

An Examination of University Agricultural Education Faculty Attitudes toward the Implementation of High Impact Learning Experiences

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Abstract

Meaningful learning is a goal across the broad field of agricultural education and high impact learning (HIL) experiences are a mechanism to facilitate that goal. The purpose of this study was to examine university agricultural education faculty attitudes toward the implementation of HIL. Faculty (n=85) from 10 agricultural education departments nationwide responded to a survey about perceptions of HIL experiences for undergraduate and graduate students. The majority of respondents reported that as a student they had participated in HIL experiences such as study abroad, research projects, internships, and student teaching. However, neither participation as a student nor current involvement in HIL activities influenced their perceptions of HIL. Characteristics that influenced perceptions included teaching experience and departmental support. Respondents with less teaching experience possessed a stronger perception of the benefit of HIL and those who perceived they had departmental support reported less concern for barriers (i.e., time and planning) to HIL implementation. Findings revealed a need for support and training related specifically to the implementation of study abroad activities.

Keywords: High Impact Learning; teaching; university faculty; attitudes; support

Introduction

Meaningful learning is a goal across the broad field of agricultural education and High Impact Learning (HIL) opportunities are being touted as a way to prepare graduates for employment after graduation. For the purpose of this study, HIL experiences were defined as activities that purposefully and systematically encourage students to create new knowledge, make connections across curriculum, explore opinions/views/perspectives beyond their own, and engage in critical thinking. These methods encourage students to connect material learned in class with informal experiences through a high level of student engagement (Kuh, 1995; Kuh, 2008). Eight key elements explain HIL activities (Kuh, O'Donnell, & Reed, 2013): (a) Expectations of performance set at appropriately higher levels; (b) Student's dedication of time and efforts over a great amount of time; (c) Interactions between faculty and peers concerning practical matters; (d) Experiences with diversity, wherein students are exposed to and must contend with people and circumstances that differ from those with which students are familiar; (e) Feedback that is constructive, timely, and frequent; (f) Structured opportunities to reflect and integrate learning; (g) Opportunities to discover relevance of learning through real-world applications; and (h) Demonstration of competence for desired skill sets. HIL activities promote greater student engagement, persistence, and learning gains (Kuh et al., 2013). It has been reported, however, that

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too few students take part in HIL experiences and more research is needed to identify those experiences which would be considered high-impact (Kuh et al., 2013).

HIL experiences provide benefits for students who are actively engaged (Cruce, Wolniak, Seifert, & Pascarella, 2006; Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2006) and an increase in critical thinking ability is an area of student need (Harder, Roberts, Stedman, Thoron, & Myers, 2009) which could be addressed with HIL activities. The concept of HIL is not new. Chickering and Gamson (1987) recommended seven principles for effective undergraduate education that included very similar items to those recommended by Kuh (2008). However, new recommendations encourage students in higher education to complete multiple HIL experiences during their time in college, especially one during their first year (Kuh, 2008). College graduates' ability to think critically has declined over time and research has shown a decline in faculty teaching to higher standards to challenge students (Harder et al., 2009). This decline in focus on critical thinking skills has limited the opportunities for students to sharpen their thinking abilities (Burbach, Matkin, Quinn & Searle, 2012; Whittington, 1995). Kuh (2008) identified 10 learning experiences as examples of high-impact activities that could address this issue: (a) first-year seminars and experiences, (b) common intellectual experiences, (c) learning communities, (d) writing-intensive courses, (e) collaborative assignments and projects, (f) undergraduate research, (g) diversity/global learning, (h) service-learning and community-based learning, (i) internships, and (j) capstone courses and projects. HIL experiences may lead to progressive education outcomes for students.

This study was designed to target priority four, "Meaningful, Engaged Learning in All Environments" of the American Association for Agricultural Education's 2011-2015 Research Priority areas (Doerfert, 2011). The importance of this priority area lies in the need to encourage learners to be actively and emotionally engaged in the learning process which can occur when HIL experiences are employed. Teacher behavior has been found to impact student engagement (Estep & Roberts, 2013) and various approaches including the use of virtual environments (Murphrey, Rutherford, Doerfert, Edgar, & Edgar, 2014), exposure to international experiences (McClure, Danjean, Bunch, Machtmes, & Kotrlík, 2014), and digital gaming (Bunch, Robinson, Edwards, & Antonenko, 2014) have been studied in regard to achieving this goal. While it is presumed that faculty across agricultural education seek to provide HIL for their students, it has not been documented in the literature the degree to which faculty across agricultural education in higher education are utilizing HIL within their respective programs or what perceptions faculty hold regarding the benefits or barriers to HIL. A need existed for a better understanding of faculty perspectives toward HIL. Further, this study adds to the body of research that supports the more recent American Association for Agricultural Education National Research Agenda 2016-2020 (Roberts, Harder & Brashears, 2016) by addressing research priorities three (i.e., preparing the workforce) and four (i.e., encouraging meaningful learning environments).

Theoretical and Conceptual Framework

This study was guided by the Theory of Planned Behavior (Ajzen, 1991; Ajzen & Fishbein, 1980). The Theory of Planned Behavior is used to predict an individual's behavior using their intentions toward the behavior, attitudes toward the behavior, their subjective norms (i.e., perceptions about the importance of others' beliefs about whether or not they should perform the behavior), and the perceptions of how much control the individual has over the behavior. Attitude toward the behavior is characterized by the positive or negative value placed on the performance of the behavior. Subjective norm refers to the social pressure perceived by an individual to participate in the behavior. Finally, the perceived behavioral control involves an individual's perceptions about their ability to perform a behavior including beliefs about factors that may encourage or interfere with the behavior (Ajzen, 1991; Ajzen & Fishbein, 1980). Figure 1 depicts a visual representation of the Theory of Planned Behavior (Ajzen, 2006).

