Expectations and Experience: An Exploratory Study of Undergraduate Research Experiences as Viewed through the Experiential Learning Theory

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Abstract

Undergraduate research is a growing component of agricultural communications programs across the nation. Students draw upon their constructed experiences with research to assign the level of personal significance in their own lives and future career aspirations. This qualitative exploratory analysis investigated the experiences of four undergraduate students majoring in agricultural communications at a Mid-Western Land Grant University as they completed an on-campus undergraduate research class or experience. Participants identified research had a positive impact on the field of agricultural communications, but only the students who participated in a small, self-guided research class had a positive viewpoint toward research. All participants identified undergraduate research projects as beneficial and mentioned a desire to be recognized for their work by presenting at small-scale, on-campus research events. This study was guided by the experiential learning theory and recommends research mentors provide a positive emotional experience throughout the research process in order to allow students to construct positive associations and meanings to research.

Keywords: Undergraduate Research, Experiential Learning Theory, Expectancy Violations, Qualitative, Agricultural Communications

Introduction

Undergraduate research experience (URE) is defined as "an inquiry or investigation conducted by an undergraduate that makes an original intellectual or creative contribution to the discipline" (NSF, 2003, p. 9). Although faculty may be apprehensive about implementing UREs within their department due to a lack of resources (time, funding and availability of dedicated students), the benefits far outweigh the costs (Lei and Chuang, 2009). Undergraduate research experiences can help student increase their retention in subject matter ("CUR At-a-Glance | Fact Sheet | Council on Undergraduate Research," 2011), enhance the undergraduate experience, help focus on achieving sought after goals (Sabatini, 1997), increase student levels of knowledge acquisition and improve the perception that research can be a positive and relevant experience (Willis et al., 2013). Students also experience a transformational shift in learning styles. The higher level of independence a student experiences in their research experience, the more they learn (Nadelson et al., 2010). Furthermore, students exhibit a transition from a dependence on their advisers, to becoming true researchers and autonomous problem solvers (Rauckhorst et al., 2001).

Hunter et al. (2007) found a correlation between conducting research and an increased level of confidence in students' ability to think critically and conduct research. The biggest boost to student confidence was taking part in research that was relevant and beneficial to their field. In creating research that can positively impact their field, students gained an increased clarity in career direction, specifically toward employment in research fields (Hunter et al., 2007). When undergraduates create meaningful research they develop an increased feeling of community and sense of belonging within their department and academic field (Howitt, 2010).

Faculty Role

Benefits resulting from UREs could not be possible without the direction of a supervisor, whose role is critical (Russell et al. 2007) and is the largest factor determining the success and satisfaction with the student's URE (Howitt, 2010). Students generally enjoy the opportunity to work with an adviser in a one-on-one setting because such experiences develop a heightened com-

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munity and collegial relationship with their advisers or mentors (Seymour et al., 2004). The interactions and direction of the supervisor guides not only the students' expectations of the experience but also their satisfaction with the program. As such, students prefer supervisors that make them feel prioritized, are organized, and trustworthy (Howitt, 2010). Supervisors must realize a large part of the success of the student experience hinges on defining clear expectations and clearly defining precise and obtainable goals (Howitt, 2010). Faculty agree with students that the research topic and its ability to positively impact the field is of high importance but faculty tend to place a higher value on UREs than students do (Dahl, 2013).

Expectancy Violations Theory

The Expectancy Violations Theory (EVT) is based on the premise that interactants (any person engaged in communication) do not perceive a given interaction between individuals as random and will respond to behaviors in varying levels based upon whether their expectations for that interaction have been positively or negatively violated (Burgoon, 1978). When an interactant's expectations are positively violated, she will hold positive psychological reactions toward that experience. Conversely, when an interactant's expectations are negatively violated, negative psychological reactions occur (Le Poire and Burgoon, 1996). Furthermore, positively-violated expectations can lead to higher levels of attention toward a task or message and greater learning (Le Poire and Burgoon, 1996).

