Influencing Decisions About Instruction that should be further developed is the pedagogical approaches needed to teach SGE. As teachers develop the technical competence, and receive the boost in self-efficacy that follows, teacher educators and curriculum developers should work together with this group of teachers to further enhance the PCK and to develop specialized pedagogy which should be distributed to teachers of all experience levels to enhance SGE instruction nationally. Increased teacher self-efficacy and improved competence in SGE technology should lead to a better prepared workforce and a reduction in teacher burn-out.

Future research needs to incorporate a two-pronged approach dealing with both the PCK specific knowledge and delivery, while looking for methods which will better prepare the teachers to adopt the curriculum in their programs. Determining the factors of quality teachers look for in a power structures curriculum is warranted and is lacking in the existing literature. Lastly, follow-up with workshop participants after they have had the opportunity to completely review and use the curriculum with their own students in their own laboratories could provide researchers with a better understanding of the essential components required in a technical curriculum, and what changes could be made to the educative curriculum in either material preparation or delivery by teacher educators and industry professionals.

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Improving Knowledge Gains by Utilizing Pre-Writing in an Honors Course

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Introduction/Literature review/Theoretical framework

When the student is ready, the teacher appears. Student readiness is a key factor in learning; teachers can help learners by showing learners gaps in their own knowledge. The Illusion of Explanatory Depth (Cummings, 2016, Rozenblit & Keil, 2002) states learners may overestimate their knowledge on a subject, which may hamper the learning process, and suggests helping learners see their lack of knowledge prior to a lesson improves openness to learning. One strategy to reveal knowledge gaps is to prompt students to express how much they know about the topic prior to instruction (Kruger & Dunning, 1999; Mills & Keil, 2004; Waytz, 2017). The purpose of this study was to determine if a treatment of an open-ended pre-lecture prompt could increase knowledge retention during a lecture. Specific objectives included:

1. Describe the content of post-lecture writing prompt for students in an honors agriculture class.
2. Determine how pre-writing treatment affected content of post-lecture writing prompt for students in an honors agriculture class.
- 3.

Methodology

This quasi-experimental study utilized a one-sample pre/post-test design with an intact class. On March 17, honors agriculture students attended a lecture, then wrote 300-500-words on what they learned and what/if they changed their previously held assumptions. Each student's essay was scored by a single researcher. Scores were assigned for frequency of new ideas learned and for frequency of changed assumptions. On April 7, the same students were given a treatment of a pre-class writing prompt to explain/write as much as possible about the lecture topic. After the lecture, students wrote a 300-500-word essay about what they learned and what/if they changed their previously held assumptions. A paired sample, one-tailed t-test for 2 dependent means was run to compare number of new ideas and changed assumptions for each student.

Results and Interpretation

Twelve of 18 students (67%) chose to participate in the study. Half of study participants were male; 67% of subjects were White, 25% Asian, and 8% Black. Fifty percent of students were juniors, 42% seniors and 8% freshman. The first objective sought to describe the content of post-class writing prompts. Before the treatment, student writing prompts included an average of 0.58 new ideas/student ($SD=0.79$) and the post-treatment essays had an average of 1.17 new ideas/student ($SD= 1.11$). In the pretest, students averaged 0.92 changed minds in their reflective prompt ($SD= 0.79$), and an average of 0.75/student in the posttest ($SD= 0.97$). A paired-samples t-test revealed significantly more new ideas written with the experimental lecture ($t= 2.55$, $p<0.05$), than the control lecture, with a *medium* effect size (0.61). Researchers rejected the null hypothesis. The second objective sought to determine if there is a significantly greater amount of changed assumptions between the control and experimental lectures. A paired-samples t-test did not show significant differences between control and treatment classes on changed assumptions ($t= 0.52$, $p>0.05$), *negligible* effect size (0.19). Researchers failed to reject the null hypothesis for change of assumptions.

Conclusions/Recommendations/Implications

For our sample, students wrote more new ideas when shown their lack of knowledge in the treatment. Researchers recommend incorporating pre-class activities to help students become aware of their knowledge gaps. An educator can assist student learning by exposing the student's lack of knowledge prior to instruction. Educators can encourage students to listen for their own knowledge gaps, like words/concepts whose meaning is unclear. The treatment did not show a significant difference in the ability to change students' assumptions. Researchers recommend exploring alternative methods to identify student assumptions and uncover previous knowledge.

