*Journal of Agricultural Education, 59(1), 35-50*
*https://doi.org/10.5032/jae.2018.01035*

# Measuring Optimal Experiences of CANR Undergraduates in a Leadership Course

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**Abstract**

*Many universities integrate leadership as a core component of agricultural education. Interestingly, little research has been conducted on the impact of leadership courses comparing the perceived leadership skills and abilities of students with and without prior leadership experience. Socio-psychological measures of flow or optimal experience during an undergraduate leadership course were used to compare and contrast sample groups within course teaching techniques. Flow theory was used to compare and contrast: 1) Student demographics in an undergraduate leadership course; 2) students with various leadership experiences; and 3) optimal experiences and leadership experiences using different teaching techniques. Results indicated that overall, students within an undergraduate leadership course are more likely to have optimal experiences during experiential learning activities and reflecting on learning. Similar results exist with undergraduate leadership students having prior leadership experience (non-FFA) and FFA experience. This research suggests that utilizing experiential learning activities in classroom learning and reflecting on those experiences may have the highest potential for producing optimal experiences in the context of undergraduate leadership education. Finally, using the experience sampling method to compare and contrast prior leadership, optimal experiences, and teaching approaches has merit and expands the suite of instruments available to understand undergraduate leadership experiences and learning.*

**Keywords:** optimal experience; leadership; experiential learning; reflection; flow theory

## Introduction

Leadership is a highly sought-after and valued commodity in today's ever-changing society (Northouse, 2016). University agricultural education faculty have recognized this and as a result, leadership courses and programs are an important component in university curricula across the United States (Birkenholz & Schumacher, 1994; Schumacher & Swan, 1993; Velez, McKim, Moore, & Stephens, 2015). Shifting leadership education from working with youth to developing leadership potential provides the impetus for educating undergraduate and graduate students on empowerment of community members to effect positive change (Velez et al., 2015). The National Research Council (2009) has issued a call for post-secondary agricultural curricula and teaching to utilize dynamic approaches to learning for post-secondary students. Approaches suggested by the National Research Council (2009) should leverage experiences that provide students with "real-world" interpretation of ideas, concepts, and skills that will in turn create learners and leaders who are successful in their future careers. It is important that faculty responsible for leadership courses and programs understand how future leaders learn (Everett & Raven, 2015). Further, it is important to understand optimal learning conditions for undergraduates to develop needed leadership skills and apply those skills to transfer to real-world application (Everett & Raven, 2015). Flow theory,

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as a socio-psychological approach, has the potential to leverage "real-world" concepts in the context of teaching and learning.

Leadership is a valued commodity within FFA and 4-H, providing a medium that fosters growth during a young person's (ages 9 to 18) formidable years (Parks & Dyer, 2005). Parks and Dyer (2005) suggest that individuals who have previous leadership experiences are more likely to participate in leadership roles at the collegiate level than their counterpart non-FFA and non-4-H peers. Although participation in organizations at the collegiate level is important (Connors, Velez, & Swan, 2006), research by Schumacher and Swan (1993) suggest that undergraduate classroom learning of leadership provides a forum for the development of efficient and effective leaders.

Conversely, Rosch and Coers (2013) suggest that even though students with prior leadership experiences continue to participate at the collegiate level, these same students do not exhibit similar leadership outcome gains during their college leadership experiences. Students with prior FFA and 4-H experiences were less likely to participate in leadership training events on campus than their peer counterparts (Rosch & Coers, 2013). Rosch and Coers (2013) suggest that increasing cognitive complexity of activities and leadership capacity through incorporation of social issues-based cases studies into classroom learning may encourage differing viewpoints and engagement in learning.

Undergraduate students need to have an understanding of the important traits of a leader (Ricketts, Bruce, & Ewing, 2008), however transference of knowledge through experiential learning teaching techniques provide a medium for learners to acquire knowledge that reinforces processes related to hands-on application (Brown & Terry, 2013; Mazurkewicz, Harder, & Roberts, 2012). Kolb (1984) suggests that student academic success is directly related to learning environments that match a student's personal learning style to the activity. Hooker and Csikszentmihalyi (2003), suggest that interaction among students and peers is a critical component for group activities that lead to experiences. Further, if a leader is necessary for the activity to occur, positive experiences most likely occur when the leader treats the group as a team (Hooker & Csikszentmihalyi, 2003).

