

Career Skills: Perceptions of Importance and High Impact Learning Activities for Skill Development in Agricultural Economics and Agribusiness Programs¹

Maria Bampasidou²
Louisiana State University/AgCenter
Baton Rouge, LA



Kelly Grogan³, Jennifer Clark⁴ and Mikael Sandberg⁵
University of Florida/IFAS
Gainesville, FL

Abstract

Most agricultural economics departments offer a plethora of so-called “high-impact learning activities,” in-class and out-of-class experiences that make students’ education more meaningful. While these practices are resource-intensive and require great effort from students, they also help them develop the skills necessary to compete in tomorrow’s workforce. From a survey of and conversations with employers, we identify skills sought by employers. We combine this with a survey of current undergraduate students and undergraduate alumni from the Food and Resource Economics program at the University of Florida to examine students’ perceptions of these critical skills and the effectiveness of high impact learning activities for the development of these skills. The analysis indicates that critical thinking, oral communication skills and time management are top priorities for employers and seen as most important by undergraduate alumni. Participation in innovative classroom activities and two industry-oriented undergraduate clubs are perceived as the most effective activities to develop these skills.

Key words and phrases: perceptions, high impact learning, career skills, career-ready, undergraduate, graduate, employment, economics, food, resource, agribusiness, student, industry-ready

Introduction

Contemporary agricultural and natural resource economics departments have evolved in support of the land-grant mission and stressed the importance of rel-

evant curricula matching the needs of a fast-changing world of agriculture and agribusiness. In the recent past, there has been an emphasis on high-impact learning activities (HILA) and practices to prepare students for careers. These are the types of experiences, both in and out of the classroom, that make students’ education more meaningful (Kuh 2008).

The different types of curricular and extracurricular opportunities and enrichment activities offered help students acquire the skills and experiences that are highly sought after by potential employers, reinforcing the goal of the land grant system’s undergraduate teaching programs. However, these types of experiences can be expensive and resource-intensive. Given that departmental budgets are increasingly dwindling and faculty time is in high demand, it is more imperative than ever that departments are utilizing their resources wisely. Economics is ultimately about the allocation of scarce resources or how to most effectively distribute resources across competing means. In this spirit, department chairs and administrators must decide how best to allocate resources, financial and otherwise, among academic programs, extracurricular activities and other type of enrichment opportunities. With a more complete information set about the effectiveness of these programs, better allocation decisions can be made.

This paper provides a preliminary analysis of the different types of high-impact learning activities offered at a typical land-grant agricultural economics department, in this case, the University of Florida (UF).

¹Acknowledgements: The authors would like to acknowledge Erin Moynihan for her efforts and assistance with survey implementation.

²Assistant Professor, Department of Agricultural Economics and Agribusiness, 101 Martin D. Woodin Hall; Phone: (225) 578-2367; Email:mbampasidou@agcenter.lsu.edu

³Assistant Professor, Food and Resource Economics Department, McCarty Hall A; Phone: (352) 294-7633; Email:kellyagrogan@ufl.edu

⁴Senior Lecturer, Food and Resource Economics Department, McCarty Hall A; Phone: (352) 294-7636; Email:tspartin@ufl.edu

⁵Lecturer and Undergraduate Coordinator, Food and Resource Economics Department, McCarty Hall A; Phone: (352) 294-7621; Email:sandberg@ufl.edu

To determine the effectiveness of each activity, we analyze student perceptions of the importance of specific skills for their future careers. We also survey industry representatives that have recently hired our Food and Resource Economics (FRE) graduates and/or admitted our students to their internship programs to determine which skills are most important to employers.

We then assess the effectiveness, as perceived by students, of curricular and extracurricular activities offered through the FRE program at UF for the development of the most important skills. In essence, we begin to assess the benefits (both perceived and actual) and effectiveness of activities. While this analysis is specific to our department, the methods could be undertaken across a broad range of departments, universities and geographical areas. The outcome of this study can, therefore, assist administrators in allocating aforementioned scarce resources in a manner that is most productive and conducive to student learning and the development of critical skills sought by employers. Consequently, our study is not only a timely inquiry, but is also a necessary exercise.