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Formative Evaluation of Mentoring Project Activities: Implications for Professional Development and Evaluation Capacity Building

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Introduction/Need for Research

Three land grant universities (two 1862s and one 1890) are working on a Multi-institutional mentorship project that will support the recruitment and retention of underrepresented minorities and women in food, agricultural, natural resources and human sciences (FANH). This is a three-year initiative, which is being funded by a Higher Education Challenge Grant from the U.S. Department of Agriculture's National Institute of Food and Agriculture. Multi-Institutional mEntoring Network for Transforming Organizational CultuRe (M.E.N.T.O.R.) project connects students and faculty to create networking and interpersonal relationships that are essential for student success. The project brings together faculty from 12 land-grant universities and provides them with resources to develop campus-based diversity and inclusion mentoring programs. One of the resources provided was mini grants (up to \$15,000 over two years) to create Faculty Leadership Teams (FLT) to develop mentoring activities in their respective institutions. In addition, the project also provided professional development opportunities through webinars and expert speaker presentations on mentoring topics and provide FLT's and other staff the needed evaluation skills to successfully evaluate the project in achieving the stated outcomes. Thus, the purpose of this poster abstract was to assess progress made in the first year through a formative evaluation approach. Specifically, we examined professional development opportunities and evaluation webinars and their value in helping project participants to adequately prepare to plan, implement and evaluate their mini-grant projects.

Conceptual Framework

We used Kirkpatrick's Training Evaluation model (1998) as a framework for evaluating the M.E.N.T.O.R. project activities. "Kirkpatrick's model, which is one of the best-known models for evaluating the effectiveness of training courses, provides a comprehensive, simple and practical approach for use..." (Vizeshfar, Momennasab, Yektatalab, & Iman, 2018, p. 193). Kirkpatrick's model involves four levels-*reaction*, *learning*, *behavior change*, and *impact*. This poster abstract focuses on the first two levels of the Kirkpatrick's model, *reaction* and *learning*. *Reaction* level helps measure how participants in a program react to the training or activities. Such reactions serve as formative assessment as the training progresses to the next level. *Learning* level helps measure participant's attitude, knowledge gain, and skill development. Using this model as a framework, we sought feedback from project participants relative to their project activities and implementation (Reaction). Several professional development opportunities and evaluation capacity building activities were offered and assessed for learning which reflected the *learning* level of the model. We will continue to assess the project outcomes in years 2 and 3 to determine the *behavior changes* (stage 3) and *impact* (stage 4) of the model.

Methodology

A short survey tool was developed using Qualtrics. The survey contained three sections. Section one assessed the importance of webinars in understanding the concept of mentoring and related topics, while section two specifically assessed two evaluation webinars in terms of importance, usefulness, and their intention to use the information in their mentor projects. The statements in

both sections were measured using a five-point scale. Section three contained open-ended comments. The survey was reviewed by core members of the team (i.e., expert panel) to assess the appropriateness of questions and to establish validity. The survey was sent to all participants (N=49) who attended the workshop. Six core team members of the project were excluded from the survey response and data analysis (N=43). After initial mailing and two follow-ups, a total of 13 participants completed the survey for a return rate of (30.2 %). Data was analyzed using descriptive statistics.

Results/findings

Section one of the survey listed a series of (withheld for the blind review) webinar topics that were offered to the project participants and were asked to rate each webinar presentation using a five-point Likert scale that ranged from (1) “not at all” to (5) “a great deal. The top three highest rated webinar presentation topics were “*Inclusive and Intentional Mentoring*” ($M=4.89$, $SD=0.31$), followed by “*How to Plan and Grow Inclusive Cross-Cultural Institutional Mentoring Ecosystems*” ($M = 4.71$, $SD = 0.45$), “(Name withheld for the blind review): *Developing a Mentoring Program*” ($M = 4.70$, $SD = 0.64$). Other webinar topics also received higher ratings ranging from 4.00 to 4.5.

Regarding the two evaluation webinar topics, participants rated the topic, *Writing Measurable Objectives, Assessment Plans, and Outcomes* very high ($M = 4.67$, $SD = 0.47$), followed by *Formative and Summative Evaluation* ($M = 4.40$, $SD = 0.49$). Participants were also asked to indicate on a five-point Likert scale (1= not at all important to 5 = very important) their interest in future evaluation webinar offerings. The most important evaluation topics were, “*Writing Outcome Statements and Selecting Indicators*” ($M = 4.36$, $SD = 0.48$), and “*Conducting Needs Assessment*” ($M = 4.36$, $SD = 0.64$). “*Developing Survey and Questions (Instrumentation)*” ($M = 4.18$, $SD = 0.57$), and “*Constructing a Logic Model*” ($M = 4.09$, $SD = 0.51$) were rated as “important.”