The Theory of Planned Behavior has been used in a number of studies ranging from studying undergraduate students' intentions to study abroad (Schnusenberg, de Jong, & Goel, 2012), predicting undergraduate college students' use of mobile devices in a learning environment (Cheon, Lee, Crooks, & Song, 2012), and examining undergraduate students' choices for short-term and long-term study abroad programs (Fitzsimmons, Flanagan, & Wang, 2013).

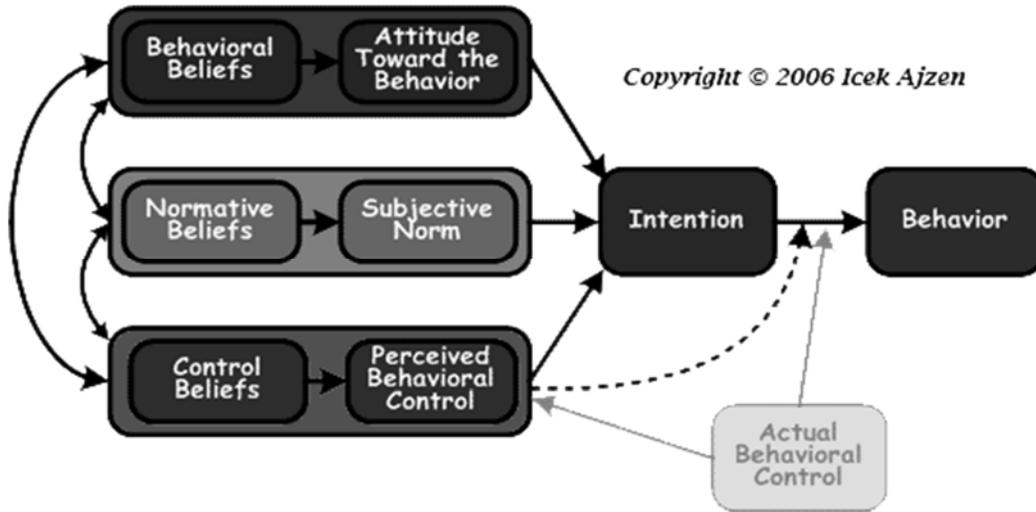


Figure 1. The Theory of Planned Behavior. (Ajzen, 2006). Reprinted with permission.

This study examined university agricultural education faculty perceptions regarding HIL to understand their attitudes toward using HIL. According to the Theory of Planned Behavior (Ajzen, 1991; Ajzen & Fishbein, 1980), understanding faculty perceptions about HIL is the first step in beginning to understand what impacts their intention to implement HIL experiences and use HIL in their courses. Faculty attitudes toward the use of HIL were assessed using a conceptual model developed by the researchers (see Figure 2). This model reflects individual characteristics, external elements, and overall perceptions of HIL experiences.

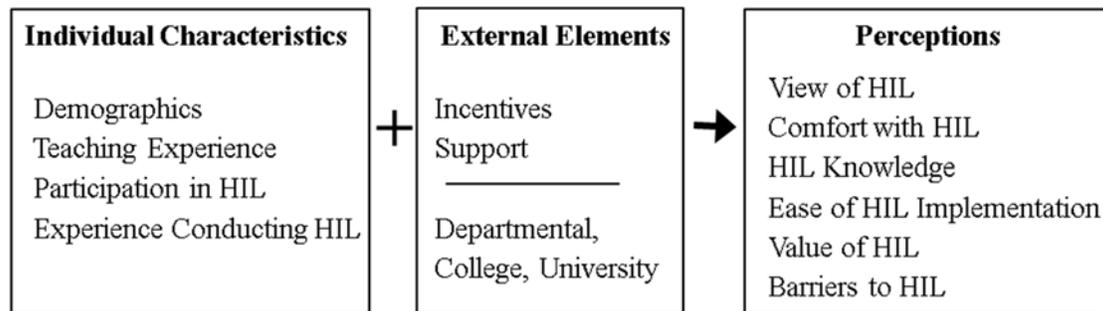


Figure 2. Conceptual model to study faculty attitudes toward High Impact Learning (HIL) in departments of agricultural education.

A review of literature revealed the importance of examining the role that individual characteristics and external elements can serve in influencing individual views and actions. Han

and Martin (2015) considered similar items in their examination of agriculture teachers' perceptions of biomass production, Smith and Myers (2012) considered characteristics such as racial breakdown of a school and a school's geographic region in their study of principal perceptions and Johnson, Wilson, Flowers, and Croom (2012) considered demographic characteristics in their study of perceptions of agriculture educators about special needs students. Further, incentives and policies associated with incentives have been examined for their impact on behavior (Firestone & Pennell, 1993) and approaches to teaching have been shown to be impacted by "perceptions of the teaching environment," "conceptions of teaching," "disciplinary characteristics," and "situational factors" (Richardson, 2005, p. 676).