This paper proceeds as follows. In the next section, we provide a brief discussion on high-impact learning activities and their general role in agricultural economics programs. In the following section, we discuss our survey design, method and our different study populations. We proceed with presenting our results and the last section concludes and discusses future work.

High-Impact Learning and Context of Study

In his now seminal work, Kuh (2008) extensively discusses the general importance and characteristics of high-impact learning. In particular, he shows that HILA include first year seminars and experiences; common intellectual experiences (i.e., core curricula across disciplines); learning communities (i.e., the pairing of courses for a cross-disciplinary immersive student experience); writing intensive courses; collaborative assignments and projects (i.e., problem solving in groups); undergraduate research (i.e., thesis and honors courses); diversity and global learning (i.e., study-abroad opportunities and internationally themed coursework); service learning (i.e., the application of classroom knowledge to outside situations, such as competition teams, real world learning, etc.); internships; and capstone experiences.

Kuh (2008) also discusses the required building blocks of HILA. In particular, 1) they are effortful (students are required to devote considerable time and effort); 2) they help students build substantial relationships with both faculty and peers; 3) they expose students to diversity, as they have to interact with people who may be from different backgrounds or living different lifestyles than themselves; 4) they provide students with frequent and thorough feedback; 5) they help students apply what they have learned academically in new settings and situations; and 6) they provide students

opportunities to reflect on the person they are becoming through sometimes life-changing experiences and how they fit as a global citizen in the broader reality in which they live.

Evidence from HILA have illustrated direct benefits for college students through the development of job-readiness skills and by providing students with opportunities for critical/strategic thinking and leadership experience. Recent literature assessing the role of high-impact learning for student outcomes and student success in a general higher education setting find that HILA contribute to student success and learning, e.g., Fernald and Goldstein (2013), Kilgo et al. (2015) and Seifert et al. (2014). Specifically relating the importance of HILA in agricultural disciplines, recent work by Leggette et al. (2013), McKim et al. (2013) and Odom et al. (2014) highlight the significant role field experiences can have for undergraduate students. However, there seems to be a gap in the literature when it comes to considering the broad range of high-impact learning opportunities in agricultural sciences in general and agricultural economics in particular. This paper will begin to fill this gap.

Furthermore, when it comes to agricultural economics, previous studies have voiced concern over the future of agricultural programs if they do not take note of industry needs and adjust to new environments (Coorts, 1987; Slocombe and Baugher, 1988; Scanlon et al., 1996; Graham, 2001). Institutions of higher education have been challenged to improve academic quality more broadly and provide a more integrated experience for students (Dill, 2003). As a result, over the last two decades many colleges have revisited their curricula, philosophy and mission to develop metrics to assess student learning and learning outcomes.

Studies focused on identifying industry-ready skills and level of preparation of recent graduates have offered insight into how well employers assess the preparation of recent graduates ready to pursue careers in agriculture (Blezek and Dillon, 1991; Andelt et al., 1997; Graham, 2001 and Williams et al., 2014). Learned skills and abilities that were reported as important emphasize well-developed interpersonal skills, leadership ability, problem solving, teamwork (Andelt et al., 1997; Williams et al., 2014), communication skills (Williams et al., 2014) and proficient computer skills (Williams et al., 2014). Employers recognize the benefits of students' pursuing internship and research opportunities in the transfer of these skills and abilities. Additionally, desirable character attributes include integrity, ethical judgment, interest in global trends, knowledge of more than one language (Kuh, 2008; Williams et al., 2014) and the ability to quickly adapt to a changing environment (Williams et al., 2014). Recent findings from the Hart Research Associates (2015), on behalf of the Association of American Colleges and Universities, reported that employers perceive lower levels of preparedness of graduates regarding their learned skills and abilities relative to students' self-reported perceptions.

Career Skills: Perceptions of

Most agricultural economics departments offer a plethora of activities and practices that would be considered high-impact. We have identified five main categories of HILA offered through the academic programs in FRE at UF which may contribute opportunities for meaningful student development of professional/career skills, including: 1) student research; 2) student leadership and group work; 3) in-classroom active learning approaches; 4) student competitions; and 5) marketing-oriented professional development. Let us now consider these in further detail.