Overall responses on level of helpfulness and usefulness of the webinars were positive! Measured on a four-point rating scale: (1) not at all helpful to (4) very helpful, when asked “To what extent were the webinars helpful to you in increasing your knowledge and skills related to the (Name withheld for the blind review) project” 100% ($M = 3.36$, $SD = 0.48$) of respondents indicated that the webinars were either “helpful (64%)” or “very helpful (36%).” When asked “do you plan to use the information in your mentoring project, again 100% of the respondents indicated that they are either already using the information (45%) or plan to use the information (55%) in the future.

Conclusions

Based on the findings, many of the respondents indicate that the webinar topics, including evaluation webinars were very important and useful to the FLT teams and their staff. Verbatim comments from a respondent supports this conclusion, “*Be inclusive and keep doing what you are doing, and evaluation sessions were very helpful for the project and future work.*” The findings not only provided key input that informed core project team decisions on future webinars and activities, but also help build evaluation capacity of FLTs and project staff, which is key to conducting systematic and robust evaluations for better outcomes.

Implications/Recommendations/Impact on Profession

This study highlighted a need for enhancing mentoring and evaluation concepts through webinars/ workshops for a multi-institutional project. This research has also shown that the information presented is useful and helpful to the FLT participants. The findings are of immense value going forward for making informed decisions on both project activities and evaluation capacity. The interest in future evaluation webinars is indicative of the desire of FLTs and project staff to learn and contribute to systematic evaluation of their mentoring projects.

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Online Youth Global Learning Program: Educator Perceptions

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Introduction

Since 2019, the Global Teach Ag Network has provided programming targeted for secondary students named “GLAGjr” to educators registered for the Global Learning in Agriculture (GLAG) Conference. During GLAG, educators are provided professional learning opportunities in food security and global learning. GLAGjr provides educators with online modules that are ready to be adapted by educators in their instructional settings for secondary students to bring the content from GLAG into their classrooms. Due to COVID-19, utilization of online learning platforms increased across the world (Sidamon-Eristoff, 2020). Researchers need to analyze a wide range of actions to define the interactions instructors use and the potential of interactions that supports meaningful online learning (Kanuka & Garrison, 2004) and facilitates students’ satisfaction (Hosler & Arend, 2012; Maddrell, Morrison & Watson, 2011). The research project focused on ways to improve the online learning modules and their effectiveness, as well as revealed educator needs to utilize online materials both in the classroom and remotely. As the researchers continually seek to improve program delivery and meet a higher demand of educators searching for future online resources, the hope for the study was to be a catalyst for further evaluation of GLAGjr programming.

The following objectives guided the research study:

1. Describe educator perceptions of global learning in agriculture needs through three virtual focus groups with six to eight educators in each group.
2. Determine educator preference to online mode and platforms for virtual global learning instruction.

Theoretical Framework

The Community of Inquiry (CoI) (Figure 1.) was the theoretical framework guiding the research study. The CoI framework represents creating a deep and meaningful learning experience through the development of three interdependent elements – social, cognitive, and teaching presences (Garrison, 2000). The research-grounded framework has proven effective over the last three decades. Researchers reported that meaningful learning outcomes are provided by following the CoI framework in the online instructional process (Rourke & Kanuka, 2009). The framework is an effective way to explain the interactions among people, content and system for successful teaching and learning (Garrison, Anderson, & Archer, 2001; 2010). In applying this framework to online educational spaces, research evidences the intersection of the three presences has a strong positive influence on participant experiences in their online programs (Flock, 2020; Boston, et al, 2019). The research study was guided by the CoI Framework to explore the interactions of each of the three presences to determine the educational experience being curated through GLAGjr.