When viewed through the context of the classroom, student attitudes toward an assignment, exam, or topic can be highly influenced depending on whether their expectations have been positively or negatively violated (Houser, 2006). Therefore, when a student encounters positively-violated expectations, she may view the subject matter, assignment, or experience in a higher esteem than when her expectations are negatively violated. Although expectations are important, individual experiences carry a higher degree in course evaluation and perception than prior expectations (Houser, 2006).

Students have specific expectations they place on the classroom and instructor (Houser, 2006; Koermer and Petelle, 1991). Additionally, students expect instructors to practice clear communication on all tasks and provide ample guidance with assignments or projects (Houser, 2006; Koermer and Petelle, 1991). Since tenants of the EVT can impact students' perceptions toward the instructor and influence whether the student has a positive or negative emotional response toward the material being offered in the classroom, educators can draw upon the EVT to understand how their communication may affect instruction (Houser, 2006). Since so much hinges on the effectiveness of the supervisors and expectations held by the student, understanding the expectations of both parties has implications into the perceived learning and enjoyment of the experience (Kardash, 2000). Little is known about EVT in connection with URE's.

Experiential Learning Theory

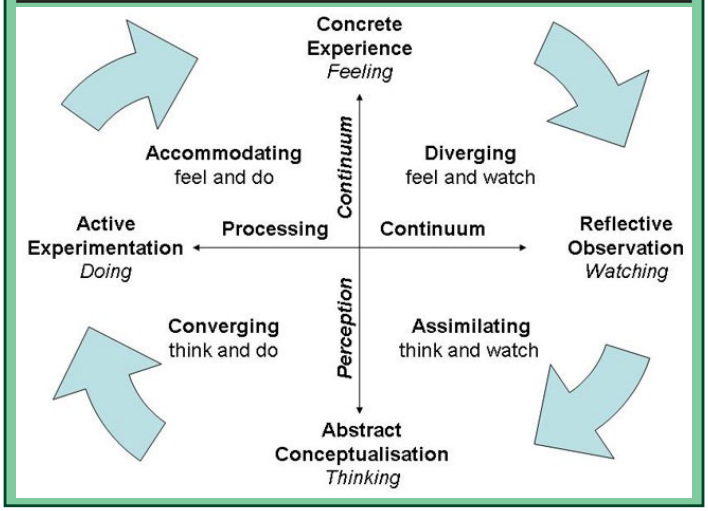
Kolb and Kolb (2005) define learning through the Experiential Learning Theory (ELT) as "the process whereby knowledge is created through the transformation of experience" (p. 194). The ELT includes six propositions: 1) Learning is not an outcome but a process, and therefore feedback should focus on the student's learning process and effectiveness of their efforts; 2) Relearning and restructuring student beliefs about topics in order to test assumptions with new ideas is a primary factor in learning; 3) the process of learners adjusting to conflict and resolving such conflict drives the learning process; 4) learning cannot be limited to the increase in knowledge but must also include 5) the interactions between the learner and the environment to which the understanding occurred; 6) learning is viewed from a constructivist viewpoint and includes the process of creating knowledge and learning through a dialectical process facilitated by conversation (Kolb and Kolb, 2005).

Experience plays a central role in the perceived outcomes of the learning process, and that experience is what differentiates the ELT (Kolb et al., 1999). The ELT places specific emphasis on the process and educational experience of the learner. Furthermore, learner experiences, whether negative or positive, can be the key determinant of achieving the educational objectives of the learning activity which can, in turn, influence the student's perception of obtained knowledge (Kolb and Kolb, 2005). A student who finds difficulty assimilating into a learning group or has a negative experience will construct negative associations with that experience, thereby altering the perception of that event. Therefore, teachers and professors must consider the social environment and quality of relationships that help foster the learning atmosphere in addition to the educational objectives. Student experiences and value of research experiences can be enhanced through creating an atmosphere and environment that promotes positive experiences of learning (Kolb and Kolb, 2005). Kolb and Kolb (2005) describe learning as a continuous process that is demonstrated in a conceptual model that involves two factors: 1) the preferred approach or learning style to a task; and 2) the emotional response to the learning process (Figure 1). Faculty can draw upon these two factors to guide students throughout the learning process of a URE's.