In FRE, students may participate in either of two different research opportunities. Students can participate in the UF Scholars program, a competitive, university-wide program designed for a broad student audience encompassing multiple levels of student skills and abilities. The experience entails working with a research mentor for an entire academic year. Participants are required to present their research at the UF Undergraduate Research Symposium and are also required to submit a manuscript for peer-review at a professional journal. Additionally, the College of Agricultural and Life Sciences Honors Program is a college-level program that augments the traditional major with two components: a mentored and administratively-reviewed senior thesis and the supplementation of existing courses with additional projects and learning experiences.

The second category of HILA explores leadership opportunities and group work and includes the Agricultural Economics Club (Ag Econ Club). Any UF student can participate actively as a committee member or assume a leadership role in either an elected officer or committee chair or co-chair position within the Ag Econ Club. The leadership and group work component includes planning meeting agendas, inviting guest speakers and project-planning for volunteer, service and social events; professional development and education; and fundraising efforts.

Throughout the FRE curriculum, students are engaged in numerous active-learning experiences in the classroom designed to complement traditional lecturing. For instance, students participate in case studies and simulation games in several of their agribusiness courses where they act as if they were advising for or managing their own agribusiness enterprises. In multiple courses, specifically designed activities are used to reinforce theoretical concepts in a flipped-classroom environment where the students engage in activities during class time instead of learning through the traditional lecture format. One such example is an activity where students produce paper airplanes with various inputs and costs associated with inputs. Through repeated rounds, varying the amount of capital available, the students end up illustrating all cost functions that would traditionally be presented in lecture format.

The fourth category includes student competitions that may include college credit earned for their participation. FRE students may elect to participate in

Academic Bowl (colloquially referred to as "Quiz Bowl") at competitions on both the regional and national levels as organized by the Southern and American associations in our field. At these events, students compete against and with other undergraduate student teams representing other land-grant universities to showcase their knowledge of the agricultural economics curriculum in a double-elimination jeopardy-style tournament.

Finally, FRE students may elect to participate in two marketing-oriented groups. First, students can participate in the National Agri-Marketing Association (NAMA) student marketing competition which entails preparing a marketing plan for a product marketed by or to farmers and culminates in the submission of an executive summary and student team presentation at the national conference. The NAMA student chapter allows students to network with professionals, develop their marketing and communication skills and develop leadership and team-building skills (Wachenheim, 2007). In addition to applying their classroom knowledge, students also learn how to work in teams, engage in strategic decision-making and problem solving and perform under pressure in a competitive environment. In a non-competitive setting, the Produce Marketing Association Foundation Career Pathways Program (PMA) provides students across both domestic and international universities with conventions to attend yearly. FRE maintains a faculty advisor to coordinate student participation in PMA events. This provides students with networking opportunities and a chance to engage with industry professionals.

Materials and Methods

An online survey was administered, following the methods used by Dillman (1978). Current students were invited to participate via an email sent to the entire undergraduate student list serve. At the time of the emails, FRE had 304 undergraduate students enrolled. To contact alumni, we utilized an alumni list compiled by the FRE undergraduate advisor. The list included 117 alumni who graduated within the last 5 years. We estimate that this represents approximately 25% of all alumni for those years.

The student and alumni surveys were divided into 5 main parts. Part I collected background information pertaining to graduation dates, employment status and employment fields. The second section asked them to rate ten skills (discussed further below) on a scale of 1 (not important) to 5 (extremely important) in terms of their importance to the respondent's career. Next, respondents were asked about their participation in the specific HILA described above while at UF. Using their participation responses, they were then asked follow-up questions rating each specific activity's contribution, on a scale of 1 (did not contribute) to 4 (contributed a lot), to the development of the ten skills. Finally, the survey contained questions pertaining to demographic information such as gender, race and age.

In addition to surveying current and past undergraduates, we contacted 27 employers in the field of retail/consumer goods, agricultural lending, crop protection chemicals and agricultural production who had previously employed FRE graduates. Unfortunately, the initial number of employers surveyed was low and there was significant attrition throughout the survey, limiting the quantitative analysis possible on the industry side.

The University of Florida's Institutional Review Board approved the study protocol and all participants electronically agreed to consent prior to continuing on to the online survey. Participants answered questions at their discretion and could decide to stop the questionnaire at any time.

Results and Discussion

About 39% of contacted alumni and 11% of current undergraduates participated in the survey.