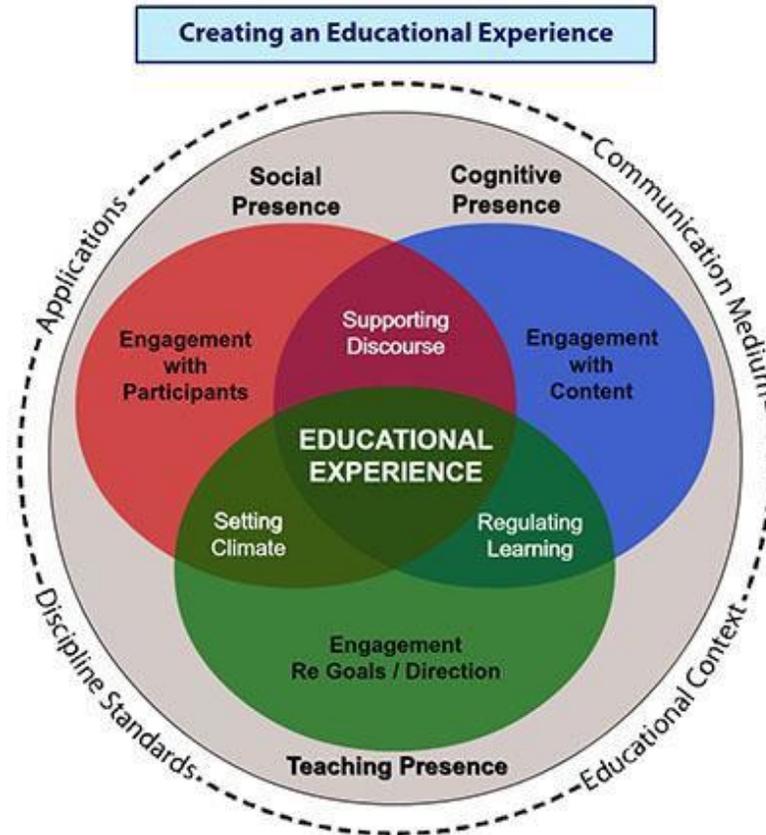


Figure 1. Community of Inquiry Theoretical Framework

Methods

The research study was qualitative in nature. Focus groups of educators utilizing GLAGjr were conducted. Twenty-one educators from a possible population of 60 opted into participating in one of three purposively formed focus groups largely formed to accommodate professional schedules. Each focus group responded to prompts addressing their challenges with teaching global agriculture through virtual settings, the educational technology platforms they utilized in their classroom prior to the COVID-19 pandemic as well as the platforms they have adopted since the onset of the pandemic and needs they must have to comfortably teach global agriculture through online platforms in the future. A non-biased facilitator was engaged to manage focus group sessions. An additional observer/note taker that was not part of the study or population was enlisted to keep notes for triangulation of findings for each focus group. Trustworthiness of the data analysis was advanced with the research team’s collaboration for credibility, an audit trail of data analysis for dependability as well as routine review of examination of perceptions of the team members to provide the reflexivity called for in a qualitative study (Lincoln & Guba, 1985) A thematic analysis of the session transcripts was conducted using MAXQDA software to evaluate educator needs and challenges, as well compile a list of educational technology platforms that are being utilized heavily for online teaching related to global agriculture.

Findings

The research team utilized MAXQDA analysis to review the focus group transcripts compiling a list of commonly shared sentiments. Emergent themes included “*the sense of being overwhelmed by sheer number of options in educational technology platforms*” coupled with a “*frustration on where to begin*”, the “*role of institutional mandates play in educational technology decisions*”, and the “*need for explicit examples of global food security integrations to existing curriculum frameworks.*” A phenomenon that emerged organically which suggested a need for further investigation in future studies was labeled by the researchers as “AHA Moments.” The “AHA Moments” were sudden insight and innovation articulated by the educators. Insight involves an interpretation of concepts that is commonly recognized as creativity (Friedman & Förster, 2005). The “AHA Moments” provided broad context for connecting to specific characteristics of the domains of the CoI Framework. Twenty specific “AHA Moments” emerged throughout the texts and settled into six researcher identified domains. The six domains included Teacher Practices, Learner/Learning, Time, Connection, Social Media, and Global. The Teacher Practices domain had the strongest presence with 11 occurrences, and the Connection paradigm occurred 5 times. Direct quotes exemplifying each domain is provided below.

