© *Journal of Higher Education Outreach and Engagement*, Volume 19, Number 4, p. 63, (2015)
 ISSN 1534-6104, eISSN 2164-8212

Students' Emotions in Academic Service-Learning

Elise Noyes, Alexa Darby, and Christopher Leupold

Abstract

Research has demonstrated the importance of emotions in learning, and academic service-learning (AS-L) has become an increasingly popular pedagogy. However, few studies have investigated emotional experiences specific to AS-L. The purpose of this mixed-methods study was to examine students' emotions related to their AS-L class. Results from the quantitative component revealed that students have emotional experiences both on site and in class that are specific to AS-L. The qualitative interview results supported the quantitative finding that excitement/enjoyment is the most frequently experienced emotion and that the majority of emotional experiences occurred on site. The findings demonstrate the importance of emotions in facilitating the intellectual and personal development of students in AS-L and emphasize the need for faculty to be mindful and intentional in helping students navigate these experiences and integrate them with the course content.

Introduction

Cognitive research has demonstrated the interconnectedness of emotions and learning (*Felten, Gilchrist, & Darby, 2006)*. Contemporary scholarship on academic service-learning (AS-L) has found increased educational benefits and improved achievement outcomes from the structured experiential pedagogy of AS-L compared to that of traditional classroom settings (*Eyler, Giles, & Braxton, 1997)*. Few researchers, however, have explored how emotions affect the academic outcomes and cognitive processes associated with AS-L. This gap in research limits our ability to maximize the AS-L experience for students' personal and intellectual growth. The present study explored students' emotional experiences in their AS-L courses, with the goal of improving the effectiveness of pedagogical practices and academic outcomes associated with AS-L.

Early research in AS-L focused primarily on its philosophical origins and orientation, including its focus on reflective practices and its emphasis on achieving specific academic outcomes (*Astin, Vogelgesang, Ikeda, & Yee, 2000; Eyler, 2002; Saltmarsh, 1996)*. More recently, research on academic achievement in AS-L has begun to

investigate the relationship between emotions and achievement (*Felten et al., 2006; Pekrun, 2006)*. Previous findings linking AS-L, emotions, and achievement provide a frame of reference through which to view the present study.

Origins, Practices, and Outcomes in AS-L

Dewey's (*1938)* pragmatic philosophy of experiential education laid the original groundwork for the development of AS-L. Using Dewey's ideas, liberal arts education created its own philosophy of community service-learning based on a "conception of education that integrates thought and action, reason and emotion, mind and body, leisure and work, education and life, and connects individuals to their community and natural contexts" *(Saltmarsh, 1996, p. 14)*. Within this framework, AS-L practices have been shaped by five of Dewey's ideas: linking education to experience, democratic community, social service, reflective inquiry, and education for social transformation *(Saltmarsh, 1996)*. Present-day AS-L can be thought of as an integration of curriculum content with ongoing community-based service *(Rosing, Reed, Ferrari, & Bothne, 2010)*. Stated another way, students apply the theories and concepts they learn in the classroom to meet or address a community need, which can then facilitate a deeper understanding and application of course material.

The service-learning literature cites reflection as an integral element in connecting the academic and service experiences *(Felten et al., 2006; Saltmarsh, 1996)*. Eyler *(2002)* found that the amount and type of reflection students engaged in affected the benefits they received from AS-L. These benefits included progressing to a post–formal reasoning stage of development and resolving the conflict between new experiences and old assumptions by consciously restructuring their schemas. To achieve such outcomes, however, reflection activities must involve "the intentional consideration of experience in light of particular learning objectives" *(Eyler, 2002, p. 518)* and must be closely integrated with course content *(Eyler, 2002; Hatcher, Bringle, & Muthiah, 2004)*.

Compared to students engaged in traditional courses or community service alone, students in undergraduate AS-L courses obtain significant benefits related to their attitudes, cognitive and writing skills, values, and understanding of social issues *(Astin et al., 2000; Eyler et al., 1997; Osborne, Hammerich, & Hensley, 1998)*. Preliminary findings on the long-term benefits of AS-L are also promising, with students in activity-based courses obtaining

higher grades than those in traditional sections of the same course *(Strage, 2004)*.

Emotions, Learning, and Achievement

With the intensive focus on academic outcomes nationwide, some researchers have sought to identify "achievement emotions" that are "tied directly to achievement activities or achievement outcomes" *(Pekrun, 2006, p. 317)*. Such emotions are mediated by social and cultural contexts, personality factors, and achievement goals. Achievement goals may be either mastery-oriented, intrinsic goals focused on learning activities or performance-based, extrinsic goals focused on outcomes. Pekrun *(2006)* described findings indicating the impact of both activity-related emotions such as enjoyment, frustration, and boredom and outcome-related emotions, both prospective and retrospective, including joy, hope, pride, anxiety, hopelessness, shame, and anger. Outcome emotions may be activating, encouraging learning and effort as in the case of hope, or deactivating like boredom; emotions may also have a positive or negative valence, indicating whether the individual anticipates success or failure. For example, relief is a positive deactivating emotion since it occurs when no further effort is required to succeed, whereas anxiety is a negative activating emotion acting as an attempt to prevent failure.

Pekrun's *(2006)* control-value theory of achievement emotions builds on this foundation. Pekrun posited that the perceived control over and value of an activity are "central to the arousal of achievement emotions" *(p. 315)* and that emotions play a functional role in the learning process. He also noted that the reciprocal relationship between emotions and achievement can create either positive or negative feedback loops in the environment-appraisal-emotion-achievement outcome cycle. Previous studies have supported his theory, as tested by his Achievement Emotions Questionnaire (AEQ). Initial feelings of hopefulness or helplessness influenced students' achievement of both mastery and performance-based goals, which subsequently predicted discrete emotions such as enjoyment or anxiety, which in turn predicted academic achievement *(Daniels et al., 2009; Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2010)*.