Purpose

Although many studies have been conducted on undergraduate research, the body of literature is concentrated on the hard sciences (engineering, chemistry, biology and physics) and neglects social sciences, specifically the field of agricultural communications. The purpose of this study was to explore the experiences of agricultural communications undergraduate students enrolled in an autonomously structured-research course and those enrolled in a classroom-based research class. Researchers sought to understand how each of these experiences shape a student's knowledge and attitudes

Figure 1. Kolb's Experiential Learning Model



toward research, the value they placed on the educational experience, and the experiences vs. expectations of the research process.

Methods

A qualitative approach was deemed appropriate for this study, because qualitative research seeks to gain an in-depth and complete understanding of a topic (Creswell, 2014) that persists outside of the researcher's paradigm (Williams and Heikes, 1993). Qualitative research is inclined to utilize purposive sampling measures where participants are selected based upon specific criterion (Creswell, 2014). The data collection method was in-depth interviews with participants. An interview at its core is an interaction between two people (Yeo et al., 2014). The interview technique of data collection makes participants more apt to divulge information, yielding in-depth and rich data (Creswell, 2014).

Prior to the study, the research team established criterion for participant selection that would draw from two research classes taken by agricultural communications students. Class A was an agricultural communications research class with low student-to-teacher ratios that focused heavily on the process and experience of research. Although two instructors within the department teach Class A, to eliminate any instructional bias, only students from one professor were included in the study. Class B was taught in the school of journalism and was a traditional lecture-based class with a high student-to-teacher ratio. Students in Class B experienced mass communications research through class lectures and a group research project. Half (n=2) of the participants were selected from Class A and half (n=2) were selected from Class B. Since a history bias could also generate a variance in responses and limit transferability of this study, an attempt was made to include students who had completed the class within one calendar year. Gender is an additional bias because although advisers show no bias in rating gender, male students tend to rate their research abilities significantly higher and view a higher increase in abilities than their female counterparts (Kardash, 2000). In light of this potential bias, students were matched by gender according to enrollment. These two criterion resulted in all female participants which closely resembles the gender breakdown of the program.

Students with higher grade point averages (GPA's) could place an increased emphasis on research than students with a lower GPA. Students with higher GPA's might have an increased desire to obtain a graduate or professional degree and hold research in higher esteem than students with lower GPA's. Once students from Class B were sampled to match the history and gender of the Class A students, GPA was used to further hone the selection. Students were first matched based upon the grade they received in their research course with the rational that students who received a higher grade in the course would have differing opinions of students who received lower merits. Students were further culled based upon the closest GPA match. No effort to match students by race was conducted since ethnic identity bears no statistical difference in rating of experience, intentions toward graduate school and satisfaction with the quality of supervision (Lopatto, 2007). The aforementioned selection criteria yielded a field of eight possible participants of which four agreed to participate in the study.

An undergraduate student was used to recruit participants and conduct the interviews so students would not feel threatened. Additionally, researchers thought students would be more open and honest with a peer than someone at a higher level with ties to the program. A 12 question interview guide that included additional prompts was agreed upon by a panel of experts and approved by the Kansas State University Institutional Review Board. Prior to the interview starting, partici-

Table 1. Characteristics of Participants

Name	Class/Status	Participant Description
Anna	A Senior	Anna is a member of the University Honors program and is required to conduct a research project as part of this program. Her adviser recommended the class as a way to fulfill that research credit. She expected to work closely with the adviser and have a rigorous workload. She had a specific idea regarding what she wanted to research and presented her research poster at two different events. Anna plans on getting her law degree.
Bethany	A Junior	Bethany was encouraged to take the class by her adviser and her employer who also worked on campus. She describes herself as self-driven and expected a rigorous workload. She expected hands-on research and close supervision from the adviser. Bethany had a specific idea regarding what she wanted to research and presented her research poster at a College of Agriculture event.
Cassandra	B Senior	Cassandra took the class because it is a required course to graduate. She took a modified 8-week class over the summer to "get it out of the way". She expected a small level of feedback from her professor. Cassandra did not conduct an individual or group research project but was exposed to research through classroom lectures.
Diana	B Senior	Diana took the class because it met a graduation requirement She expected it to be a rigorous course with ample contact and feedback from the professor. She conducted a group-research project but did not present her work.