For this study, relevant perceptions included the respondents' view of HIL, their comfort, knowledge and ease of implementation of HIL, as well as perceptions related to value (i.e., benefit) and barriers to HIL. The researchers measured these areas to examine their impact on individual attitudes toward HIL. Subjective norms were assessed through questions about the perceived support and incentives for HIL experiences at the department, college, and university levels. Perceived control related to implementing HIL experiences was examined by considering the perceptions of benefits and barriers related to HIL experiences.

Purpose and Objectives

The purpose was to examine university agricultural education faculty attitudes toward the implementation of HIL. Specific objectives included:

1. Identify individual characteristics of agricultural education faculty regarding HIL.
2. Identify overall agricultural education faculty perceptions of HIL.
3. Examine the impact of specific external elements on perceptions of HIL.
4. Describe relationships between specific characteristics of faculty in agricultural education and their attitudes toward HIL.

Methods

Descriptive survey methodology was used to examine faculty attitudes toward HIL experiences. In an effort to survey agricultural education faculty employed in programs that were likely to be utilizing HIL, teaching faculty in departments of agricultural education ranked as distinguished by Birkenholz and Simonsen (2011) served as the target population. The population included teaching faculty whose information was collected from each department of agricultural education's website. There were a total of 121 individuals in this population. The responding population was recoded to protect individual identities. Institutional Review Board approval was received to conduct the research.

The researcher-developed survey instrument included questions in the following categories: HIL perceptions, support and incentive perceptions, respondents' experience with HIL, and respondent characteristics. The instrument included multiple choice questions, scale-type questions, and open-ended questions. The definition of HIL was provided prior to the section focused on HIL perceptions in order to provide context for the respondent when answering the questions. The perception questions included 11 Likert-type statements related to benefits and barriers to HIL and 15 scale questions related to comfort, knowledge and perceived ease of implementation for HIL activities in general as well as study abroad, internships, and research specific activities. The section focused on support and incentives for HIL, which related to external elements that could impact perceptions, included three scale questions to assess perceived support for HIL activities, and one multiple choice and two open-ended questions to allow input regarding incentives currently provided as well as incentives that would encourage participation. The section

focused on HIL experience included open-ended questions which allowed respondents to share their experience with HIL as a student and as a faculty member, provide input regarding what is needed to facilitate HIL, and articulate their perception of what makes HIL different than a regular learning activity. Finally, the section related to describing the respondents included questions related to teaching responsibilities and experience, teaching awards received, current position, and age. Study participants were specifically asked to report teaching awards they had received in order to be able to accurately describe the responding group. As noted by Boyer (1990), teaching is not typically rewarded equally to research in academic settings. An exploratory study revealed that experienced faculty who had won a teaching award considered "learning about teaching [an] important aspect of their work" (Kreber, 2000, p. 75). Thus, an individual who had received a teaching award may respond differently to a survey focused on teaching (i.e., high-impact learning).

The researcher-developed instrument was pilot tested by teaching faculty in a department of animal science (n=19), reviewed by three experts in instrumentation, and reviewed by a panel of professionals across agriculture with an understanding of HIL and instrumentation to ensure content and face validity. Cronbach's α was used to measure reliability for Likert-type questions. The pilot test revealed low reliability for statements associated with benefits of HIL ($\alpha = .574$) and for statements related to distractors to HIL ($\alpha = .498$). Careful review and modifications to the instrument allowed improvement of both reliability and readability. The reliability for the final instrument calculated $\alpha = .89$ for the construct focused on benefits of HIL and $\alpha = .74$ for the construct focused on barriers to HIL. Given that the Likert-type questions were presented using a five-point scale, these values were treated as interval values rather than ordinal values and means were calculated. Based on a recommendation by Warmbrod (2014), a summated total score was calculated for each respondent for the Likert-type questions. Possible summated scores for both benefits and barriers to HIL ranged from five to 25. The higher the summated score, the more the respondent was in agreement with benefits or barriers to HIL experiences. The lower the summated score, the more the respondent was in disagreement with the benefits or barriers to HIL experiences. The instrument used in this study included demographic questions to allow for comparison analysis to be conducted based on these constructs. Study abroad, internships, and undergraduate research are high-impact experiences that research suggests increases rates of student engagement and retention (Kuh, 2008). During the review and pilot testing of the instrument, it became apparent that faculty often associate HIL with one of these activities (i.e., study abroad, internships, and research). Thus, instead of merely asking faculty to rate their comfort, knowledge and perception of ease of implementation of HIL in the broad sense, the instrument included those three items to allow respondents to more accurately report their perception of HIL.

Data collection followed the Dillman Tailored Design Method (Dillman, 2009). Emails were sent to participants with a link to the instrument. A follow-up email was sent every seven days for three weeks. An opt-out option was made available for those who chose not to participate. Eighty-five (n=85) participants responded generating a 70.25% response rate. Given that the response rate was below 85%, procedures for handling nonresponse outlined by Lindner, Murphy, and Briers (2001) were followed. A comparison of early and late respondents revealed no difference between the two groups and thus, findings are generalized to the target population. The respondents consisted of 59 males and 26 females. Numerical data were analyzed using SPSS™, a statistical program. Open-ended responses were analyzed using the constant-comparative method (Glaser & Strauss, 1999) and reported as summaries.

Findings

Objective 1: Identify individual characteristics of agricultural education faculty regarding HIL.

An examination of agricultural education faculty academic rank was conducted and revealed that respondents represented four unique groups as indicated in Table 1.