One might question whether participants are representative of our current and past students. The alumni for which we have contact information are likely to be the ones who were most connected to FRE through their involvement in HILA and similarly, the undergraduate students who responded are also more likely to be active members of FRE. While this means that our respondents are not necessarily representative of the department as a whole, they are likely to be representative of students who participate in HILA. Thus, our results should be applicable to current and future participants of HILA.

Table 1 presents summary statistics of respondents from the current undergraduate and undergraduate alumni survey. The majority of current and past students are white males. About half of the alumni respondents pursued graduate education upon graduation while more than half of current students plan to pursue employment upon graduation. This discrepancy may result from past economic conditions that limited employment opportunities for undergraduate students. With a recovering economy, more undergraduates will likely enter the workforce immediately after graduation, making career skill development a higher priority now.

Table 2 presents HILA participation rates of current and past undergraduate students and we test for statistically signif-

icant differences in participation rates across the two groups. Among current students Ag Econ Club (33.3%) and Quiz Bowl (27.3%) are the most common HILA, while under alumni, in-classroom activities (58.7%) and Ag Econ Club (43.5%) are the top activities.

To assess student perceptions of the importance of skills for their future careers, we undertake two forms of analysis. First, we compare perceptions across current and past undergraduates by testing for difference in means of the rating (on a scale of 1 to 5) of each skill (Table 3). We find no statistically significant difference across current and past students for any skills. It should be noted that Table 3 reports skills as defined in the survey. For some skills, such as critical/analytical thinking, students may have different definitions of the skills. This added noise may impede finding statistically significant differences in opinions.

Table 1. Summary Statistics of Respondent Characteristics

	Undergraduate Alumni			Current Undergraduates		
	N	Proportion	Std. Dev.	N	Proportion	Std. Dev.
Female	41	0.317	0.471	23	0.217	0.422
Race						
White	46	0.761	0.431	33	0.576	0.502
Black	46	0.022	0.147	33	0.030	0.174
Hispanic	46	0.043	0.206	33	0.030	0.174
Asian	46	0.022	0.147	33	0.061	0.242
Other	46	0.043	0.206	33	0.030	0.174
Age Range (years)						
Less than 21	46	0.000	0.000	33	0.182	0.392
21 - 24	46	0.239	0.431	33	0.364	0.489
25 - 29	46	0.543	0.504	33	0.061	0.242
30+	46	0.130	0.341	33	0.091	0.292
Post-Graduation Plans						
Ag Econ Grad Program	46	0.196	0.401	33	0.212	0.415
Other Grad Program	46	0.087	0.285	33	0.242	0.435
Ag Industry Employment	46	0.152	0.363	33	0.182	0.392
Natural Resources Empl.	46	0.043	0.206	33	0.030	0.174
Other Employment	46	0.500	0.506	33	0.091	0.292

Table 2. Participation Rates of High Impact Learning Activities

	Undergraduate Alumni			Current Undergraduates			Test for Difference in Means t-Statistic (Current - Alumni)
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Quiz Bowl	46	0.087	0.285	33	0.273	0.452	2.24**
NAMA/PMA	46	0.261	0.444	33	0.152	0.364	-1.16
Ag Econ Club	46	0.435	0.501	33	0.333	0.479	-0.90
Honors Program/ Undergraduate Research	46	0.152	0.363	33	0.182	0.392	0.35
Classroom Activities	46	0.587	0.498	33	0.121	0.331	-4.68***
None	46	0.130	0.341	33	0.242	0.435	1.28

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% level respectively.

Table 3. Perceived Importance of Skills for Future Employment. (On Scale of 1 to 5 with 1: Not Important, 5: Extremely Important)

	Undergraduate Alumni			Current Undergraduates			Test for Difference in Means t-Statistic (Current - Alumni)
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Evaluation Information	42	4.29	0.83	25	4.040	1.098	-1.034
Effective Oral Communication	42	4.64	0.73	25	4.360	1.036	-1.311
Professional Written Communication	42	4.31	0.84	24	4.292	0.859	-0.082
Critical/Analytical Thinking	42	4.67	0.65	25	4.440	0.712	-1.332
Solving Complex Problems	42	4.26	0.86	24	4.208	0.932	-0.237
Applying Knowledge to the Real World	42	4.43	0.80	23	4.609	0.583	0.949
Ability to Work in Teams	42	4.12	0.99	23	4.261	0.864	0.576
Ability to Use Quantitative Skills	42	4.24	0.96	23	4.130	0.757	-0.465
Time Management, Planning, and Prioritizing Work	42	4.64	0.62	23	4.565	0.590	-0.492
Proficiency with Computer Technology	42	4.36	0.76	23	4.087	0.900	-1.284

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% level respectively.