Engagement in an activity (Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003) and intrinsic motivation to participate in the activity (Csikszentmihalyi & Csikszentmihalyi, 1988) are important fundamental aspects related to optimal conditions for learning (Vygotsky, 1978). Engagement of students through experience (Kolb, 1984; Kolb & Kolb, 2005), and an individual's desire to learn from an intrinsic perspective provide an accumulation of organizational experiences critical to the formation of perceptions about what makes a leader (Kouzes & Posner, 2002). Further, a critical part of the experiential learning cycle is the reflective process associated with experiential learning (Kolb, 1984). Roberts (2008) suggests that the value of reflective capacity in learning is critical to meeting challenges and creating "reflective leaders" at the undergraduate level. Varying teaching styles and utilization of dynamic approaches in leadership education curricula may provide an opportunity for students to create and reflect upon optimal experiences through differing levels of engagement in learning.

## Theoretical Foundation

### Flow Theory

From a teaching and learning perspective, Vygotsky (1978) operationalized flow or the optimal experience in the context of learning in terms of the *zone of proximal development*. In Vygotsky's (1978) definition, the *zone of proximal development* was characterized by providing

students with a task that challenges an individual while falling just beyond an individual's skill level in that activity (Csikszentmihalyi & Csikszentmihalyi, 1988; Massimini & Carli, 1988) (see Figure 1). The *four-channel model of flow* is generally based on Vygotsky's *zone of proximal development* by the following assumptions framed within Csikszentmihalyi's flow theory (1975) including: a) *Control* of the experience; b) *attention* during the experience; c) *curiosity* about the experience; and d) an *intrinsic interest* to perform the experience.

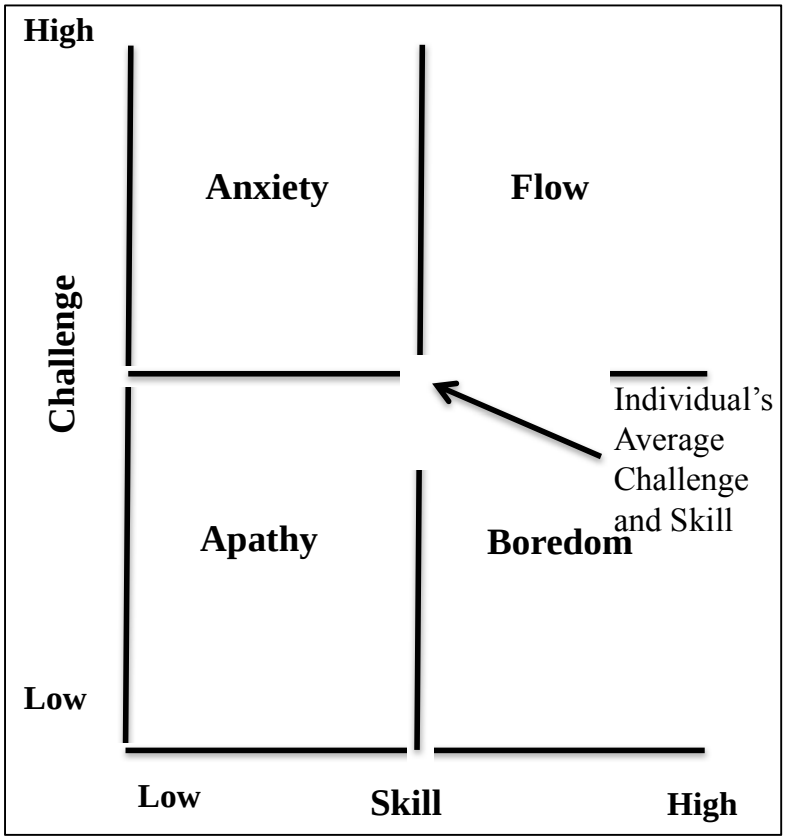


*Figure 1.* The four-channel flow model applied to Experience Sampling Method. The origin for the optimal experience is the individual average of challenge and skills. Only when an individual is above that point does flow begin (Adapted from Csikszentmihalyi & Csikszentmihalyi, 1988; Massimini & Carli, 1988).