pants signed consent forms and were given a confidentiality agreement. A description of the students is listed in Table 1. Participants were debriefed immediately after the interviews which were recorded and transcribed. NVivo 10 was used to facilitate categorizing responses into codes and categories in order to generate appropriate themes using Glaser's (1965) constant comparative method.

Limitations and Delimitations

Although every effort was made to match student history between Class A and Class B, the students of Class A had completed their research class in the previous semester while one of the students of Class B completed it two semesters ago. A potential history bias could arise, especially in regards to knowledge of research. Secondly, one student from Class A had already had some experience with conducting research. Her attitudes and experiences regarding research in agricultural communications could have been influenced by situations and phenomena outside the timeframe or focus of this study.

Results

Emergent coding of participant responses generated two themes that helped answer the guiding question of this study: 1) Although all students believed research impacts the agricultural communications profession, students with self-directed, hands-on research projects had a greater appreciation for and understanding of research; 2) Students desired recognition for research projects that can be achieved through presenting their work.

Theme 1: Although All Students Believed Research Impacts Agricultural Communications, Students with Self-Directed, Hands-On Research Projects Had a Greater Appreciation for and Understanding of Research

Within this theme were three sub themes of: topics were important; knowledge and appreciation of research; research positively impacts the field but personal impacts may vary.

Topics are important

When students were asked to describe their research project, three out of four students started describing their level of interest in the topic and how that influenced their motivation and satisfaction with the class. One student, Cassandra, did not complete a research project due to the shortened summer schedule. Diana (Class B), who did not value the experience and was enrolled in the traditional research class, stated:

"We picked a random topic which I think ours ended up being Puma vs. Adidas shoes and what influenced people to buy one or the other. That's what we ended up with. One of the guys was into soccer, so that was it. [*I would have valued the experience] if I would have gotten to do an interesting research project. I think if it's interesting and, if I had something interesting to do research on something that was going to matter to somebody, I think it would be great."*

While Diana's experience with a less-than-desirable research topic elicited a negative response, Anna and Bethany, who were both enrolled in Class A, spoke highly of the freedom to research what they wanted. Although Bethany had to change her research project mid-course due to issues beyond her control, she talked positively about her topic, saying: "*You don't have a professor telling you what to go learn about, that's your choice. You are given the opportunity to learn about what you want to learn about and that doesn't happen very often."*

Unlike the other students in the study, Anna had previous experience with research through her work with the University Honors Program. Anna mentioned her passion for a specific topic that guided her research and how the topic was a positive attribute of Class A. "*I knew I wanted to do something with crisis communications, and I love the milk company that I did my project with. I feel like you have to have an idea for your project planned when you come into the class. A common misconception is that you can just take the class like any other regular class. I feel like you have to kind of already know what you want to do with your project and like kind of already have a direction that you want to go with."*

Cassandra was enrolled in an accelerated summer research class, and although she did not express negativity toward not conducting a project, she did have an expectation of completing one. "*I thought we were going to do a specific project. But he explained that since it was a summer course, we couldn't… we didn't have the time and it was a small group of people, so we didn't have a lot to work with in terms of doing a project. So, it was different than I thought it was going to be."*

Knowledge and appreciation of research

Students who completed the self-directed Course A also seemed to have a fuller and deeper understanding of the research process and satisfaction. Since the purpose of research classes is to help students gain an understanding of research methods, students were asked to tell the interviewer what they knew about research. The literature review process was a point of emphasis for Anna and Bethany, although Cassandra also mentioned the need for secondary research.