The Value of Research on Emotions in AS-L

AS-L is becoming increasingly popular across academic disciplines *(National Survey of Student Engagement, 2010)*. It thus should

be researched continuously to evaluate its effectiveness and find ways to improve it. Researchers have focused specifically on academic outcomes and reflection in AS-L, yet they have done little to integrate their findings with emerging research about the role of emotions in cognitive processes and learning, or with understandings of students' perceived control over and valuing of learning activities *(Eyler, 2002; Felten et al., 2006; Pekrun, 1992)*. By investigating the interrelatedness of emotions, learning, and achievement, the present study aimed to fulfill Dewey's goal of integrating emotions, community experience, and education to foster social change through personal transformation *(Dewey, 1938; Saltmarsh, 1996)*.

Hypotheses

Because of the salience of the control and value issues presented at a service site *(Pekrun, 2006)*, it was hypothesized that participants would have more emotional experiences on service sites than in the other domains. Due to the exploratory nature of this study and its introduction of the service domain to the study of emotions in learning settings, the other predictions were more general in nature. In summary, it was hypothesized that the overall patterns found in Pekrun et al.'s *(2010)* study would be replicated here for the newly added domain (service site). Based on Pekrun's *(2006)* control-value theory of emotions, the present study used the AEQ *(Pekrun et al., 2010)* to measure emotions. We predicted that positive correlations would exist among various positive emotions (enjoyment, hope, pride) within and across domains (in class, assignments, tests, and service). Similarly, we predicted positive correlations would exist among various negative emotions (anger, anxiety, shame, hopelessness, boredom, relief) within and across domains, and negative correlations between positive and negative emotions within and across domains.

For the interviews, no predictions were made regarding specific emotions. However, based on the existing literature and the rewarding yet stressful nature of AS-L experiences, we predicted that participants would report a broad range of the positive and negative emotions that Pekrun et al. *(2010)* found and that most emotional experiences would occur on site.

Methods

Participants

Participants included 212 (32% male, 68% female) undergraduate students enrolled in 11 different AS-L courses during the Spring 2012 semester at a small, private liberal arts college in the southeastern United States. The majority were first- or second-year students (36% and 41%, respectively); only 16% were third-year and 7% fourth-year. Most participants (63%) had no prior AS-L experience, 26% had taken one or two AS-L classes, 4% had taken three or four AS-L classes, and 7% had taken five or more AS-L classes. Sixty-three percent (63%) anticipated receiving an A in their current AS-L course, 26% anticipated a B, 6% anticipated a C, and one participant anticipated an F. Three questionnaires were excluded from analysis because participants did not properly complete one section; missing values were handled by pair-wise deletion.

Classes were selected using convenience sampling within multiple disciplines (sociology, psychology, human services, engineering, public administration, communications, and philosophy) that incorporated either direct (n = 9) or project-based (n = 2) service. Examples include a philosophy class about human–animal relationships serving at a local animal rescue; an engineering class educating elementary school children about engineering concepts, a sociology class tutoring struggling students from local schools, and a communications class assisting with projects for a local women's assistance organization. Instructors were contacted using the AS-L electronic mailing list, allowing them to elect to participate. The hours of service required in these courses varied: 44% of participants were required to complete 10-20 service hours, 38% needed 21-30 hours, 14% needed 31-40 hours, and 5% needed 41 or more hours.

Thirteen interview participants were recruited from an announcement made in the AS-L courses in which participants completed the questionnaire; interview participants received $10 Target gift cards as compensation for their time. Two of the interview participants were enrolled in sociology AS-L classes, three in psychology, one in both a sociology and a psychology course, three in communications, one in human services and communications, two in philosophy, and one in engineering.

Measures and Procedure

This study used mixed methods of data collection to provide both an overview of relevant emotions (quantitative) and descriptive depth of emotional experiences (qualitative). The quantitative measure was based on Pekrun et al.'s *(2010)* AEQ. The original AEQ consists of three sections, each corresponding to an academic domain (in class, working on assignments, during a test). It contains Likert-scale items (1-5) relating to the identified achievement emotions: enjoyment, hope, pride, relief, anger, anxiety, shame, hopelessness, and boredom. Items include such statements as "My hopes that I will be successful motivate me to invest a lot of effort." In their analysis of the entire scale, researchers demonstrated its reliability and construct validity for distinct dimensions (domains and emotions) through factor analysis for all subscales and its external validity related to students' control-value appraisals, learning, and academic outcomes *(Pekrun et al., 2010)*.

For the present study, we obtained permission to use the scale and develop new items for a fourth academic domain, the AS-L site, to investigate emotional experiences unique to this domain (see Table 1 for descriptive statistics). The new items included statements such as "I enjoy our class discussions about our experiences at the service-learning site" and "I am frustrated when I go to our service-learning site and don't like what we are doing." Researchers piloted the new items with a group of AS-L students during their class time and ran a reliability test afterward, finding a Cronbach's alpha of .71. Participants completed the questionnaires midway through the semester, either in class or in individual sessions with one of the researchers if they were unable to complete it during class time. Questionnaires were completed voluntarily and took participants from 30 to 75 minutes; no compensation was given.