Teacher Practices

I would agree with what everyone is experiencing and saying the other addition, I would add is two pieces as outside of the curriculum and content, it's me, it's challenged me made me think outside the box or differentiation”

“I don't have many students that are currently learning virtually, but I anticipate that happening. One thing that I think would be super helpful or one thing that I've just thought about in my mind is choosing what I would consider core concepts. These are like the core things that if you're in whatever class. Let's say wildlife management. The real core takeaways that you need to know and understand and creating kind of like the previous speaker said like recordings. Really good, well done, lesson recording engaging on those core concepts and then teachers, and especially young teachers, I think they're still just like trying to get their grip in their classroom and then they're being asked to teach this way they could take those core recordings and those recordings would fit. And then, as a teacher, then I can, I can work from there. All students are receiving this core lesson and then I can get creative with them. But I think melting it down to the core and doing a really good job of providing some sort of format. I don't know if videos, the best or like a module or something. But it but make it well done so students can go through to learn those core concepts and then leave some creativity up to teachers to go from there. It goes along with your lab idea. I think a little bit like just creating those resources because I think we could go crazy creating resources, but it will it be useful to everyone. No, I think creating resources that would be useful to most people are important than this time.”

Learner/Learning

“And I think maybe one of the things that the pandemic will obviously give us some thought process on is how learning is achieved, and when time is no longer a factor in that learning. Now how does that, how does that change the way that we go about it and certainly interesting.”

Time

“...a really great opportunity to really rethink what it is we do because seat time... Why, why do we class 45 minutes or an hour or whatever it is. It is because somewhere, somebody decided that you must be in school so many hours a day. Right. It allows you to get back to a thought process of what is the absolute core information that the student needs to learn. And then, now how do we deliver. How do we do that and the How has obviously changed because we used to do it in a box in a building and now we have to do it across multiple platforms and mediums at the speed of whatever is going on and so as we start looking at this, I think one of the things is that we have to, again, we haven't had any time to do this, but yet start step back and look and alright - What is the absolute core thing that this lesson supposed to teach. How do we do that. And then once the kid gets it. Now we can move on and whether the kid gets it in 10 minutes, 60 minutes, Hundred and 60 minutes Really doesn't matter anymore.”

Connection

“...rethinking intentional and meaningful relationships. A lot of times we get that through facial expressions and being in that same space and the feeling someone gives you. So thinking about what that looks like online is another piece that I know I've been personally challenged with and the more time I invest in that I definitely see the outcomes. And then I see it, then when I try to connect then especially so my special education learners like okay she does care about my learning. She wants to get to know me. She's not here just doing her job. It's not really different from before March, but I do think it adds an extra layer. When you're doing it digitally. I think it takes a lot more time and intentionality on our end.”

Social Media

“Because teachers have had the time over the summer to kind of get more familiarized with new things and I know a lot of my teachers go to social media for a lot of their ideas. Like Tik Tok and follow other teachers from all over the country to get their ideas and they've picked up a lot over the summer.”

Global

“And I think you bring up a great point to and I, that's one of the thing that worries me is, we have we had started prior to this, as you know, an international experience with our students and Ag. And I don't know, in the future, if that's going to be possible anytime soon. So how do we how do we get some of the same experiences. How can you connect you know connecting us to maybe people who are willing to speak to our classes via zoom or those types of things, or other people who have had those experiences because, I mean, those of us who had those experiences, know that they're not something that you can replicate with a speaker, but in the foreseeable future. I don't know how we're going to be able to give those experiences.”

Conclusions/Implications

Gašević et al. (2015) reported that instructor's feedback of learning activities plays a positive role in terms of the relationship between teaching presence and cognitive presence for participants of an effective online educational experience. However, a lack of best practices and collection of online learning activities/platforms for agricultural instruction exists. The GLAGjr program is an effort to build a community of practice that fosters the development of secondary students through global learning. Garrison (2000) emphasized that there should be

an interaction between the cognitive, social and teaching presences. The researchers are driven to continue to explore the significant relationships cultivated through the GLAGjr program to create an effective online education experience.

Further research is needed to continue investigating effective online communities of practice that are curated to meet the specific needs of educators working in the space of global agriculture and food security. Given the results of the study that yielded the novel “AHA moments” and potential for articulating theoretical framework concepts through the lens of educator quotes, the researchers will be conducting similar assessments of the other programs offered under through the Global Learning in Agriculture Conference. A study conducted by Kounios & Beeman (2009) demonstrated potential to explore opportunities to facilitate insight or the “AHA moments.” Research has not been extensively conducted to study insight potential in the space of agricultural education. Studies could be done to assess the viability of comparing “AHA moments” across populations that are working with similar technology to better design programming resources that encourage a higher frequency of insight.

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