Regarding the literature review, Anna said *"You're going to set your objectives and then you're going to do your background research of your literature review to figure out like what has already been accomplished or what has already been said and done about the topic."* Bethany gave additional clarification to the literature review process: "*You also want to do a literary assessment. You want to search all the different aspects of your topic that could be included in your research to figure out what's already been done. So one, you don't repeat and two, you can see what is and isn't working so you can see…kinda map out your methods for your research."*

Cassandra did not conduct a research project but mentioned the process of a literature review in her response, saying "*You have to look at studies that have already been done and what their outcome was, and you would compare your study outcome to theirs and see if it is consistent".* Although Diana took the same class and the same teacher as Cassandra, she did have a research project with a topic and group that she expressed dissatisfaction. Diana stated "*I don't know much about research*." When asked what she knew about the process of a literature review she responded*, "Not much".*

Students also recognized, to a varying degree, the need for designing a methodology of a study. Diana (Class B) stated, *"I know we learned about different methods, but I don't really know what they were or what they do for me. I learned analyzing data is important and conclusions are also important."* Anna (Class A) alluded to methods of research, saying: "*There is quantitative and qualitative research…Once you have your topic, then you have to figure out like what your research question is going to be. In terms of setting your objectives, and then your objectives determine where your projects going to go from there. You're going to look and set your goals and you're going to figure out exactly how you're going to answer your research questions that you've set after you look what else…what else has already been done. Then you need to figure out your data and methods in terms of human subject forms…you have to get approval in terms of all that kinds of stuff. After all that is completed, that's when you finally collect your data. Then you start analyzing your data depending if you have qualitative or quantitative analysis depends on if you're working with numbers of working themes and code books. You're going to analyze your data and then set your conclusions and figure out what you've learned from your study."*

Although Cassandra (Class B) did not conduct a research project. Her responses were more isolated to the realm of choosing appropriate sampling measures, saying: "*Pick a target audience…specific questions or topics you want to know from and come from an unbiased point of view. Random selection is important, but it's not random, you cannot call it random. A good sample pool of people is needed to get a correct analysis, so choose your audience specifically. For example, you might want to target producers, but you might need to figure out if you want to target producers in Kansas, and is it just farmers or is it ranchers, or both."*

Bethany's (Class A) study utilized a survey in her URE and her responses indicated an importance in testing the validity and reliability of the research instrument. "*You would want to draft a survey, if you wanted to survey and you want to figure out if you're thinking qualitative or quantitative or mixed methods that will help you draft your survey. Run test surveys before you actually get your real survey out there and you want to see what would be the best group or way to run your survey."*

None of the students interviewed were prompted to answer questions about data analysis or transferability and generalizability. However, all students mentioned some level of analysis in their responses. Diana mentioned *"I learned analyzing data is important. Conclusions are also important and sometimes difficult especially when you have different groups of people."* Cassandra (Class B) gained some experience with quantitative data analysis, saying: "*We learned how to put data into a spreadsheet and divide it up into answers, or you know, how to break it down so it is easier to read. You have to say why we did it, whom we were trying to teach, and what the outcome was. The whole process. I can say I learned a lot from this class."*

Anna (Class A) also mentioned data analysis and the importance of drawing conclusions, implications and recommendations for future research. While finalizing her response to her knowledge of research prompt, Anna discussed the importance of analysis: "*You're going to analyze your data and then set your conclusions and figure out what you've learned from your study. The last part is just figuring out like what implications that has for the future and what implications that has for the industry as a whole. The last thing you do is write some recommendations or some things that if someone else were to copy your study how would you change or improve it to make sure that research is continuing to move forward. Then you present it. I've learned a lot in this class."*

Bethany (Class A) included the need to expand upon research. "*You need to analyze your data and make conclusions of your data in comparison to the research that you've done. You want to analyze your whole research project…How does it relate to previous research? How to expand on the research?"*

Research positively impacts the field, but personal impacts may vary

In regards to the impact research has on the agricultural communications profession, Diana (Class B), says *"It obviously adds knowledge and perspective to different areas in agricultural communications. I think it's really important, and I think if it's done right it is very helpful and beneficial."* Anna (Class A) and Bethany (Class A) both mentioned research helps communication with the industry. Anna stated: "*Each study has implications of some sort whether that be… a more detailed crisis communications plan or understanding that local businesses have an easier time communicating with the media. Each study has an implication that can be used in the future."*

Bethany's response indicated research allows producers to better communicate, and said *"They [producers] may not be able to communicate…Agricultural scientists and producers don't know how to communicate to the rest of the world…there's a break in communication… [research] would break down barriers."*

Participants also constructed various meanings of research based on their research class and projects.