Flow or optimal experience research has often been cited in the context of physical activities such as hiking (Wöran & Arnberger, 2012), mountain climbing (Bassi & Delle Fave, 2004; Csikszentmihalyi, 1975), hunting (Everett & Gore, 2015), and kayaking and rafting (Jones et al., 2000). Additionally, flow has been applied to the context of secondary (Bassi & Delle Fave, 2004; Shernoff et al., 2003) and post-secondary education (Asakawa, 2010; Asakawa, 2004; Everett & Raven, 2015, 2016; Rogatko, 2009). However, little attention has been given to the utilization of flow theory with respect to leadership in an undergraduate education classroom context.

Shernoff et al. (2003) defined flow theory as a symbiotic relationship between challenges and skills to meet a particular task. For example, flow was used with college students (Asakawa, 2010; Asakawa, 2004; Everett & Raven, 2015, 2016; Rogatko, 2009) and high school students (Bassi & Delle Fave, 2004; Shernoff et al., 2003) to understand perceived enjoyment, interest, and

concentration levels of individuals during specific activities. According to Asakawa (2010), students who experienced flow on a regular basis were more likely to be actively engaged in the activity as well as having goals and expectations consistent with learning. Asakawa (2010) aimed to determine if college students' flow experiences led to individuals that do things for their own sake or are intrinsically motivated in their tasks. Finally, research by Everett and Raven (2015) indicated that flow experiences in pre-service AFNRE students were directly related to motivation when pre-service undergraduates were instructing high school students in an FFA Career Development Event (CDE) activity. According to Senge (1990), learning and engagement is strongly associated with intrinsic motivation and interest. Engagement of learners provides opportunity for student-centered approaches to achieve success in individual and group work versus traditional aspects of learning while providing students with an appropriate level of challenge that meets a student's skill level (Shernoff et al., 2003).

The Experience Sampling Method (ESM) is the methodological approach used to measure flow (Csikszentmihayli, 1975), intrinsic motivation (Csikszentmihalyi & Csikszentmihalyi, 1988), and engagement (Shernoff et al., 2003). ESM in itself is unique in that it utilizes survey questionnaire techniques with additional mixed-mode applications to measure flow, intrinsic motivation, and engagement (Hektner, Schmidt, & Csikszentmihalyi, 2007). According to Zirkel, Garcia, and Murphy (2015), ESM approaches are an enriching and innovative way to implement educational research by enabling the researcher to ask new and interesting questions about how students, teachers, and administrators engage with education while shaping learning and outcomes for success.

## Purpose and Research Questions

The purpose of this study was to describe students' optimal level of experience determined by flow theory during different teaching techniques in an undergraduate leadership course. The following research questions were used to guide this descriptive study:

1. What were the prior leadership experiences (no prior leadership experience, non-FFA leadership experience, and prior FFA leadership experience) of students in an undergraduate leadership course?
2. Were there differences in students' optimal experiences between students with no prior leadership experience, prior leadership non-FFA experience, and prior FFA leadership experience?
3. Were there differences in students' optimal experiences depending on what teaching technique was being used in an undergraduate leadership course?

## Methods

### Population

Data were collected at Michigan State University during the fall semester of 2014 in a leadership course provided by the Department of Community Sustainability in the College of Agriculture and Natural Resources. There were 29 undergraduates enrolled in the course and 28 ($n$ = 28) students participated in the study, however students that were absent did not provide an Experience Sampling Form (ESF) on a given class. Over the course of the semester the ESF was provided to students during 14 different classes using teaching techniques ranging from guest speakers to experiential learning activities designed to reinforce theories of leadership. Where experiential learning techniques are defined as engaging students in activities that combine experience, perception, cognition, and behavioral aspects through process (Kolb, 1984; Kolb &

Kolb, 2005). Classes were selected to represent the range of teaching strategies used within the course. Treatment categories of teaching techniques were reviewed by two master teachers for validity. For this study, twenty-eight participants completed a total of 325 ESF's ($n$ = 325), which amounts to a response rate of 82.9% (14 classes x 28 students = 392 total potential responses). Five ESF's included incomplete data for analysis. By comparison, Asakawa (2004) had a response rate of 73% for a sample of undergraduate students with the ESM. Thus, the response rate of the present study was deemed acceptable by the researchers. The Experience Sampling Form research instrument for this study was a modified paper-pencil version of the Experience Sampling Method (ESM) (Hektner et al., 2007). Previous research suggests that the ESM scale is a valid and reliable measure of optimal experience (Hektner et al., 2007). Scale reliability was conducted on the ESF items and yielded a Cronbach's alpha of .71. Hektner et al. (2007) found that scale reliability of ESM instrument measures ranged from .70 to .94. The Michigan State University Institutional Review Board deemed this study exempt.