The qualitative dimension of the research included conducting open-ended interviews with AS-L students who completed the AEQ to further explore their emotional and academic experiences related to AS-L. The interview questions expanded on the AEQ items, asking students to describe an emotional experience related to their AS-L class. Participants were interviewed individually by one of the researchers for 30 to 60 minutes and received a $10 Target gift card as compensation. Data were interpreted in the context of existing literature on AS-L, academic achievement, and emotions related to Pekrun's *(2006)* control-value theory of emotions. Researchers ran multiple statistical tests in the Statistical Package for the Social Sciences (SPSS)—including descriptive statistics, *t*-tests, ANOVAs, reliability, and correlations to deter-

mine internal validity—on the questionnaire data and thematically coded the transcripts using an inductive approach *(Boeije, 2010)*.

Table 1. ***AEQ Scale Statistics (Raw Score)***

	No. of Items	Possible Range	Observed Range	*M*	*SD*	α
Service-related emotions						
Enjoyment	4	4-20	4-20	13.80	3.27	.80
Hope	3	3-15	5-15	11.47	1.97	.58
Pride	3	3-15	4-15	11.39	2.08	.60
Anger	4	4-20	4-17	10.02	2.94	.59
Anxiety	4	4-20	4-18	0.73	2.62	.50
Shame	3	3-15	3-12	6.63	1.94	.35
Hopelessness	3	3-15	4-18	5.68	2.35	.71
Boredom	3	3-15	3-14	5.68	2.35	.71
Class-related emotions						
Enjoyment	10	10-50	12-50	30.22	8.09	.90
Hope	8	8-40	11-40	29.25	5.36	.84
Pride	9	9-45	11-45	31.04	5.97	.85
Anger	9	9-45	9-45	16.60	7.25	.91
Anxiety	12	12-60	12-49	23.63	7.09	.83
Shame	11	11-55	11-46	21.38	7.55	.89
Hopelessness	10	10-50	10-42	16.81	6.23	.89
Boredom	11	11-55	11-54	31.23	11.24	.94
Learning-related emotions						
Enjoyment	10	10-50	9-47	20.07	6.97	.84
Hope	6	6-30	8-30	20.47	4.88	.88
Pride	6	6-30	4-30	21.01	5.11	.88
Anger	9	9-45	9-45	20.18	7.82	.90
Anxiety	11	11-55	11-48	26.72	8.93	.88
Shame	11	11-55	11-52	24.27	8.34	.88
Hopelessness	11	11-55	10-43	18.65	7.15	.91
Boredom	11	11-55	10-49	27.16	9.20	.91
Test-related emotions						
Enjoyment	10	10-50	3-47	27.58	6.98	.83
Hope	8	8-40	2-40	25.67	6.11	.85
Pride	10	10-50	9-49	31.22	7.66	.89
Relief	6	6-30	6-30	19.04	5.56	.86
Anger	10	10-50	9-46	21.50	7.10	.85
Anxiety	12	12-60	2-55	31.74	8.38	.83

Shame	10	10-50	10-50	21.44	7.11	.83
Hopelessness	11	11-55	11-47	20.70	7.70	.91

Quantitative Results

Preliminary analyses were conducted to explore potential significant gender and/or class rank differences for total emotional experiences in each domain. None were found, and data were collapsed for further analyses and hypothesis testing.

The raw score scale statistics for each academic domain and reliabilities for the AEQ measures are reported in Table 1. The Cronbach's alphas for all of the original AEQ scales were strong and comparable to or higher than Pekrun et al.'s *(2010)*. The newly developed service-related emotions scale exhibited good reliability for the emotions of enjoyment and boredom (α= .80 and .71 respectively). Although reliabilities for the other emotions were lower (α= .35 to .60), the scales were retained given the exploratory nature of the study and its specific focus on AS-L.

Hypothesis Testing

Total emotional experiences by domain. Because the number of items for the AEQ subscales range from three to 12 (see Table 2), comparison of domain mean differences first required establishing a common metric for the scales. This was accomplished by multiplying each scale's raw score by 12 (the greatest number of items of any scale), then dividing it by the scale's original number of items, thereby transforming all scales to reflect a 12-item scale. The total domain-adjusted means and standard deviations for emotional experiences were as follows: service (on site), M = 284.50, SD = 27.81; class, M = 245.16, SD = 25.50; test, M = 250.21, SD = 39.80; and learning, M = 252.11, SD = 34.60.

Table 2. ***Correlations of AEQ Emotions Within Settings***

	Enjoyment	Hope	Pride	Anger	Anxiety	Shame	Hopelessness	Boredom
Class-related								
Enjoyment	—	.70*	.68*	-.61*	-.33*	-.17*	-.46*	-.77**
Hope		—	.77*	-.60	-.58*	-.42*	-.66*	-.50*
Pride			—	-.45*	-.45*	-.31*	-.52*	-.42*
Anger				—	.48*	.30*	.68*	.71**
Anxiety					—	.76**	.78**	.38*
Shame						—	.55*	.23*
Hopelessness							—	.51*
Boredom								—
Learning-related								
Enjoyment	—	.65*	.73**	-.27*	-.08	-.09	-.26*	-.38*
Hope		—	.72**	-.47*	-.47*	-.47*	-.60*	-.49*
Pride			—	-.30*	-.17*	-.26*	-.47*	-.36*
Anger				—	.65*	.56*	.69*	.76*
Anxiety					—	.78**	.70**	.53*
Shame						—	.77**	.47*
Hopelessness							—	.58*
Boredom								—
Test-related[b]								
Enjoyment	—	.75**	.78**	.44*	-.03	-.15	-.21	
Hope		—	.79*	.43*	-.30	-.43	-.50	
Pride			—	.59*	-.05	-.25*	-.39*	
Relief [a]				—	.25*	.04	-.08	
Anxiety					—	.70**	.63*	
Shame						—	.82**	
Hopelessness							—	
Service-related								
Enjoyment	—	.63*	.67*	-.44*	-.22*	-.20*	-.16*	-.62*
Hope		—	.70**	-.26*	-.35*	-.25*	-.19*	-.49*
Pride			—	-.28*	-.29*	-.25*	-.18*	-.58*
Anger				—	.41*	38*	.34*	.46*
Anxiety					—	.52*	.51*	.31*
Shame						—	.47*	.34*
Hopelessness							—	.23*
Boredom								—

Note. [a] In the case of test-related emotions, anger is replaced by relief. [b] Boredom was not included as a test-related emotion.