Table 1

Academic Rank of Agricultural Education Faculty Who Responded Regarding HIL Experiences

Academic Rank	<i>f</i>	%
Lecturer	16	18.8
Assistant Professor	23	27.1
Associate Professor	18	21.2
Professor	28	32.9

Note. N = 85.

Respondents revealed ages ranging from 25 years of age to 65+ years of age as indicated in Table 2. Respondents were clustered into two age groups consisting of individuals 25-44 years of age ($n=41$) and individuals 45-65+ years of age ($n= 44$). These two groups were compared to determine if there was a significant difference between the groups to satisfy Objective 4.

Table 2

Age Ranges of Agricultural Education Faculty Who Responded Regarding HIL Experiences

Age Range	<i>f</i>	%
25- 34 years old	12	14.1
35- 44 years old	29	34.1
45- 54 years old	20	23.5
55-64 years old	19	22.4
65+ years old	5	5.9

Note. N = 85.

The individual characteristics identified in the literature as having the potential to impact the use of HIL included demographics (i.e., gender, age), teaching experience, personal participation in HIL, and experience in conducting HIL. A review of responses revealed that the majority (over 90%) of the respondents indicated they were actively involved in teaching students during the semester in which the study was conducted. Eighty-two percent reported teaching undergraduates, 67% reported teaching students at the master's level, and 55% reported teaching doctoral students.

Number of years of teaching experience ranged from less than a year to over 30 years of service to agricultural education. There were 38 respondents with less than 10 years of service, 39 respondents with between 10 and 29 years of service and eight respondents with over 30 years of service. Positions and titles held by respondents were representative of all teaching positions (i.e., Lecturer, Assistant Professor, Associate Professor, and Professor) and respondents represented

both males (69%) and females (31%). Over 65% reported having received a teaching award. Based on the names of the awards provided, it was demonstrated that these individuals had been recognized as outstanding educators in the field of agricultural education. Awards ranged from the departmental level to national recognition.

Objective 2: Identify overall agricultural education faculty perceptions of HIL.

Agricultural education faculty expressed a positive view of HIL activities. Not surprisingly, the examples of activities provided by respondents as those they are currently implementing at their institutions mirrored those that they had participated in as a student. Approximately 85% of respondents indicated that they currently implement HIL activities. In regard to the duration of a high impact experience, over 67% indicated that a study abroad should be either two weeks or one month, 74% indicated that an internship should last a semester, and research was indicated as taking place over the span of a semester by 51% of respondents and a year by 31% of respondents.

HIL perceptions were collected using a set of Likert-type questions. Table 3 provides a summary of responses regarding perceptions of HIL benefits. The statement with the highest mean in regard to the perception of HIL activities was "Undergraduates benefit from HIL activities" ($M = 4.83$, $SD = .537$). A majority of respondents strongly agreed or agreed with all statements related to the perceptions of the benefits of HIL experiences.

Table 3

Perceptions of the Benefits of HIL Experiences for Students as Indicated by Responding Agricultural Education Faculty.

Statement	1		2		3		4		5		N/A	M*	SD	
	SD		D		N		A		SA					
	f	%	f	%	f	%	f	%	f	%				
Undergraduates benefit from HIL activities.	1	1.2	0	0	0	0	10	11.8	72	84.7	2	2.4	4.83	.537
HIL activities are an important concept to provide for students' experiences.	1	1.2	0	0	1	1.2	13	15.3	69	81.2	1	1.2	4.77	.588
HIL activities are beneficial for graduate students.	0	0	1	1.2	1	1.2	20	23.5	62	72.9	1	1.2	4.70	.555
Students will benefit from participating in HIL activities.	2	2.4	0	0	2	2.4	13	15.3	66	77.6	2	2.4	4.70	.745
HIL activities prepare students for careers.	1	1.2	0	0	3	3.5	24	28.2	56	65.9	1	1.2	4.60	.679

Note. N=85; Scale: 1 = Strongly Disagree (SD), 2 = Somewhat Disagree (D), 3 = Neither Agree or Disagree (N), 4 = Somewhat Agree (A), 5 = Strongly Agree (SA), Not Applicable (N/A);

*Means were calculated excluding "Not Applicable" responses; Respondents' summated scores for the five statements ranged from six to 25 ($M = 23.65$, $SD = 2.603$).

Agricultural education faculty perceptions of HIL were also collected using a set of Likert-type questions related to barriers to HIL. Table 4 provides a summary of responses regarding perceptions of potential barriers to HIL experiences. A majority of respondents strongly disagreed or somewhat disagreed with all statements regarding barriers to HIL. The statement “HIL activities are too expensive” (M=2.51, SD=1.04) received the highest mean response.

Table 4

Perceptions of Barriers Related to HIL Experiences for Students as Indicated by Responding Agricultural Education Faculty.