**Data Collection and Sample**

This study used event-contingent sampling (i.e., taken immediately following the teaching technique to be measured using the ESF) and a modified ESM to capture individuals' representations of experiences as they occurred within the context of everyday life activities (Hektner et al., 2007). Participants were provided with instructions at the initial class session by the researcher prior to taking the first Experience Sampling Form (ESF) survey. At the initial class session, participants were provided with a consent form and ESF and asked to fill out the survey based on a specific event during class. The ESF was designed to elicit information related to participants' demographics (age and gender), whether they had previous FFA experience, whether they held a leadership role in the FFA (e.g., chapter officer, committee chair, etc.), and questions related to flow theory as they were reflecting on the activity that they were being asked to provide information about (e.g., challenge, skill, interest, happiness, enjoyment, and concentration).

Respondents were asked to participate by filling out an ESF paper-pencil survey immediately following a specific teaching technique during the course. Classes were categorized into five specific teaching techniques. The teaching techniques included: a) Guest speakers; b) student led instruction; c) experiential activities; d) reflections on learning; and e) traditional assessment (see Table 1).

Table 1

*Teaching Techniques, Example(s) of Technique, and Frequency of Measurement of Undergraduate Leadership Students During an Experience Sampling Method (ESM) Activity Fall Semester 2014 (n = 325 responses)*

| Teaching Techniques | Example(s) | # of Sessions |
|---|---|---|
| **Guest Speakers** | Government official | 2 |
| **Student Led Instruction** | Student presentations about leadership content | 4 |
| **Experiential Activities** | Group activities, collaborative learning | 4 |
| **Reflections on learning** | Mind Map assignment after an activity | 3 |
| **Traditional Assessment** | Leadership Content Quiz | 1 |

Guest speakers consisted of industry professionals providing leadership perspectives from their respective organizations. Student led instruction included presentations and observations by students throughout the semester. Students were asked to fill out the ESF based on their perceived challenge and skill when presenting or observing other students presenting. No distinction was made between a student filling out the ESF when presenting or observing. Experiential activities included group activities and collaborative learning including a Lego activity where students had to use managerial skills within specific job tasks to complete and build a Lego structure using communication and leadership skills; and a parliamentary procedure activity where students were grouped and asked to solve a problem using Robert's Rules of Order. Examples of reflecting on learning included development of a mind map after an activity was completed in the course and reflecting on the course and course content. One class consisted of a traditional test in the form of a quiz where students were assessed over leadership course content (see Table 1).

## Instrumentation and Variables

*Dependent Variable.* The dependent measure of flow was categorized into four-channels (anxiety, apathy, boredom, and flow) measuring the level of challenge and skill, as well as associated indicators of interest. Flow was measured by the quotient of challenge to skill levels perceived by respondents in the ESF surveys. Flow statements were adapted from previous instruments by Hektner et al. (2007). Responses for both challenge and skill survey items were based on a 5-point modified Likert scale ranging from *Not at all* to *Very much*. A 5-point modified Likert scale interval was utilized with this undergraduate sample as a way to simplify options for filling out the instrument (Hektner et al., 2007). Average challenge and skill levels among respondents were calculated as the intersection of the four constructs in determining whether flow was occurring and at what level (see Figure 1).

*Independent Variables.* There were two independent variables of interest for this analysis. The first independent variable was students' previous leadership experience with the levels being FFA leadership experience, non-FFA leadership experience or no leadership experience. The other

independent variable was teaching techniques with five levels; guest speakers, student led instruction, experiential learning activities, reflections on learning and traditional assessment.

### Data Analysis

Data were analyzed using the SPSS 24.0 statistical software package. Descriptive statistics were used to determine frequencies and percentages. Average challenge and skill measures were calculated for each student to determine channels for individual experiences (i.e., anxiety, apathy, boredom, and flow) as cited in Table 1 and within the four-channel model (Csikszentmihalyi & Csikszentmihalyi, 1988, Massimini & Carli, 1988) (see Figure 1). Students indicating instances in the anxiety or flow channel were considered to be having a more optimal experience than students indicating instances in the boredom or apathy channels.