Table 4. Difference in Mean Importance Rating of Each Skill for Alumni and Current Students. Skills Listed in Order of Average Importance with the Significance of Pair-Wise t-tests for Difference in Means (Row skill - Column Skill) Reported with Asterisks

Alumni Ranking of Skills	Crit. Think.	Oral Comm	Time Man.	Apply Know.	Computers	Writ. Comm	Eval Info	Compl Probs	Quant. Skills	Teams
Critical/Analytical Thinking		0.02	0.02	0.24	0.31*	0.36*	0.38*	0.40**	0.43**	0.55**
Effective Oral Communication			0.00	0.21	0.29*	0.33*	0.36*	0.38*	0.40*	0.52**
Time Management, Planning				0.21	0.29*	0.33*	0.36*	0.38*	0.40*	0.52**
Applying Knowledge to the Real World					0.07	0.12	0.14	0.17	0.19	0.31
Proficiency with Computer Technology						0.05	0.07	0.10	0.12	0.24
Professional Written Communication							0.02	0.05	0.07	0.19
Evaluation Information								0.02	0.05	0.17
Solving Complex Problems									0.02	0.14
Ability to Use Quantitative Skills										0.12
Ability to Work in Teams										
Current Student Ranking of Skills	Apply Know.	Time Man.	Crit. Think	Oral Comm	Writ. Comm	Teams	Compl Probs	Quant Skills	Computers	Eval Info
Applying Knowledge to the Real World		0.04	0.17	0.25	0.32	0.35	0.40*	0.48*	0.53*	0.56*
Time Management, Planning			0.13	0.21	0.28	0.30	0.36	0.43*	0.48*	0.53*
Critical/Analytical Thinking				0.08	0.15	0.18	0.23	0.31	0.35	0.40
Effective Oral Communication					0.07	0.10	0.15	0.23	0.27	0.32
Professional Written Communication						0.03	0.08	0.16	0.20	0.25
Ability to Work in Teams							0.05	0.13	0.17	0.22
Solving Complex Problems								0.08	0.12	0.17
Ability to Use Quantitative Skills									0.04	0.09
Proficiency with Computer Technology										0.05
Evaluation Information										

Note: *, **, and *** indicate significance at the 5%, 1%, and 0.1% level respectively.

However, when we test for differences in rating across skills within student groups, a different picture emerges (Table 4). For alumni, critical/analytical thinking, effective oral communication and time management were rated, on average, higher than all other skills. The differences in rating are statistically significant for all pair-wise tests except for the tests of these three top skills with applying knowledge to the real world. For current undergraduate students, applying knowledge to the real world and time management emerge as top skills, but they are only statistically significantly greater than complex problem solving, quantitative skills, computer skills and evaluating information.

Among the 27 surveyed employers, about 9 reached the importance of skills section (Table 5). Interestingly, when we rank skills by average importance reported by employers, we find that the top three skills match the top three skills rated by alumni. Due to small sample size, we do not find any statistically significant differences in average ratings by employers. Open-ended questions in the survey reiterated the need for good communication (including listening), planning and execution ability and being personable. Current undergraduate students rated applying knowledge to the real world most highly, but among employers, this skill had the second lowest rating.

Employers were familiar with new hire/intern HILA activities including (number of affirmative responses in parentheses): community service projects (6), internships (4), Honors/Undergraduate research programs (3) and “other” responses including: study abroad, Ag Econ Club and learning experiences other than traditional lecturing style. These participants reported FRE students’ abilities as better (3), the same (5), or below (1) graduates from other majors, colleges, or universities.