Although all students were required to take the research class, they did not have to participate in an individual research project. Anna and Bethany (Class A) both had an interest in a research topic prior to their class and had a positive experience with research. Anna plans on attending professional school in the near future, and when asked about how research impacts students, she stated *"It depends on what career field the student is going into. If they want to do any type of schooling or graduate school after, I feel like it's a really good experience."* Bethany also mentioned a possibility of graduate school afterwards, saying *"I feel like I want to do more research in the future. I would consider doing more research if I get my master's degree too"*. However, Cassandra and Diana (Class B) both had more neutral to negative viewpoints of conducting research and how it impacts their lives. Cassandra said *"I don't think [conducting URE's] impacts my viewpoints on research a lot",* while Diana said *"It made me want to never, ever do research again in my life."*

Theme 2: Students Desire Recognition for Research Projects that can be Achieved Through Presenting Their Work

One common theme that developed was the desire for receiving recognition for the hard work associated with a research project and how presenting posters can offer such recognition. Class A required the students to present their research in a form of a poster while Class B did not. Diana, who took Class B stated *"I think it makes you more comfortable. You can present something that you learned and you can learn from it, other people learn from it. It's important. I would have benefited from it."* Cassandra also took Class B, and mentioned "*undergraduate students don't have the platform to share their work, graduate students do. If you work hard enough on something you'd want to share it…You'd want others to see how hard you worked."*

Students who presented undergraduate research had similar attitudes. Anna (Class A) mentioned, *"Presenting my poster…has been a really cool experience... If you didn't present your research no one but you and your adviser would even know that it was completed."* Bethany gave further praise for the necessity of undergraduate presentations, stating *"At first I didn't because I didn't want to. I was timid. I think it's really important. It gives them experience, helps them understand the process and get confidence."*

In regards to a place or an event to present research, participants preferred a smaller, more intimate setting that is on campus for their first research presentations because they can be intimidating. Anna stated *"I think it would be cool to have a university-wide fair as well as a college-wide one…So I think it's cool to have one across the university and one for the college." "Definitely on campus",* Anna said. She continued, *"You're connecting to other researchers; so you're networking and connecting with professors. I really liked that events were really small and not too big of a deal. There wasn't a lot of people there, so it made me less nervous."* Cassandra (Class B) mentioned presenting research on campus in a casual, non-intimidating setting would be preferred, saying *"Maybe during Open House, you know, set up a table where they can present things. If it was, you know, in the union or something, where people were walking by and they can share it just kind of as people were walking through and were interested."*

Discussion

Participants who were allowed to select a topic of interest to research maintained more positive views toward research while students who were enrolled in the autonomous Class A appeared to have a deeper level of cognitive understanding and appreciation of the research process. Anna and Bethany's (Class A) narrative was consistent with the findings of Willis et al. (2013) stating that students who have deeply personal and independent research experiences foster a greater understanding of such methods and often attach a higher meaning to the process. Participants from Class A identified having some degree of positively-violated expectations which may have increased their cognitive acquisition and helped foster positive viewpoints toward research. Conversely, participants from class B mentioned the class was not what they were hoping for and therefore had negatively-violated expectations which could have led to decreased long-term understanding of research and less-than-favorable viewpoints toward the topic.