## Findings

The average age of respondents in this study was 22.5 (*SD* = 7.9) with five (18%) respondents (*n* = 28) having prior experience in leadership through the National FFA Organization, while 11 (39%) respondents indicated having another type of leadership experience other than FFA (e.g., 4-H, school-related leadership, and work-related leadership experiences). Three respondents did not report their age. Additionally, 21 (75%) respondents in this study were female with an average age of 22.6 (*SD* = 9.3), whereas the average age of males (*f* = 7) in the class was 20.9 (*SD* = 1.3). The average age of respondents with prior FFA experience was 19.8 (*SD* = 1.3), whereas the average age of students in the course with non-FFA leadership experience (*f* = 12) was 20.1 (*SD* = 1.9) and no prior leadership experience was 24.8 (*SD* = 11.4). Females made up four (80%) of the respondents with prior FFA experience, eight (73%) of the respondents with non-FFA leadership experience, and nine (75%) of the respondents with no leadership experience. Additionally, all students who indicated having prior FFA experience had leadership roles at their local regional, and/or state level (e.g., chapter officers, committee chairs, regional officers, state officers). Two female outliers contributed to the high standard deviation in age (36 & 59) for the class, female categories, and no prior leadership experience categories.

Data provided by the 28 respondents (*n* = 325 responses) and summarized in Table 2 indicated that most students with no prior leadership (78%) or prior FFA leadership (90%) had instances of either boredom or apathy during classes taught by guest speakers. Only one student that had FFA leadership experience and one student without leadership experience indicated flow during a class involving a guest speaker. However, six (29%) students with non-FFA leadership experience did indicate instances of flow during classes with guest speakers.

Table 2

*Frequency of Flow Channel Experiences and Utilizing Guest Speakers for Classroom Instruction as Compared to Previous Leadership Experience of Undergraduate Leadership Students During an Experience Sampling Method (ESM) Study (n = 49)*

| Previous leadership experience | Anxiety | Flow | Boredom | Apathy | Total |
|---|---|---|---|---|---|
| No Leadership Experience | 3 (16.7%) | 1 (5.5%) | 4 (22.2%) | 10 (55.6%) | 18 (36.7%) |
| Leadership Experience (non-FFA) | 5 (23.8%) | 6 (28.6%) | 4 (19.0%) | 6 (28.6%) | 21 (42.9%) |
| Leadership Experience (FFA) | 0 (0.0%) | 1 (10.0%) | 5 (50.0%) | 4 (40.0%) | 10 (20.4%) |
| Total Frequency | 8 (16.3%) | 8 (16.3%) | 13 (26.6%) | 20 (40.8%) | 49 (100%) |

*Note.* Data are from two class sessions, with seven missing observations.

Data presented in Table 3 showed that nearly two-thirds of students (55, 64.2%), regardless of their leadership experience, indicated instances of boredom or apathy when responding about classes using student led instruction. Students with no previous leadership experience (7, 18.9%) were slightly less likely to experience instances of flow during these classes than students with either non-FFA leadership (8, 20.0%), or prior FFA leadership experience (3, 20.0%) who indicated instances of flow.

Table 3

*Frequency of Flow Channel Experiences and Student Led Instruction as Compared to Previous Leadership Experience of Undergraduate Leadership Students During an Experience Sampling Method (ESM) Study (n = 92)*

| Previous leadership experience | Anxiety | Flow | Boredom | Apathy | Total |
|---|---|---|---|---|---|
| No Leadership Experience | 5 (13.5%) | 7 (18.9%) | 14 (37.9%) | 11 (29.7%) | 37 (33.7%) |
| Leadership Experience (non-FFA) | 7 (17.5%) | 8 (20.0%) | 15 (37.5%) | 10 (25.0%) | 40 (48.2%) |
| Leadership Experience (FFA) | 3 (20.0%) | 3 (20.0%) | 4 (26.7%) | 5 (33.3%) | 15 (18.1%) |
| Total Frequency | 15 (16.3%) | 18 (19.5%) | 33 (35.9%) | 26 (28.3%) | 92 (100%) |

*Note.* Data are from four class sessions, with 20 missing observations.