* $p < .05$. ** $r > .70$.

To test the hypothesis that most emotional experiences would occur on site in the service setting, a within-subjects repeated measures ANOVA was performed. Using a Greenhouse-Geisser correction, a statistically significant difference in emotional experiences among domain means was found ($F[2.36, 473.48] = 101.74$, $p < .01$, $\eta^2 = .34$). To identify where the specific mean differences existed, pairwise comparisons using a Bonferroni adjustment were performed. As hypothesized, students reported significantly more emotional experiences (at the $p < .01$ level) while in the service setting rather than when in class, during tests, or while working on assignments. In addition, these follow-up comparisons found that more emotional experiences were reported while working on assignments than in class ($p < .01$).

Domain-specific emotions. To ascertain whether the same relative patterns of emotions were experienced across domains, the means of emotions within each domain were weighted to adjust for the scales' different numbers of items. Raw means (see Table 2) were multiplied by the maximum number of a scale's items from that particular domain (i.e., 4 for service, 12 for class, etc.) and divided by that scale's original number of items. This equalization procedure enabled comparison within domains on a common metric. In examining the rank ordering of emotions within each domain, the patterns were fairly similar for class, learning, and test. In general, the most frequently experienced emotions in each domain were hope and pride, and to a lesser extent, enjoyment. Within each of these three domains, hopelessness, anger, and shame were the emotions least experienced.

A major focus of this study was to explore emotions experienced in service settings; thus, the pattern of emotions experienced in each domain was examined and compared to those of the others. Pride and hope were the most frequently experienced emotions in service; however, hopelessness was also among the most often cited. This contrasts sharply with findings from the other domains, in which hopelessness was experienced the absolute least. Service also resembled the other domains in that shame and anger were among the least frequently experienced emotions. Although the overall pattern for service was similar to that found in other domains, another notable finding was that boredom was the least frequently experienced emotion in service, whereas it was experienced far more frequently in the other domains.

Emotion correlations within and between domains. To test the prediction that directional relationships within and between settings would be comparable to those found in Pekrun et al.'s

(2010) original study, Pearson's two-tailed correlations were conducted for each of the emotions scales within each academic domain. Table 2 shows correlations between emotions within academic settings, and Table 3 shows these correlations across settings. As hypothesized, positive emotions were generally positively correlated with one another, and negative emotions were generally positively correlated with one another. The findings for each domain, however, did not carry over to the others to the extent they have in previous studies using the AEQ. This suggests that AS-L class experiences have more domain-specific emotions than traditional courses *(Lichtenfeld, Pekrun, Stupnisky, Reiss, & Murayama, 2012; Pekrun et al., 2010)*. Consequently, the original hypothesis was not fully supported.

Table 3. ***Correlations of AEQ Emotions Across Settings***

	Class-Related Emotions							
	Enjoyment	Hope	Pride	Anger	Anxiety	Shame	Hopelessness	Boredom
Learning-related								
Enjoyment	.63*	.56*	.65*	-.24*	-.18*	-.04	-.24*	-.38*
Hope	.46*	.66*	.69*	-.31*	-.49*	-.38*	-.45*	-.30*
Pride	.50*	.67*	.77**	-.31*	-.32*	-.19*	-.42*	-.31*
Anger	-.42*	-.52*	-.36*	.64*	.59*	.46*	.63*	.56*
Anxiety	-.20*	-.39*	-.27*	.39*	.63*	.56*	.44*	.30*
Shame	-.19*	-.46*	-.33*	.37*	.70**	.70**	.53*	.29*
Hopelessness	-.39*	-.67*	-.54*	.57*	.73**	.60*	.76**	.41*
Boredom	-.65*	-.55*	-.45*	.67*	.52*	.37*	.57*	.80**
Test-related								
Enjoyment	.28*	.22*	.34*	-.12	-.20*	-.10	-.14*	-.20*
Hope	.26*	.32*	.40*	-.16*	-.35*	-.30*	-.26*	-.17*
Pride	.33*	.34*	.45*	-.24	-.32*	-.27*	-.27*	-.24*
Relief [a]	.16*	.09	.21*	.05	.06	.06	.00	-.03
Anxiety	.01	-.15*	-.08	.12	.32*	.31*	.18*	.05
Shame	-.06	-.24*	-.10	.30*	.45*	.43*	.38*	.12
Hopelessness [b]	-.21*	-.40*	-.31*	.38*	.49*	.44*	.51*	.23*
Service-related								
Enjoyment	.70**	.58*	.48*	-.58*	-.27*	-.15*	-.42*	-.55*
Hope	.58*	.64*	.57*	-.46*	-.39*	-.25*	-.52*	-.38*
Pride	.57*	.63*	.63*	-.45*	-.40*	-.34*	-.48*	-.39*
Anger	-.32*	-.33*	-.20*	.49*	.35*	.23*	.36*	.41*
Anxiety	-.21*	-.38*	-.31*	.30*	.58*	.43*	.43*	.20*