One of the biggest connections to past research comes from the confidence the students described they acquired through this experience, particularly in presenting research. This is congruent with the findings of Hunter et al. (2007), which stated student confidence is boosted when students take part in research that is relevant and beneficial to their field. Students of Class A were allowed to pursue research topics that held personal meaning and interest. This finding could also draw upon and add to Kolb and Kolb's (2005) model of the ELT which states learning includes an emotional and pedagogical component. Students who investigated topics that carried significant personal meaning or attachment would enter the learning experience along a positive emotional continuum, thereby preemptively associating the research experience through a positive lens. Anna and Bethany (Class A) drew upon their positive emotional experiences to construct a positive and relevant meaning toward research. Diana's lecture-based (Class B) experience contrasts both students of Class A, and her negative experience parallels Kolb and Kolb's (2005) findings that students with difficult experiences will construct negative associations toward that experience. Cassandra (Class B) remained neutral toward research, possibly because she had no personal experience to draw upon when constructing a meaning toward research.

Students expect teachers to provide clear, immediate, and thorough communication that more than equips

them to complete assignments (Houser, 2006; Koermer and Petelle, 1996). Since students expect close and constant supervision from instructors, the nature of large-scale research courses could potentially be leading to negatively-violated expectations from students embarking upon a complex and challenging topic like research. A potential recipe for negatively-violated expectations could instill a negative context or connotation toward research in the minds of students. This would align with the findings of Houser (2006) who stated instructors are negatively violating student expectations for URE's.

Implications and Recommendations

This study offers implications for faculty and staff that have research appointments and teach undergraduate research courses. Every effort should be made to offer clear expectations to the students and offer a positive research environment full of opportunities for dialogue. Faculty should be cautious on "over promising" and "under delivering". Students will accept setbacks and still have a positive experience, as demonstrated with Anna in this study, as long as students are prepared for potential setbacks. By facilitating a positive experience for undergraduates, faculty members will allow students to view learning and processing through a positive emotional continuum that will help construct positive associations toward research. Students' perceptions of experiences could have been influenced by the difference of Class A being taught in the College of Agriculture and being specific to the students' major. Therefore, students were likely more interested in the experience. This demonstrates a need for URE within students' majors or at the very minimum within their college.

Participants had a considerable time commitment to their research projects and desire opportunities to showcase their work beyond a paper submitted to their professor. Therefore, students should be encouraged to present their research in small-scale, on-campus events in order to gain recognition for their work. This conclusion supports the creation of undergraduate research showcases on college campuses. By receiving sought-after recognition, their experience will be further validated which could in turn move the students toward a positive emotional response to the experience. Such positive emotional shifts could also validate the research process as a whole and thereby allow the student to construct positive viewpoints toward the research process. This research supports offering experiential learning experiences to agricultural communications students through URE's.

This research offers additional questions regarding how the EVT influences the experiences and perceptions of students participating in undergraduate research courses. Although Houser (2006) stated experiences are more important than expectations, how experiences relate to student expectations is a major area of focus for the EVT. Additionally, student experiences will ultimately be judged by the expectations they have for the course content and their interactions with the professor. Therefore, it is recommended that instructors adopt Houser's (2006) recommendation of using the EVT to evaluate their teaching and communication styles and determine how those efforts align with the desires and needs of students. Furthermore, instructors should make every effort to clearly define the scope of the class they teach, what it will entail, and how students will be evaluated. Since students evaluate their instructor in regards to how they communicate and the level of help they will give, instructors should make every effort to establish clear expectations for how they plan to communicate with students and offer help on class assignments, projects, or exams.

Further research should be conducted to identify how the emotional experience of undergraduate researchers defines the research process and the relevancy of such research to the individual student and their career aspirations. Additionally, research should be conducted to identify how undergraduate research classes can be structured to maximize the learning experience along both emotional and pedagogical continuums based upon Kolb's model (Figure 1). Researchers recommend following this qualitative research with a large-scale, national, quantitative study focusing on how the ELT shapes students' experiences, attitudes and viewpoints toward URE's.

Literature Cited

Burgoon, J.K. 1978. A communication model of personal space violations: Explication and an initial test. Human Communication Research 4 (2): 130–131. DOI:10.1111/j.1468-2958.1978.tb00603.x.