Figures contained in Table 4 show students with prior leadership experiences, either FFA or non-FFA, were more likely to have instances in the flow (22) or anxiety channels (12) during classes using experiential learning activities. A high number of students with non-FFA leadership

experiences had instances of flow (14, 35%) with an even higher number of students with prior FFA experiences (8, 44.5%). Conversely, over half of students with no prior leadership training indicated being bored (12, 35%) or apathetic (9, 26.5%) during classes using active learning activities and reflecting on the experience as defined by experiential learning.

Table 4

*Frequency of Flow Channel Experiences and Experiential Learning Activities as Compared to Previous Leadership Experience of Undergraduate Leadership Students During an Experience Sampling Method (ESM) Study (n = 92)*

| Previous leadership experience | Anxiety | Flow | Boredom | Apathy | Total |
|---|---|---|---|---|---|
| No Leadership Experience | 6 (17.6%) | 7 (20.6%) | 12 (35.3%) | 9 (26.5%) | 34 (37.0%) |
| Leadership Experience (non-FFA) | 10 (25.0%) | 14 (35.0%) | 8 (20.0%) | 8 (20.0%) | 40 (43.5%) |
| Leadership Experience (FFA) | 2 (11.1%) | 8 (44.5%) | 6 (33.3%) | 2 (11.1%) | 18 (19.5%) |
| Total Frequency | 18 (19.5%) | 29 (31.5%) | 26 (28.3%) | 19 (20.7%) | 92 (100%) |

*Note.* Data are from four class sessions, with 20 missing observations.

Table 5 reports that there were 30 instances of students being in flow during classes where they reflected on their learning experiences, regardless of their prior leadership experience. Additionally, students reported 14 instances of being in the anxiety channel. Collectively, there were 44 (66.7%) instances where optimal experiences or instances where students perceived themselves in the anxiety channel. On the other hand, there were five instances of students reporting being in the channel of apathy during classes where they were asked to reflect on their learning.

Table 5

*Frequency of Flow Channel Experiences and Reflection on Learning as Compared to Previous Leadership Experience of Undergraduate Leadership Students During an Experience Sampling Method (ESM) Study (n = 66)*

| Previous leadership experience | Anxiety | Flow | Boredom | Apathy | Total |
|---|---|---|---|---|---|
| No Leadership Experience | 5 (20.0%) | 12 (48.0%) | 6 (24.0%) | 2 (8.0%) | 25 (37.9%) |
| Leadership Experience (non-FFA) | 6 (21.4%) | 12 (42.9%) | 8 (28.6%) | 2 (7.1%) | 28 (42.4%) |
| Leadership Experience (FFA) | 3 (23.1%) | 6 (46.1%) | 3 (23.1%) | 1 (7.7%) | 13 (19.7%) |
| Total Frequency | 14 (21.2%) | 30 (45.5%) | 17 (25.7%) | 5 (7.6%) | 66 (100%) |

*Note.* Data are from three class sessions, with 18 missing observations.

Examination of Table 6 discloses that students, regardless of prior leadership experience, reported eight instances of being in the flow channel and 15 instances of being in the anxiety channel during an assessment experience. Students with non-FFA leadership experience were the most likely to indicate that they were anxious during the assessment experience (7, 70.0%). There was one reported instance of a non-leadership student being in the apathy channel during the assessment and no students with previous leadership experience. There were two instances of students being in the boredom channel.

Table 6

*Frequency of Flow Channel Experiences and Traditional Assessment as Compared to Previous Leadership Experience of Undergraduate Leadership Students During an Experience Sampling Method (ESM) Study (n = 26)*

| Previous leadership experience | Anxiety | Flow | Boredom | Apathy | Total |
|---|---|---|---|---|---|
| No Leadership Experience | 6 (54.6%) | 4 (36.4%) | 0 (0.0%) | 1 (9.1%) | 11 (42.3%) |
| Leadership Experience (non-FFA) | 7 (70.0%) | 2 (20.0%) | 1 (10.0%) | 0 (0.0%) | 10 (38.5%) |
| Leadership Experience (FFA) | 2 (40.0%) | 2 (40.0%) | 1 (20.0%) | 0 (0.0%) | 5 (19.2%) |
| Total Frequency | 15 (57.7%) | 8 (30.8%) | 2 (7.7%) | 1 (3.8%) | 26 (100%) |

*Note.* Data are from one class session, with 2 missing observations.