Statement	1		2		3		4		5		N/A	M*	SD	
	SD		D		N		A		SA					
	f	%	f	%	f	%	f	%	f	%				
HIL activities are too expensive.	14	16.5	32	37.6	24	28.2	12	14.1	3	3.5	0	0	2.51	1.04
It is difficult to fit HIL activities into degree plans and/ or curriculum plans.	24	28.2	32	37.6	7	8.2	16	18.8	6	7.1	0	0	2.39	1.27
HIL activities require too much planning and preparation.	19	22.4	38	44.7	11	12.9	15	17.6	2	2.4	0	0	2.33	1.08
HIL activities require too much time.	29	34.1	31	36.5	9	10.6	16	18.8	0	0	0	0	2.14	1.09
HIL distracts from subject matter content.	55	64.7	21	24.7	3	3.5	3	3.5	3	3.5	0	0	1.56	.98

Note. N=85; Scale: 1 = Strongly Disagree (SD), 2 = Somewhat Disagree (D), 3 = Neither Agree or Disagree (N), 4= Somewhat Agree (A), 5= Strongly Agree (SA), Not Applicable (N/A); *Means were calculated excluding “Not Applicable” responses; Respondents’ summated scores for the five statements ranged from five to 21 (M = 10.93, SD = 3.829).

Knowledge/Awareness of HIL in general, as well as the predominant HIL activities, were assessed. Table 5 provides an overview of self-reported knowledge/awareness of HIL activities including perceptions of their comfort with each of these activities and their perceived ease of implementation of each of these activities. Findings revealed a greater familiarity (i.e., comfort and knowledge) with “research” and “internships” as HIL. However, all categories were rated as “Somewhat Knowledgeable” indicating that respondents have some knowledge of all HIL activities listed.

Table 5

Responding Agricultural Education Faculty Perceptions of Comfort, Knowledge, and Ease of Implementation of HIL Activities.

Perception	Comfortable			Knowledgeable			Perceived Ease of Implementation		
	Not	Somewhat	Very	Not	Somewhat	Very	Very Difficult	Difficult	Easy
	f %	f %	f %						
HIL in general	<u>0</u> 0%	<u>28</u> 33%	<u>47</u> 55%	<u>0</u> 0%	<u>32</u> 38%	<u>43</u> 51%	<u>2</u> 2%	<u>43</u> 51%	<u>29</u> 34%
Study Abroad	<u>22</u> 22%	<u>31</u> 37%	<u>30</u> 35%	<u>22</u> 26%	<u>29</u> 34%	<u>30</u> 35%	<u>17</u> 20%	<u>56</u> 66%	<u>8</u> 9%
Internships	<u>5</u> 6%	<u>16</u> 19%	<u>63</u> 74%	<u>5</u> 6%	<u>20</u> 24%	<u>56</u> 66%	<u>2</u> 2%	<u>39</u> 46%	<u>41</u> 48%
Research	<u>4</u> 5%	<u>23</u> 27%	<u>56</u> 66%	<u>2</u> 2%	<u>23</u> 27%	<u>55</u> 65%	<u>5</u> 6%	<u>42</u> 49%	<u>33</u> 39%

Note. N values are different for each category and are provided in the order of Comfortable, Knowledgeable, and Perceived Ease of Implementation for each area. HIL in general: N=75, 75, 74; Study Abroad: N=83, 81, 81; Internships: N= 84, 81, 82; Research: N= 83, 80, 80.

General Perceptions. In order to ensure face validity, a definition of HIL activities was provided at the beginning of the instrument in order to obtain responses to the questions that matched the definition of HIL as defined within the context of the study. However, the last question on the survey requested respondents to share what they believed makes HIL activities different than a non-HIL activity. A total of 68 responses were received from the 85 faculty. The characteristics that described HIL activities included increased scope and duration, encouragement of critical thinking, relevance, application, increased depth of thought, experiential engagement, out-of-the-classroom experiences, real-world, transformative learning, self-responsibility, holistic, and engaging. As one faculty member stated, “whether the experience is beneficial to the student depends upon the student background, the timing of the experience, financial situations, and ...other factors.”

HIL Participation. Only 10 respondents indicated that they had not participated in HIL as an undergraduate student, with 67% indicating participation in HIL during both their undergraduate and graduate programs. Universally, respondents expressed the value they found through their participation in these activities. Respondents were asked to provide examples of HIL that they had participated in as a student and examples of HIL that they were currently implementing. Seventy-five (88.2%) of the respondents reported that, as students, they participated in study abroad experiences, research projects, internships, or other HIL activities. Of those respondents, 66 provided examples of the HIL they had encountered. Seventy-two (84.7%) of the respondents reported that they were currently implementing HIL as a faculty member. Of those respondents, 69 provided examples of those HIL activities. A summary of the nineteen examples

reported by respondents as a student and those currently being implemented as a faculty member are provided in Table 6.

Table 6

Examples of HIL Experiences Provided by Respondents Based on Experience as a Student and Current Involvement as a Faculty Member

HIL Examples (n=19)	Student Involvement (n=66)	Faculty Involvement (n=69)	Total
	<i>f</i>	<i>f</i>	
Research Opportunities (i.e., thesis, dissertation, applied research, proposal development, literature analysis, manuscript development)	26	32	58
Internship (i.e., official and unofficial)	25	28	53
Study Abroad / International Field Trips / International Exchanges	18	32	50
Student Teaching	16	7	23
Effective Classroom Teaching Strategies (i.e., critical thinking, simulations, journaling, critiques, application exercises, activities requiring partnering across the university, interview assignments, experiential learning, creative problem solving, scenario-based learning, debates, discussions, presentations, colloquia, mock data analysis, writing activities - popular press/news writing/media campaign)	8	15	23
Study Away / Field Trips (i.e., includes those both course-related and not course-related)	10	10	20
Projects Beyond Normal Classroom Experience (e.g., community data collection, organization evaluation, creative projects, client-based/stakeholder projects, professional project observation)	10	10	20
Service Learning Project	8	10	18
Advanced Course / Capstone Course / Honors Course / Independent Study Course	6	4	10
Participation in Organizations / Collegiate Activities / Intramural Activities	7	1	8
Conference Presentation and/or Attendance	3	2	5
Event Planning / Facilitation and Judging of Events	0	5	5
Laboratory Activities	3	1	4
Collaboration with Mentor Faculty / Independent Reading with Advanced Practitioner	3	0	3