Creswell, J.W. 2014. Research design (4th ed.). Thousand Oaks, CA: SAGE Publications, Inc.

CUR At-a-Glance | Fact Sheet | Council on Undergraduate Research. 2011. September 17, 2014. from http://www.cur.org/about_cur/fact_sheet/

Dahl, W.J., A.L Ford and R.E. Turner. 2013. Perspectives on the agricultural and life sciences undergraduate research experience at the University of Florida. NACTA Journal 57(3): 32-37.

Glaser, B. 1965. The constant comparative method of qualitative analysis. Social Problems 12(4): 436-445.

Howitt, S., A. Wilson, K. Wilson and P. Roberts. 2010. Please remember we are not all brilliant: Undergraduates' experiences of an elite, research-intensive degree at a research-intensive university. Higher Education Research and Development 29(4): 405-420.

Hunter, A.B., S.L. Laursen and E. Seymour. 2007. Becoming a scientist: The role of undergraduate research in students' cognitive, personal, and professional development. Science Education 91(1): 36-74.

Kardash, C.M. 2000. Evaluation of undergraduate research experience: Perceptions of undergraduate interns and their faculty mentors. Journal of Educational Psychology 92(1): 191-201.

Koermer, C.D. and J.L. Petelle. 1991. Expectancy violation and student rating of instruction. Communication Quarterly 39(4): 341-350.

Kolb, A.Y. and D.A. Kolb. 2005. Learning styles and learning spaces: Enhancing experiential learning in higher education. Academy of Management Learning and Education 4(2): 193-212.

Kolb, D.A., R.E. Boyatzis and C. Mainemelis. 2001. Experiential learning theory: Previous research and new directions. Perspectives on thinking, learning, and cognitive styles 1: 227-247.

Lei, S.A. and N.K. Chuang. 2009. Undergraduate research assistantship: A comparison of benefits and costs from faculty and students' perspectives. Education 130(2): 232-240.

Le Poire, B.A. and J.K. Burgoon. 1996. Usefulness of differentiating arousal responses within communication theories: Orienting responses or defensive arousal within nonverbal theories of expectancy violation. Communication Monographs 63(3): 208-230.

Lopatto, D. 2007. Undergraduate research experiences support science career decisions and active learning. CBE-Life Sciences Education 6(4): 297-306.

Nadelson, L., L. Walters and J. Waterman. 2010. Course-integrated undergraduate research experiences structured at different levels of inquiry. Journal of STEM Education: Innovations and Research 11(2):27-44.

National Science Foundation. 2003. Enhancing research in the chemical sciences at predominantly undergraduate institutions. Report from the Undergraduate Research Summit. Lewiston, ME. Bates College. http://www.cur.org/assets/1/7/Summit_Report.pdf.

Rauckhorst, W.H., J.A. Czaja and M. Baxter Magolda. 2001. Measuring the impact of the undergraduate research experience on student intellectual development. Journal of Professional Issues in Engineering Education and Practice 123(3): 98-102.

Russell, S.H., M.P. Hancock and J. McCullough. 2007. Benefits of undergraduate research experiences. Science(Washington) 316(5824): 548-549.

Seymour, E., A.B. Hunter, S.L. Laursen and T. DeAntoni. 2004. Establishing the benefits of research experiences for undergraduates in the sciences: First findings from a three-year study. Science Education 88(4): 493-534.

Williams, C.L. and E.J. Heikes. 1993. The importance of researcher's gender in the in-depth interview: Evidence from two case studies of male nurses. Gender and Society 7(2): 280-291.

Willis, D.A., P.S. Krueger and A. Kendrick. 2013. The influence of a research experiences for undergraduates program on student perceptions and desire to attend graduate school. Journal of STEM Education: Innovations and Research 14(2): 21-28.

Yeo, A., R. Legard, J. Keegan, K. Ward, C. McNaughton Nicholls and J. Lewis. 2014. In-depth interviews. Qualitative research practices (13th ed., pp. 177–210). London: Sage.