## Conclusions, Implications, and Recommendations

Understanding previous student leadership skills and abilities within the context of learning is critical to the development of future leaders (Northouse, 2016). This study sought to add to optimal experience research in an undergraduate setting (Asakawa, 2010, Asakawa, 2004; Everett & Raven, 2015; Rogatko, 2009), established theory (Csikszentmihalyi, 1975), and methodological approaches in the context of leadership education (Rosch & Coers, 2013).

An undergraduate leadership course within the College of Agriculture and Natural Resources at Michigan State University was used to better understand flow channels of students with no prior leadership, prior leadership not including FFA (e.g., 4-H, school-related leadership, or work-related leadership experiences), and of students who had prior FFA leadership experience. Demographic results among categories indicate that students in this undergraduate leadership class were largely female (75%) and were about 22.5 years of age. These numbers support similar gender trends of previous research in high school agricultural education (Rosch, Simonsen, & Velez, 2015) and university undergraduate leadership courses (Lamm, Carter, & Melendez, 2014) where the majority of students are female. This is especially true in terms of females participating in areas of leadership that have additional responsibilities such as serving on an officer team. There is a continuing trend in agricultural education where chapter, regional, state, and National level programs often have a higher percentage or females serving on leadership teams. There was a notable difference between the average age of students with prior FFA leadership experience (19.8 years of age) and those with no prior leadership experience (24.8 years of age). This was due to the two outlier respondents in the non-leadership category. Also, all students with prior FFA leadership experience also indicated having held a leadership position during their FFA experience (chapter officers, committee chairs, regional officers, state officers). As other subject matter areas have opportunities for students to test or place out of specific courses based on previous experience, is there a need to develop a similar mechanism for students with extensive leadership experience (e.g., FFA) to be afforded this same opportunity? Those students with prior non-FFA leadership included experiences in 4-H, school-related (e.g., National Honor Society, student council, athletics), and work related (e.g., management or other leadership position). There is a need to better understand the various types of leadership undergraduate students bring to a college of agriculture. The question also arises why there were such low numbers of male students participating in this undergraduate leadership course. Are female students more likely to seek out leadership education due to higher maturity levels? More research is needed to better understand gender differences and rationale as to why a specific gender is more likely to seek out leadership education opportunities.

Optimal experience instances as defined by students being in flow occurred with greater frequency within the teaching techniques of experiential learning activities and reflections on learning. Instances of optimal experience within the teaching technique of experiential learning activities occurred nearly a third (31.5%) of the time with all students. Optimal experience instances occurred nearly half (44.5%) of the time in students with prior FFA experience and a third (35%) of the time and with students having non-FFA leadership experience. These results suggest that students who are engaged in a specific activity are more likely to have control, attention, curiosity, and intrinsic interest in the activity while performing the learning experience (Csikszentmihalyi, 1975). This result also indicates that experiential learning activities in the context of a leadership course have important instructional value while providing students an opportunity to gain knowledge through application. Students with prior FFA experience may be able to apply previous knowledge of their FFA experience and enhance their learning while having those optimal experiences during experiential activities. Perhaps the reason the number of students without any prior leadership experience were less likely to have a given optimal experience was due to the lack of necessary knowledge and skills to fully take advantage of activities. Consequently, students with

prior leadership experience (both FFA and non-FFA) may be able to leverage their previous leadership experiences to support and provide context to those with no prior leadership experience in an effort to amplify the frequency of optimal experiences for all students. This result is consistent with previous research by Everett and Raven (2015) that teaching and learning experiences through the context of experiential education are important to the overall learning and providing optimal experiences for all students. Instructors should consider utilizing students with prior leadership experience to assist students that do not have prior experience when incorporating experiential learning activities into their classes.

A high percentage of instances of optimal experiences occurred within the teaching technique of reflection on learning (45.5%). This result supports Csikszentmihalyi's (2014) relationship between the learning experience while also supporting reflection as a significant component of the experiential learning cycle (Kolb, 1984). Instances of optimal experience during reflection of learning were highest among all channels measured for all students and among individual groups including students with prior FFA experience (46.1%). Therefore, students having prior FFA and students with non-FFA leadership experience (42.9%) may have more perceived control, attentiveness, curiosity, and intrinsic interest and motivation while participating in experiential activities and reflecting on learning as they have prior experiences in FFA or other leadership-based activities. This result suggests that reflection is important to an individual's perceived control, attention, curiosity, and intrinsic interest (Csikszentmihalyi, 1975) in the context of reflection within undergraduate leadership course and the use of mind maps or similar exercises as a reflective tool may be more likely to provide students with optimal experiences. These data also support Roberts' (2008) research that becoming a reflective leader is critical to the development of leaders at both the individual and group level.