Table 6 (continued)

Examples of HIL Experiences Provided by Respondents Based on Experience as a Student and Current Involvement as a Faculty Member

HIL Examples (n=19)	Student Involvement (n=66)	Faculty Involvement (n=69)	Total
	<i>f</i>	<i>f</i>	
Professional Plan of work / Professional Development Activities	1	1	2
Serve as Course Assistant / Instructor	1	1	2
Community Immersion	0	1	1
Part-time Employment	1	0	1
Production of a Product at the University	1	0	1

Note. Respondents could provide multiple examples. The frequency provided is the number of respondents who provided the example listed.

Objective 3: Examine impact of specific external elements on perceptions of HIL.

The external elements under investigation were specifically the role of incentives and the role of support. Over 67% of respondents indicated that they do not receive incentives to conduct HIL activities, while approximately 16% do receive incentives. Of those who reported receiving incentives, examples included both monetary incentives (i.e., supplemental pay, financial support for travel, a salary increase, financial support for professional development) and non-monetary incentives (i.e., release time from other duties, opportunity to work with motivated students, research opportunities). Sufficient data to answer the question as to whether or not incentives impacted perceptions of benefit or barriers to HIL was not available.

Respondents were provided an opportunity to provide examples of incentives that would encourage or enable them to conduct HIL. Analysis of the items submitted by 61 respondents revealed the following categories: monetary incentives/support, recognition, time allowance for preparation and implementation, support/assistance, and teaching adjustments. Monetary incentives/support included the following: supplemental pay, travel funding, professional development funding, funding of program cost, and financial assistance for students. Recognition was related to the tenure and promotion process as well as recognition of HIL as a part of teaching load. Time allowance referred to release time to prepare and implement HIL. Support/assistance focused on clerical/staff support for the HIL being implemented as well as teaching support to cover courses while a faculty member is away conducting HIL. Teaching adjustments referred to decreasing student enrollment in courses to enable implementation of HIL. Sixty-three respondents provided open-ended comments that addressed what is needed for instructors to facilitate HIL. All of the items listed related to incentives were also indicated in response to this question. Support (e.g., clerical, financial) and recognition of required time and effort were indicated as necessary in order to broadly implement HIL activities. In addition, the following items were provided: education and knowledge about how to implement HIL, mentors who have successfully implemented HIL, additional workspace and materials to enable HIL, the desire by faculty to implement HIL, and engaged students. Respondents indicated that exact needs for implementation would vary depending on the actual activity. However, in most cases there would be clerical and

planning needs and this form of support was critical. One respondent specifically shared that one critical component of HIL activities are “self-driven students” who are prepared to engage in the experience.

Some agricultural education faculty indicated in the open-ended response area that incentives do not and would not impact their implementation of HIL. These individuals expressed that providing these types of experiences were an inherent part of their job and that they gained enjoyment and satisfaction from providing the experiences. However, several respondents indicated that the specific incentives shared would encourage them to implement additional HIL activities.

Faculty perceptions regarding support received to conduct HIL activities at their institution was collected by addressing the department, college, and university levels. As shown in Table 7, respondents reported support from all three levels. In fact, a majority of responding agricultural education faculty indicated support at all three levels to be either supportive or very supportive (i. e., Department = 90.5%, College = 90.6%, University = 76.5%). Support from the university was the lowest of the three, while respondents received the most support from their department.

Table 7

Support for HIL Activities at the Department, College and University Level Reported by Responding Agricultural Education Faculty Members

Support Level	Very Unsupportive		Un-supportive		Neutral		Supportive		Very Supportive	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Department (N=85)	1	1.2	2	2.4	5	5.9	32	37.6	45	52.9
College (N=84)	0	0	3	3.5	4	4.7	42	49.4	35	41.2
University (N=83)	0	0	4	4.7	14	16.5	38	44.7	27	31.8

Note. Scale: 1 = Very Unsupportive, 2 = Unsupportive, 3 = Neutral, 4= Supportive, 5= Very Supportive.

Analysis of agricultural education faculty perceptions of the benefit of HIL revealed no significance difference when “Supportive” and “Very Supportive” responses were compared regarding college or university support. However, a significant difference in the means was revealed regarding the statement “HIL activities prepare students for careers” in regard to support from the department. Those indicating their department was “Very Supportive” ($M= 4.78$, $SD = .420$) was significantly higher ($p=.047$) in agreement with this statement than those indicating their department was “Supportive” ($M= 4.52$, $SD = .626$) with an effect size of $d=.415$. Further analysis of these two groups in regard to barriers to HIL revealed that those who reported “Supportive” versus “Very Supportive” in regard to departmental support revealed a significant difference in means for the statements “HIL activities require too much time” (Supportive: $M=2.56$, $SD=1.19$; Very Supportive: $M=1.8$, $SD=.894$; $p= .003$; $d=.639$) and “HIL activities require too much planning and preparation” (Supportive: $M=2.53$, $SD=1.107$; Very Supportive: $M=2.02$, $SD=.892$; $p=.036$; $d=.461$). The statement regarding “time” was also significant in regard to college support (Supportive: $M=2.43$, $SD=1.19$; Very Supportive: $M=1.89$, $SD=.963$; $p=.030$; $d=.454$). No significant difference regarding support at the university level was identified.