Shame	-.09	-.25*	-.19*	.22*	.48*	.39*	.39*	.09
Hopelessness	-.08	-.15*	-.11	.17*	.30*	.23*	.23*	.06
Boredom	-.51*	-.52*	-.42*	.55*	.39*	.25*	.56*	.51*

Learning-Related Emotions

	Enjoyment	Hope	Pride	Anger	Anxiety	Shame	Hopelessness	Boredom
Test-related								
Enjoyment	.41*	.41*	.34*	-.23*	-.17*	-.15*	-.20*	-.29*
Hope	.31*	.48*	.41*	-.29*	-.36*	-.37*	-.39*	-.29*
Pride	.35*	.41*	.45*	-.25*	-.25*	-.26*	-.36*	-.32*
Relief [a]	.22*	.10	.21*	.10	.16*	.10	-.04	.02
Anxiety	-.01	-.26*	-.06	.25*	.49*	.44*	.33*	.10
Shame	.04	-.24*	-.10	.39*	.46*	.58*	.50*	.23*
Hopelessness	-.08	-.32*	-.27*	.42*	.40*	.53*	.60*	.28*
Service-related								
Enjoyment	.44*	.29*	.25*	-.41*	-.15*	-.14*	-.32*	-.45*
Hope	.44*	.45*	.47*	-.34*	-.19*	-.20*	-.41*	-.40*
Pride	.43*	.44*	.51*	-.35*	-.23*	-.26*	-.41*	-.42*
Anger	-.08	-.22*	-.19*	.44*	.34*	.42*	.41*	.43*
Anxiety	-.12	-.34*	-/20*	.37*	.38*	.45*	.49*	.33*
Shame	-.02	-.21*	-.11	.27*	.39*	.40*	.43*	.25*
Hopelessness	-.04	-.29*	-.10	.28*	.27*	.27*	.28*	.17*
Boredom	-.31*	-.27*	-.18*	.44*	.19*	.23*	.41*	.45*

Test-Related Emotions

	Enjoyment	Hope	Pride	Relief	Anxiety	Shame	Hopelessness
Service-related							
Enjoyment	.18*	.19*	.28*	.16*	.02	-.10*	-.22*
Hope	.18*	.28*	.30*	.15*	-.06	-.12	-.26*
Pride	.17*	.25*	.35*	.15*	-.07*	-.11	-.24*
Anger	-.18*	-.26*	-.24*	.00	.18*	.32*	.30*
Anxiety	-.17*	-.19*	-.25*	.11	.27*	.39*	.37*
Shame	-04	-.16*	-.15*	.14*	.27*	.39*	.33*
Hopelessness	-.10	-.17*	-.16*	.05	.25*	.35*	.28*
Boredom	-.11	-.14*	-.19*	-.18	.06	.19*	.28*

Note. [a] In the case of test-related emotions, anger is replaced by relief. [b] Boredom was not included as a test-related emotion.
*$p < .05$. ** $r > .70$.

Within settings, class-related enjoyment was strongly negatively correlated with class-related boredom ($r = –.77$, $p < .05$), suggesting that experiencing the former positive emotion mitigates the experience of the latter deactivating emotion *(Pekrun, 2006)*. Class-related hope and pride were significantly strongly positively correlated at the $p < .05$ level ($r = .77$), as were class-related boredom

and anger (r = .71), anxiety and shame (r = .76), and anxiety and hopelessness (r = .78). These findings support Pekrun's *(2006)* control-value theory of achievement emotions, in which positive emotions create positive feedback loops for the environment-appraisal-emotion-achievement outcome cycle.

Although the causality of the present findings cannot be determined given the nature of the study, the results of the relationships among positive and negative emotions support Pekrun's *(2006)* theory. Strong positive correlations were also found between learning-related pride and hope (r = .72) and enjoyment (r = .73), learning-related shame and anxiety (r = .78), learning-related hopelessness and shame (r = .77), learning-related boredom and anger (r = .76), test-related hope and enjoyment (r = .75), test-related pride and enjoyment (r = .79) and hope (r = .79), test-related shame and anxiety (r = .70), and service-related hope and pride (r = .70). All of these relationships were statistically significant at the $p < .05$ level.

Additional significant findings emerged to further support this line of thought. Across settings, class-related pride and learning-related pride (r = .77), class-related hopelessness and learning-related hopelessness (r = .76), and class-related boredom and learning-related boredom (r = .80) were each strongly positively correlated, demonstrating how those particular emotions seem to be interconnected with class and assignment-based situations. Class-related anxiety was strongly positively correlated with learning-related hopelessness (r = .73) and learning-related shame (r = .70), which follows Pekrun's *(2006)* control-value theory of achievement emotions. Because anxiety, which can be an activating or deactivating emotion depending on the situation, occurs in response to circumstances of less perceived control, it can evoke feelings of shame or hopelessness if students perceive failure. In this instance, for students experiencing anxiety, this responsive anxiety may have carried over to their work on their assignments.

Following the same logic, class- and learning-related shame were strongly positively correlated (r = .80), as were class- and service-related enjoyment (r = .70). This suggests that positive class and service experiences reciprocally influence one another and may perpetuate positive feedback loops in the environment-appraisal-emotion-achievement outcome cycle *(Pekrun, 2006)*. No significant correlations were found between settings other than class and learning situations and class and service experiences.