Given the emergence of critical/analytical thinking, effective oral communication and time management as the most highly rated skills by students and employers, we will focus on these skills to evaluate HILA. Students rated each activity in which they participate(d) on a scale of 1 to 4 in terms of the activity’s contribution to the development of each skill. Since only respondents who participated in a given activity were asked to rate the activities for skill development, we combine current and past undergraduates to create more meaningful sample sizes. The activities have not changed substantially in the last five years, allowing for this combination. Table 6 reports the average ratings for the top three skills. Table 7 reports the differences in average ratings across HILA and reports significance of pairwise t-tests for a difference in mean ratings.

For critical and analytical thinking, classroom activities, research, Quiz Bowl and NAMA/PMA were all rated more highly than Ag Econ Club. However,

Table 5. Employer Perceptions of the Importance of Skills for Employees (On Scale of 1 to 5 with 1: Not Important, 5: Extremely Important)

Ranking of Skills	N	Mean	Standard Deviation
Critical/Analytical Thinking	7	4.86	0.90
Effective Oral Communication	8	4.75	0.89
Time Management, Planning, and Prioritizing Work	7	4.71	0.95
Proficiency with Computer Technology	7	4.71	0.95
Solving Complex Problems	6	4.50	1.22
Ability to Work in Teams	9	4.44	1.13
Ability to Use Quantitative Skills	9	4.44	1.13
Applying Knowledge to the Real World	7	4.43	1.13
Professional Written Communication	9	4.00	1.32

Table 6. The Contribution of HILA to the Development of Critical Thinking, Oral Communication, and Time Management (on a scale of 1: Did Not Contribute to 4: Contributed a Lot)

	Critical Thinking	Oral Communication	Time Management	N
Ag Econ Club	2.30	2.68	2.68	32
Classroom Activities	3.52	3.23	3.45	32
NAMA/PMA	3.29	3.61	3.60	16
Quiz Bowl	3.36	3.00	3.10	11
Research	3.44	2.22	3.22	10

among the top four activities, there was no statistically significant difference in ratings. For oral communication skills, NAMA/PMA was rated more highly than Quiz Bowl, Ag Econ Club and Research; classroom activities were rated more highly than Ag Econ Club and Research; and Quiz Bowl was rated more highly than Research. Finally, for time management skills, NAMA/PMA and classroom activities were rated statistically significantly more highly than Ag Econ Club. From this analysis, NAMA/PMA, classroom activities and Quiz Bowl appear to contribute more effectively to the development of critical and analytical thinking, oral communication and time management skills than Research and Ag Econ Club. This does not imply that Research and Ag Econ Club have no value to students, but they may be less valuable in terms of developing these three sought-after skills.

This research has important implications for the recruitment of students to HILA. Among current undergraduates, only Quiz Bowl has a higher participation rate than Research and Ag Econ Club. If students are made aware that NAMA/PMA develops sought-after skills, more students may participate. Participation in classroom activities, however, is dependent on the instructor's inclusion of activities in his or her course. Our results suggest that broader inclusion of activities in courses could better prepare graduates for employment.

Summary

We find a strong alignment of alumni and employers with regards to the importance of specific skills. Current undergraduates, while aligned with regards to some skills, appear to undervalue skills like oral communication. While not statistically significant, conversations with industry members also suggest that certain computer skills are being undervalued by undergraduates, who may take technology skills for granted.

Non-traditional classroom activities were consistently an important HILA for the development of sought-after skills. In an environment of limited resources, this suggests that encouraging more active learning strategies in the classroom could have a large benefit at minimal additional cost in terms of time, travel costs, etc. NAMA/PMA were also important contributors to the development of career skills. While these activities require an investment in time outside of the classroom and travel expenses, this investment may be more beneficial than investments in other extracurricular activities.

As mentioned earlier, while we believe our sample is representative of students who participate in HILA, the effectiveness of HILA may differ for the broader student population. Further research should consider effectiveness of HILA if we were able to induce increased participation from students less likely to participate.