Teaching techniques utilizing guest speakers and student led instruction were more likely to produce instances of boredom and apathy. During class sessions where a guest speaker was a central feature for learning, students may not have been engaged with the speaker based on interest level of the topic or engagement by the speaker with the students. These results may also indicate that overuse of guest speakers may negatively affect the learning experience by undergraduate students in a leadership course. One potential way to amplify optimal experiences while still using industry professionals is to have students interview professionals in an area of interest and develop a mind map or utilize another reflective tool as a way for students to synthesize the experience. This would combine an experiential learning activity with a reflective activity, both teaching techniques that this study indicated were more likely to provide students with optimal experiences during learning, while still leveraging industry professionals' practical leadership knowledge.

A high percentage of students also indicated instances of being in the channels of boredom or apathy during student led instructional experiences. Conversely, a third of instances students reported having an optimal experience during learning. It is possible that the students having an optimal experience during learning were the student presenting during a given class session while the ones not presenting reported instance in the boredom and apathy channels. Student presentations and development of oral communications skills are an important function of any leadership develop course or program (Morgan, King, Rudd, & Kaufman, 2013) and engaged students may be more likely to have optimal experiences (Everett & Raven, 2015, 2016), however students receiving instruction from other students may not be engaged in learning. Bumguardner, Strong, Murphrey, and Dooley (2014), suggest that utilizing technology may enhance agricultural leadership learning in undergraduate students. One recommendations by the authors would be for students to create YouTube videos outside of class and have students watch those videos and reflect on the content. Students may create optimal experiences by using experiential learning to create the videos (learning by doing), and reflecting on the experiences by viewing others students'

videos. Furthermore, it is recommended that additional data points be added to the ESM so researchers are able to distinguish if students had different responsibilities during a specific course. In this case whether students were presenting (active learning) or listening (passive learning).

During the measured assessment, students exhibited instances of optimal experience, with a vast majority of instances being reported either in the channel of flow or anxiety during a traditional paper-pencil assessment. This result supports the work of Newcomb, McCracken, Warmbrod, and Whittington (2004) where a level of anxiety is an important part student learning. For example, Newcomb et al. (2004) cite in Principle 6 that students are motivated when they attempt tasks that fall in their range of challenge where success is perceived, but not certain. However, if students are having incidences of high anxiety in traditional assessments there may be cause for concern. Students may be challenged by material and not perceive themselves as being skilled in the content, whereas students having flow channel experiences may have adequately prepared for the assessment and feel a high level of both challenge and skill, hence creating conditions for flow. The authors recommend further research in better understanding preparation and ability of students in traditional assessments as this relates to optimal experiences in both the flow and anxiety channels.

According to Baker, Robinson, and Kolb (2012), quality undergraduate classroom learning is characterized by teaching approaches that utilize students' learning styles to provide individual student-centered opportunities for cognitive growth. The authors suggest that additional research be conducted to better understand students with no leadership experience as well as why those with and without prior FFA experience respond well with respect to teaching techniques that utilize reflective practices in the classroom (Kolb, 1984). Measuring optimal experience of various reflective exercises is one potential avenue for future research. Additionally, the authors also suggest that further measurement occur using the ESM approach to compare different forms of experiential learning in the context of classroom instruction and learning spaces (Kolb & Kolb, 2005) as a way to better understand optimal conditions for undergraduate learning of leadership principles. Due to the small sample size of this undergraduate course, caution should be taken when making generalizations about the results of this study across a larger population. The authors recommend further research using a larger sample of students with varying levels of leadership experience.

This study explored differences in optimal experiences of students with previous FFA experience, and their peers with leadership experience (non-FFA) and no leadership experience in an undergraduate leadership course in the College of Agriculture and Natural Resources at Michigan State University. The course also sought to understand optimal experiences of undergraduates with using different teaching techniques. This research provides support that students have optimal experiences during experiential learning activities (Kolb, 1984) and reflection of their learning (Boyd & Fales, 1983; Dewey, 1933). This study supports similar research that optimal experiences are important to learning and provides the impetus for further research using socio-psychological approaches to understand leadership experiences of students and teaching techniques that support those experiences.

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