Qualitative Results

Researchers conducted data analysis by transcribing and coding the interviews to identify recurrent themes using the inductive approach *(Boeije, 2010)*. Two researchers independently coded each transcript, with interrater reliability of 89.5% for emotions and 100% for situations. All 13 participants identified a variety of emotions related to their AS-L experiences, supporting the original hypothesis. Additionally, results showed that a majority of the emotional experiences occurred on site (73%), with fewer related to the general experience (10%), class experiences (10%), or working on assignments (7%). Emotional events on site often occurred when something "negative" turned into something "positive" or when an event offered a lesson to be learned. The emotion most often related to class was boredom. If students enjoyed their service, they often enjoyed working on assignments more but didn't necessarily want to go to class more.

Service experiences were sometimes enhanced or influenced by the course content, but the level of integration and connection of the service and course content mediated this effect. Only in some cases did the service help students with the course content (e.g., in the philosophy and engineering courses and in one psychology course). The psychology student noted that when assignments "link back to the site… it helps me learn the information in class more by going to the site and relating the material back."

When the service was less integrated with the class, students often reported feeling a sense of disconnection between the two or reported that their classroom knowledge helped their service, as in the communications class, but not vice versa. Doris, a communications student working at a women's assistance center, suggested incorporating insights from the site to the classroom and connecting them to course material. She reflected, "I think maybe showing a little more connection between [the class] and our service-learning but then also with other areas that we would be going into with PR [public relations]."

Many students expressed a desire for more opportunities to share and reflect on the personal dimensions of their experiences in class with their peers and professors; in addition, many mentioned talking with their parents about these experiences. One sociology student working in the schools noted:

> I know a lot of people have had some really awesome experiences. And some have had some struggles with different things, and I think talking about it is good

> because, like, I'm sure I've had some similar experiences to someone else at another organization. So if we can share like our stories and how we've dealt with the different situations, then I think that's really beneficial to get, like, I don't know, the advice of your peers.

Overall, students described their service experience as very worthwhile. As one student reflected, "It definitely makes you realize that what we're learning in class is very applicable in the real world and that it makes a difference for people… not only the organizations, but the people that these organizations are working with."

Excitement/Joy

All participants cited emotions of excitement/joy in their AS-L experiences. Excitement/joy occurred most frequently on site (72%), followed by in class (13%), in general (10%), and while working on assignments (4%). Responses reflected Pekrun's *(2006)* control-value theory of achievement emotions, in which students' engagement in positively-valued activities where they feel in control leads to activity-based feelings of enjoyment.

Through Matt's engineering class, he helped elementary school students participate in after-school engineering activities. One afternoon the children used paper to build tables that had to hold three textbooks. When asked about the experience, Matt reflected:

> I guess it'd be just kind of excited that they succeeded. My group was a group of only fourth graders, and there were a lot of fifth graders in the engineering program. And to see that they kind of beat all these fifth graders and they knew it, it was kind of like it was good to see how excited they were about that. So I guess I'd say excited and achieved, I don't know… successful.

Matt's ability to positively affect his students' experience made him feel positive as well, illustrating the manifestation of enjoyment from student-perceived positively valued and controllable activities *(Pekrun, 2006)*. Matt's emotional response highlights how meaningful students typically find their on-site experiences and how enjoyment can promote engagement.

Anger/Frustration

Anger/frustration was reported in 77% of the interviews (64% on site, 24% in class, 12% in general, and 0% while working on

assignments). In both positively and negatively appraised AS-L situations, students reported activity-based feelings of anger and frustration, which Pekrun's *(2006)* control-value theory of achievement emotions would ascribe to students' perceiving that they had little control.

On site, anger and frustration usually occurred in response to a larger social issue the student was confronting. Mary, who tutored students in a high school dropout prevention program, felt angry after learning that a student's friend was being deported: "It really frustrates me that a 17-year-old kid who's probably been here for a very long time is getting sent back to Mexico. It just—oh my gosh. Oh, it makes me pretty mad!" Mary thought not only about the individual who was affected but also about the larger societal issue surrounding the situation. She saw the situation in a negative light and attributed control to forces outside herself, resulting in her retrospective and outcome-based anger *(Pekrun, 2006)*.

Sad/Upset

Sad/upset feelings were identified by 77% of the students (97% on site, 3% in general, 0% in class and while working on assignments) and were most often related to the broader social problems surrounding the service site's mission. Feelings of sadness or being upset were not included in Pekrun's *(2006)* control-value theory of emotions, as that original list of emotions was generated purely on the basis of academic settings *(Pekrun et al., 2010)*. The presence of sadness in the current study suggests that this emotional category may be unique to AS-L. Logically, feelings of being sad or upset may occur more frequently in AS-L than in traditional courses given the nature of the course content and application.

Doris experienced sadness/being upset as a result of understanding the social problems her organization addressed. She recalled that on her first day, the domestic violence center director briefed them on what to expect:

> [She] gave us kind of like the background on it and told us some stories that are just really heartbreaking because it's mostly kids who get sexually abused, some women, more likely kids, though, because older people don't tend to report it as much. And it's just heartbreaking some of the stuff they tell you… it's kind of tough.

Doris's sadness stemmed from recognizing the abuse these clients had experienced, an emotion that fostered empathy and

character building *(Pekrun, 2006)*. Such feelings of sadness or being upset emerged from a growing awareness of social problems, from an inability or uncertainty about how to handle difficult situations, or even from seeing their service experience come to an end. These "negative" emotions were complex in that they did not necessarily pertain to negative outcomes directly related to the student *(Pekrun, 2006)*. Students with such negative retrospective emotional experiences were nevertheless able to construct greater meaning from them, rather than allowing them to become obstacles that inhibited their development.