Objective 4: Describe relationships between specific characteristics of faculty in agricultural education and their attitudes toward HIL.

An analysis of responding agricultural education faculty members' perceptions of benefits of HIL and barriers to HIL was conducted to determine relationships between specific characteristics of agricultural education faculty (i.e., gender, age, whether or not the faculty member had participated in an HIL activity as a student, if the faculty was currently implementing an HIL activity, number of years teaching, whether or not a respondent had won an award, and if the respondent was currently teaching doctoral students) and their overall attitudes toward HIL. These differences were examined using t-tests to compare groups based on their responses to the statements related to HIL benefits and barriers.

Benefits of HIL. In regard to benefits of HIL, no significant difference was found based on gender, age, whether or not a respondent had participated in an HIL activity as a student, or if the respondent was currently implementing an HIL activity. However, there were three areas in which significant differences in perceptions related to benefits of HIL were found: number of years teaching, whether or not a respondent had won an award, and if the respondent was currently teaching doctoral students.

Respondents were compared based on the number of years of teaching. Those who reported working 12 or fewer years were compared with those working 13 or more years, due to a natural break in the data. The comparison revealed the statement "Students will benefit from participating in HIL activities" to be significant ($p=.042$, $d=.349$), with those teaching 12 years or less having a mean of 4.89 ($SD=.315$) and those with 13 years or more having a mean of 4.61 ($SD=.802$).

A comparison of groups based on whether or not respondents had received a teaching award revealed a significant difference in the response to the statement "Undergraduates benefit from HIL activities" ($p=.034$, $d=.314$). Those who reported not having received a teaching award ($M=4.96$, $SD=.189$) had a higher mean than those who had received a teaching award ($M=4.76$, $SD=.637$).

Of those who reported teaching students at the time of this study, a comparison was made between those who teach doctoral students and those who do not teach doctoral students. Those who teach doctoral students had a significantly ($p=.012$, $d=.409$) lower mean ($M=4.55$, $SD=.928$) than those who do not teach doctoral students ($M=4.93$, $SD=.262$) for the statement "Students will benefit from participating in HIL activities."

Barriers to HIL. An analysis of responding agricultural education faculty members' perceptions of barriers to HIL was also conducted based on specific characteristics. In regard to barriers to HIL, no significant difference was found based on gender, age, whether or not a respondent had received a teaching award, the number of years of teaching, what level (i.e., undergraduate, master, doctoral) of student taught, whether or not a respondent had participated in an HIL activity as a student, or if the respondent was currently implementing an HIL activity.

Conclusions

This study examined university agricultural education faculty members' perceptions regarding HIL to understand their attitudes toward HIL and gain insight into intentions to use HIL. Using the Theory of Planned Behavior (Ajzen, 2006) as the framework, agricultural education faculty attitudes, subjective norms, and perceived behavioral control were assessed. Faculty attitudes were assessed by examining individual characteristics, external elements, and overall perceptions of HIL experiences. Subjective norms were assessed through questions about the perceived support for HIL experiences at the department, college, and university levels. Perceived

behavioral control was assessed through respondents' perceptions of the benefits and barriers of HIL experiences. Respondents represented individuals with diverse academic rank (i.e., lecturer, assistant professor, associate professor, and professor), age (i.e., 25 years of age to greater than 65 years of age), and teaching experience (i.e., less than a year to over 30 years).

Attitudes toward HIL refer to the value placed on implementing HIL activities. Most responding agricultural education faculty held positive perceptions toward HIL. In addition, they indicated awareness of HIL activities, expressed a positive perception of the benefits of HIL, and overall disagreed that barriers exist to implementing HIL. Findings revealed that demographics such as age and gender did not impact respondents' perceptions of benefits or barriers to HIL. Interestingly, whether or not a person experienced HIL as a student or was currently implementing HIL did not impact their perceptions. However, teaching experience and the level of students taught did impact perceptions of the benefits of HIL. Given that respondents with fewer years of experience, those who taught students below the doctoral level, and those who had not received a teaching award held a stronger perception of the benefit of HIL, it was concluded that these characteristics could impact perceptions of HIL benefits and thus faculty attitudes toward HIL implementation. Given that all respondents indicated they were "somewhat or very" comfortable and knowledgeable about HIL in general, it was concluded that respondents possessed an awareness of HIL. However, just over half (53%) of the respondents indicated HIL was either "difficult" or "very difficult" to implement. Thus, it was concluded that while respondents have awareness and comfort with HIL that does not equate to an effortlessness process.

Findings related to respondents' perceptions of support from their department, college, and university revealed that the perception of support impacts faculty perceptions of HIL benefits and barriers. Respondents who indicated they had departmental support reported less of a concern for barriers such as time and planning. It was concluded that responding agricultural education faculty members perceive the most social pressure from their department regarding HIL activities.