Table 7. Difference in Mean Contribution Rating of Each Activity for the Development of Critical Thinking, Oral Communication, and Time Management Skills. Activities Listed in Order of Average Contribution with the Significant of Pair-Wise t-tests for Difference in Means (Row Activity - Column Activity) Reported with Asterisks

Development of Critical Thinking	Classroom	Research	Quiz Bowl	NAMA/PMA	Ag Econ
Classroom Activities		0.07	0.15	0.23	1.22***
Research			0.08	0.16	1.14**
Quiz Bowl				0.08	1.06**
NAMA/PMA					0.99***
Ag Econ Club					
Developing of Oral Communication	NAMA/PMA	Classroom	Quiz Bowl	Ag Econ	Research
NAMA/PMA		0.38	0.61*	0.93**	1.38***
Classroom Activities			0.23	0.55*	1.00**
Quiz Bowl				0.32	0.78*
Ag Econ Club					0.46
Research					
Development of Time Management	NAMA/PMA	Classroom	Research	Quiz Bowl	Ag Econ
NAMA/PMA		0.15	0.38	0.50	0.92**
Classroom Activities			0.23	0.35	0.78***
Research				0.12	0.54
Quiz Bowl					0.42
Ag Econ Club					

Note: *, **, and *** indicate significance at the 5%, 1%, and 0.1% level respectively.

It should be noted that significant differences may exist across industries and job responsibilities; our limited employer sample size prohibits further analysis along these lines. Additional data collection may allow for identification of industry-specific needs, which could be communicated to students early in their academic careers. It would also allow for tailored HILA activities, depending on the students' future career plans.

Literature Cited

Andelt, L.L., L.A. Barrett and B.K. Bosshamer. 1997. Employer assessment of the skill preparation of students from the college of agricultural sciences and natural resources. *NACTA Journal* 41(4): 47-53.

Blezek, A.G. and R.D. Dillon. 1991. Perceptions of agribusiness leaders toward agricultural education in Nebraska. *Journal of Agricultural Education* 32(2): 34-39.

Coorts, G.D. 1987. Updating today's curriculum for tomorrow's agriculture. *NACTA Journal* 31(2): 20-21.

Dill, D.D. 2003. The catch 22 of academic quality: Implications for universities and public policy. *Revue des Sciences de l'Education* 26(2): 337-352.

Dillman, D.A. 1978. *Mail and telephone surveys: The total design method*. USA. New York: John Wiley and Sons.

Graham D.L. 2001. Employer perception of the preparation of agricultural and extension education graduates. *Journal of Southern Agricultural Economic Research* 51(1): 89-101.

Hart Research Associates. 2015. *Falling short? College Learning and Career Success*. Washington, DC: Association of American Colleges and Universities.

Kilgo, C.A., J.K. Ezell Sheets and E.T. Pascarella. 2015. *The link between high-impact practices and student*

Career Skills: Perceptions of

- learning: Some longitudinal evidence. *Higher Education* 69(4): 509-525.
- Kuh, G.D. 2008. High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges and Universities.
- Leggette, H.R., C. Black, B.R. McKim, D. Prince and S. Lawrence. 2013. An intrinsic case study of a post-secondary high-impact field experience. *NACTA Journal* 57(3A): 129-138.
- Limbach, B. and W. Waugh. 2014. Implementing a high-impact, critical thinking process in a learner-centered environment. *Journal of Higher Education Theory and Practice* 14(1): 95-99.
- McKim, B.R., L. Latham, E. Treptow and J. Rayfield. 2013. A repeated measures study of the short-term influences of high-impact practices of college students' learning styles. *NACTA Journal* 57(3A): 122-128.
- Odom, S.F, M. Shehane, L.L. Moore, B. McKim. 2014. An analysis of a high-impact field experience in agriculture: Documenting critical thinking skills through reflection. *NACTA Journal* 58(3): 214-220.
- Seifert, T.A., B. Gillig, J.M. Hanson, E.T. Pascarella and C.F. Blaich. 2014. The conditional nature of high impact/good practices on student learning outcomes. *Journal of Higher Education* 85(4): 531-564.
- Slocombe, J.W. and E.E. Baugher. 1988. Revitalizing agricultural curricula. *NACTA Journal* 32(3): 8-10.
- Wachenheim, C.J. 2007. Growing and maintaining viable student chapters of professional organizations: The case of the national agri-marketing association. *NACTA Journal* 51(2): 60-64.
- Williams, K., T. Robertson, L. Kieth and A. Deal. 2014. Skills, knowledge and abilities employers seek in new professionals entering careers in the fed beef industry. *NACTA Journal* 349-355.

Our website is completely redesigned.

Check it out:

<http://www.nactateachers.org/>