Rewarded/Inspired

Feelings of being rewarded/inspired were reported by 77% of participants (74% on site, 19% while working on assignments, 7% in general, and 0% in class). Students found their service experience personally rewarding or felt inspired by overcoming some difficulty. Although not included in Pekrun's *(2006)* control-value theory of achievement emotions, feelings of being rewarded/inspired are thematically similar to the outcome/retrospective-based emotions of pride and gratitude. Each of these emotions results from a positive valuing of the situation with high levels of perceived self or other control, which is consistent with student reports.

Robin had an inspiring experience at her service site that demonstrates the benefits of having an effective community partner. Robin was in a psychology class, working in a local elementary school. The principal of the elementary school spoke to her class as an orientation to their service. Robin reported, "I was totally inspired by his love for the kids and how he isn't going to give up on them… I just really appreciate his passion for what he does, and it inspires me to be that sort of teacher that affects kids." Students reported feeling inspired by seeing others at their service site overcome difficulties or obstacles and consequently felt motivated to do likewise. This reflects the influence on students' emotional experiences of indirect feedback from observing the achievement of others (*Pekrun, 2006)*.

Summary of Qualitative Results

Students' multidimensional emotions in response to on-site, in-class, and learning-related experiences in AS-L reveal not only the applications of Pekrun's *(2006)* control-value theory of achievement emotions for understanding and predicting emotional and academic outcomes, but also the nature of service itself as inte-

grated into academic learning in higher education. Students' reflections on their emotions and related experiences demonstrate that emotions and cognitions are intricately interwoven and inseparable, especially in particular contexts.

Achievement emotions, and emotions in general, were most often experienced on site and comprised a complex mix of positive and negative valences. Positive emotions often encouraged student engagement and motivated perseverance, as Pekrun *(2006)* would predict, whereas negative emotions facilitated further action and cognitive reevaluation. Additionally, students' perceived control over various contexts mediated their emotional experiences, as did environmental factors such as the quality of the learning environment and the relationship with the community partner or service organization.

Discussion

A major finding of this study was that service sites are indeed legitimate settings to consider when examining the relationship between students' emotional experiences in different learning domains. Moreover, results suggest that service settings have more power to produce emotional experiences than traditional classroom settings. This study offers strong support for this original prediction; in addition, it supports other hypotheses regarding patterns within and between domains. The general trends for the domain-specific emotions indicated that students experienced positive emotions more often than negative emotions across domains. More relevantly, students reported feelings of hopelessness more frequently and boredom less frequently at their service site than in other domains, highlighting the engaging yet often frustrating aspects of the service experience and supporting the importance of structured reflection to help students navigate challenging situations *(Eyler, 2002; Hatcher & Bringle, 1997)*.

Within and across domains, results supported the hypotheses based on Pekrun et al.'s *(2010)* study that positive emotions are positively correlated with one another (creating positive feedback loops), negative emotions are also positively correlated (creating negative feedback loops), and positive and negative emotions are negatively correlated *(Pekrun, 1992)*. In the present findings, however, emotions did not carry over across domains to the extent they did in Pekrun et al.'s *(2010)* study, suggesting greater domain specificity for emotional experiences in AS-L and only partially supporting the hypothesis. In the AS-L portion of the measure,

class- and service-related enjoyment were significantly positively correlated, demonstrating how the broad conceptual foundation of Pekrun's *(2006)* control-value theory of emotions illuminates aspects of the AS-L experience. Additionally, strong positive correlations between service-related hope and pride highlight the salience of these emotions for students working on site, indicating the perceived value and sense of efficacy students attain in these settings.

Although no specific predictions were made regarding the qualitative aspect of the study, the researchers' general hypothesis that students would report a broad range of both positive and negative emotions was supported. Excitement/enjoyment was most frequently cited, confirming Pekrun et al.'s *(2010)* quantitative study of the AEQ and suggesting that this is an important emotion in learning. Interview participants referenced all the achievement emotions as well as feelings of being sad/upset, stressed, comfortable/relaxed, and shocked, which were not included in the original theory *(Pekrun, 2006)*. The presence of these emotions (as students labeled them) in AS-L supports the notion that AS-L classes evoke both emotional experiences similar to those characteristic of traditional classrooms and emotional experiences unique to AS-L, although the latter may differ in degree or in kind. As the researchers hypothesized, participants reported that the majority of emotional experiences occurred on site, suggesting that strongly-activated emotions of both positive and negative valence characterize this domain.

This study was limited in several ways. Perhaps the greatest limitation was the correlational nature of the study itself: Correlational designs offer insight but do not allow conclusive statements about causality. Because of the amount of time required to complete the survey, it was not possible to collect data at multiple intervals throughout the semester, which limited the sample size. Because of the AEQ's length, students may or may not have answered the questions reflectively, particularly toward the end, due to fatigue. Some students also chose to withdraw before completing the entire AEQ, possibly due to fatigue or discomfort; as a result, the sample was potentially positively skewed or less representative of the students in each particular class.

Several avenues of exploration and analysis merit further research. To address some of the study's limitations, future research should administer an abbreviated version of the AEQ at multiple intervals to track students' experiences over time. Similarly, researchers should obtain objective measures of academic achieve-

ment and introduce additional measures of emotional experience to further corroborate those in the AEQ, such as the cognitive and affective measures used in Astin et al.'s *(2000)* study. Researchers could also use random assignment to track academic and affective outcomes in AS-L versus traditional courses, to investigate causality and build on the research of Osborne et al. *(1998)*. Further development of the AS-L section of the questionnaire to include more items or make the existing items more reliable would also strengthen future studies.