Perceived behavioral control referred to faculty perceptions about their ability to perform HIL activities including beliefs about factors that could encourage or interfere with implementing these activities. While mean scores were high in regard to positive statements indicating the benefits of HIL activities, none of the statements received a mean score of 5.0. This indicated room for improvement of HIL perceptions. Based on responses regarding knowledge of HIL, it was concluded that while faculty are familiar with HIL in general, they are most familiar with HIL in the form of internships and research. This was further supported by the examples provided by respondents in regard to experiences as a student and as a faculty member. Study abroad activities, while recognized as an important form of HIL, received the highest percentage (86%) of responses indicating them as "difficult" or "very difficult." It was concluded that faculty specifically need assistance in this area. Perceived behavior control was highest for the HIL activities of internships and research and lowest for the HIL activity of study abroad. Given that over 67% of respondents reported they do not receive incentives for conducting HIL, it was concluded that incentives to conduct HIL are not common practice across departments of agricultural education in higher education.

Implications and Recommendations for Research

High Impact Learning (HIL) experiences have been documented to be beneficial for students (Cruce, et al, 2006; Kuh, et al., 2006). The implication exists that better understanding of faculty perceptions toward HIL would enable identification of those aspects that affect the ability of agricultural education faculty members to provide HIL activities to students. It was thought that faculty who had experienced HIL as a student might have a more positive perception of HIL as a faculty member. However, that was not the case. Participation in HIL as a student did not impact perceptions of HIL. There is the possibility that exposure as a student could have influenced aspects

other than perception such as ability to conduct HIL or interest in specific types of HIL. Further research would be needed to answer those questions.

A review of the list of HIL examples provided by respondents revealed diverse perspectives. It is recommended that research be conducted to examine HIL activities implemented within departments of agricultural education to assess outcomes of these activities and compare these outcomes with the criteria for HIL as identified by Kuh et al. (2013).

Findings related to the perception of departmental support for HIL was noteworthy. Respondents who perceived support from their department reported barriers as less of an issue. Departmental leaders should continue to assess the needs of their faculty in regard to the implementation of HIL and support HIL learning initiatives. Consideration of the items listed by respondents as both incentives and as enablers of HIL has implications for administrators. In reviewing the responses to the question, "What is needed to facilitate HIL activities?", it became apparent that specific types of support would further advance the implementation of HIL by the respondents and possibly other faculty. The implication exists that with increased support there could be an increase in HIL. It is recommended that research be conducted to determine creative and effective methods to provide support in the following areas: monetary, recognition, assistance, and time allowance.

No difference in perceptions was found based on whether or not a respondent was currently implementing HIL. However, findings did reveal that as a faculty member gains experience in teaching and earns teaching awards, the perception of the benefit of HIL to students may decrease. It is possible that these individuals may be more confident in their teaching strategies and thus, perceive HIL as an integrated part of their teaching rather than a separate, identifiable activity. It could also mean that as instructors gain experience they are increasingly implementing HIL in their classroom and there was an assumption that HIL was a natural part of their courses. One other aspect that could have impacted this perception about HIL experiences is the more recent attention given to HIL activities by departments and universities. The implication exists that continuous exposure to the importance of HIL is needed regardless of level of teaching experience. Further, the conclusion that faculty who teach doctoral level students had a lower perception of HIL benefits could be a reflection of the assumption that all doctoral level experiences are expected to be high impact or that these experiences are not needed or valued at the doctoral level. Additional study would assist in identifying why faculty who teach doctoral level students have a lower perception of HIL benefits than those who do not teach doctoral level students.

Study conclusions reveal that respondents recognize HIL as a valuable aspect of a student's college career. However, as indicated in the findings, a need to provide opportunities for faculty to gain more knowledge regarding areas such as study abroad exists. The perception that study abroad activities are difficult to implement was documented. This could be addressed through support and incentives. However, further research is recommended to confirm this finding.

Recommendations for Practice

Understanding faculty perceptions of HIL enables improved planning and can advance HIL activities across departments of agricultural education. Administrators must provide support, assistance, and incentives for faculty to engage in HIL activities so that obstacles are overcome and "meaningful, engaged learning in all environments" can be achieved as noted in Research Priority Four of the 2016-2020 American Association for Agricultural Education National Research Agenda (Roberts, Harder, & Brashears, 2016, p. 37). Departments of agricultural education can use findings from this study as a guide to encourage continued implementation of HIL. Agricultural education has always strived to be a very application-based field; thus, HIL is not a new approach.

Agricultural education faculty identified those activities they consider high impact. Faculty interested in implementing HIL activities should review the compiled list of HIL examples as a means of stimulating new thought about HIL. These activities promote greater student engagement, persistence, and other learning gains and too few students nationally take part in HIL experiences (Kuh et al., 2013). Understanding the support that faculty receive to implement HIL activities is critical. Responding faculty members receive support for conducting HIL activities. However, when asked what is required to conduct HIL the respondents noted very specific requirements. If departments, colleges, and universities seek to increase HIL at their institution, they should consider providing financial support, recognition, assistance, and time allowance.

Further, professional development is an important component. Best practices should be shared among faculty in the profession. This could be accomplished through professional development opportunities such as online idea-sharing sessions or at regional/national conferences via innovative idea posters. Given that respondents identified the need for increased education about HIL and the need for mentors when conducting HIL, opportunities to shadow or observe HIL experiences would also be beneficial.

Given the increased attention and focus on using HIL experiences to increase engagement and retention, it was imperative that an examination of HIL across agricultural education departments be documented. This study documented HIL use in departments of agricultural education in higher education and articulated faculty perceptions of benefits and barriers to HIL. The findings can be used both as a foundation for additional research and to guide practice.

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