The findings demonstrate the applicability of Pekrun's *(2006)* control-value theory of achievement emotions and the AEQ to AS-L and the broader AS-L literature *(Pekrun et al., 2010)*. Understanding the emotional context behind academic outcomes helps clarify individual and pedagogical achievement potential and success in AS-L courses, which are important benchmarks in justifying the extra time and energy needed to teach an AS-L class *(Eyler et al., 1997)*. The findings also reaffirm the importance of structured reflection and integrated content. Previous studies using objective measures of student achievement outcomes demonstrated the significance of the amount and type of reflection and integration *(Astin et al., 2000; Eyler, 2002; Hatcher & Bringle, 1997; Osborne et al., 1998)*. In this study, students themselves articulated how essential this is. The fact that students verbalized the benefits of connecting course content explicitly, specifically, and intentionally to the service and reflection activities—and the detriments of failing to do so—reflects a motivation to weave together the personal and intellectual that faculty should encourage and cultivate.

As Dewey noted, "education is a social process; education is growth; education is not a preparation for life but is life itself" *(1997, p. 155)*. Investigating students' emotions in AS-L not only facilitates a better understanding of their subjective experience and its relationship to academic outcomes, but also offers empirical evidence for reframing the cognitive/affective dichotomy that is so problematically pervasive *(Felten et al., 2006)*. It illuminates how one's thoughts (and therefore intellect) are bound to one's feelings, challenging the traditional associations with education and experience, respectively. Only when pedagogical practices can reconcile this false dichotomy, recognizing how cognition and emotion cocreate and direct each other, will we be able to fully achieve the goals of AS-L and learning in general: to cultivate critical thinking and reflection, deep knowledge, agency and informed action, and a greater sense of balanced well-being for individuals and their communities.

References

Astin, A. W., Vogelgesang, L. J., Ikeda, E. K., & Yee, J. A. (2000). *How service learning affects students*. Los Angeles, CA: Higher Education Research Institute. Retrieved from http://epic.cuir.uwm.edu/ISL/pdfs/asthow.pdf

Boeije, H. (2010). *Analysis in qualitative research*. Wiltshire, England: Sage.

Daniels, L. M., Stupnisky, R. H., Pekrun, R., Haynes, T. L., Perry, R. P., & Newall, N. E. (2009). A longitudinal analysis of achievement goals: From affective antecedents to emotional effects and achievement outcomes. *Journal of Educational Psychology, 101*(4), 948–963.

Dewey, J. (1938). *Experience and education*. New York, NY: Simon and Schuster.

Dewey, J. (1997). Experience and thinking. In J. A. Boydston (Ed.), *The middle works, 1899–1924 of John Dewey: Volume 9. 1916 Democracy and education* (pp. 146–158). Carbondale, IL: Southern Illinois University Press.

Eyler, J. (2002). Reflection: Linking service and learning—linking students and communities. *Journal of Social Sciences, 58*(3), 517–534.

Eyler, J., Giles, D. E., & Braxton, J. (1997). The impact of service-learning on college students. *Michigan Journal of Community Service Learning, 4*(1), 5–15.

Felten, P., Gilchrist, L. Z., & Darby, A. (2006). Emotion and learning: Feeling our way toward a new theory of reflection in service-learning. *Michigan Journal of Community Service Learning, 12*(2), 38–46.

Hatcher, J. A., & Bringle, R. G. (1997). Reflection: Bridging the gap between service and learning. *College Teaching 45*(4), 153–158.

Hatcher, J. A., Bringle, R. G., & Muthiah, R. (2004). Designing effective reflection: What matters to service-learning? *Michigan Journal of Community Service Learning, 11*(1), 38–46.

Lichtenfeld, S., Pekrun, R., Stupnisky, R. H., Reiss, K., & Murayama, K. (2012). Measuring students' emotions in the early years: The Achievement Emotions Questionnaire-Elementary School (AEQ-ES). *Learning and Individual Differences,* 22, 190–201.

National Survey of Student Engagement. (2010). Major differences: Examining student engagement by field of study, annual results 2010. Retrieved from http://nsse.iub.edu/NSSE_2010_Results/pdf/NSSE_2010_AnnualResults.pdf

Osborne, R. E., Hammerich, S., & Hensley, C. (1998). Student effects of service-learning: Tracking change across a semester. *Michigan Journal of Community Service Learning, 5*(1), 5–13.

Pekrun, R. (1992). The impact of emotions on learning and achievement: Towards a theory of cognitive/motivational mediators. *Applied Psychology: An International Review, 41*(4), 359–376.

Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review, 18*, 315–341.

Pekrun, R., Goetz, T., Frenzel, A. C., Barchfeld, P., & Perry, R. P. (2010). Measuring emotions in students' learning and performance: The Achievement Emotions Questionnaire (AEQ). *Contemporary Educational Psychology, 36*, 36–48.

Rosing, H., Reed, S., Ferrari, J., & Bothne, N. (2010). Understanding student complaints in the service learning pedagogy. *American Journal of Community Psychology, 46*(3–4), 472–481.

Saltmarsh, J. (1996). Education for critical citizenship: John Dewey's contribution to the pedagogy of community service learning. *Michigan Journal of Community Service Learning, 3*(1), 13–21.

Strage, A. (2004). Long-term academic benefits of service-learning: When and where do they manifest themselves? *College Student Journal, 38*(2), 257–262.

Authors

Elise Noyes, an honors undergraduate alum at Elon University, focused her research on emotions and academic service-learning. She graduated with a bachelor of arts in psychology.

Alexa Darby is an associate professor of psychology at Elon University. Her main area of research is educational psychology. She received a Ph.D. in educational psychology from the University of Georgia.

Christopher Leupold is an associate professor of psychology at Elon University. His areas of interest are organizational attitudes and leadership. He received his Ph.D. in industrial/organizational psychology from Wayne State University.