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Fostering Experiential Self-Regulation Through Outdoor Adventure Education

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Abstract

Learners thrive when they have the capacity to regulate interest and goal direction. Through direct experiences that are interesting and goal-relevant, learners can internalize and better understand their own agency in the learning process. This article further examines this premise in an outdoor adventure education (OAE) context through two interrelated studies. The aim of the first study was to investigate the potential of OAE to afford more frequent experiences that are interesting and goal-relevant. The aim of the second study was to build on the findings from the first study and determine if exposure to OAE programs might lead to more self-directed learning. The results partially support the premise that OAE can foster experiential self-regulation.

Keywords

recreation, self-directed learning, self-regulated learning, youth

"Learning can be valuable." "Learning can be fun." For most people, these two statements are easily accepted. And combing these two descriptors, "Learning can be both valuable *and* fun," is not controversial. Yet, it is also apparent that learning is not *always* valuable and fun. We have all willed ourselves to study, memorize, and apply educational content that might, charitably, be considered irrelevant. We have also learned skills and content that have little to no practical value, but were fun and

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interesting to discover. Fortunately, in the best situations, we experience learning that is valuable or goal-relevant and intrinsically interesting or fun. Dewey (1910/1991) considered this combinatory state "the ideal mental condition" (p. 218); a state that is optimally mentally engaging.

How do individuals learn to reach a state of optimal engagement? The literature on this topic points to lived experiences that afford such combinatory experiences; experiences that are valuable/goal-relevant and intrinsically interesting/fun. Such experiences are thought to foster a propensity for lifelong learning and self-regulated learning orientations (Rathunde, 2009).

Therefore, we conducted two separate yet interrelated studies to better understand the potential of outdoor adventure education (OAE) programs to affect experiential self-regulation, or the capacity to regulate interest and goal direction. The aim of the first study (Study 1) was to investigate the potential of OAE to afford experiences that are valued/goal-relevant and fun/enjoyable (i.e., optimally engaging). Specifically, we compared the intrinsic interest and goal-relevance of randomly identified in-situ experiences before, during, and after an OAE experience and examined changes in dispositional interest and perceived value of learning. The aim of the second study (Study 2) was to further build on the findings from the first study and determine if exposure to OAE programs might lead to more self-directed learning (SDL). Specifically, we were interested in comparing growth in SDL during an OAE experience to growth in SDL at other times.

Background

If students could self-regulate so that learning experiences were goal-relevant and intrinsically interesting, it would, presumably, enhance their abilities to stay on a path of lifelong learning. They would be able to make their interests abide and continually renew them through experiences of deep engagement, while avoiding getting stuck for long periods of time in states of boredom, drudgery, or anxiety that quickly sap energy and attention (Dewey, 1910/1991).

The notion that learning could be enhanced if students were better able to self-regulate states of interest and goal direction is one that most educators and education researchers readily accept. However, how such qualities are developed is a daunting and complex question that likely involves biological dispositions and early childhood experiences, as well as long histories in families and schools with various expectations and demands that shape learning dispositions (cf. Bronfenbrenner, 2005). Therefore, the present studies do not directly explore this broader developmental question. Rather, they focus on one likely facet of the development of self-regulated learning: the importance of having direct and recent engaging learning experiences that can alter common perceptions of learning as disconnected from intrinsic interest.

Experiential Self-Regulation: A Preliminary Framework

Psychologists and other researchers use the word "self-regulation" in many different ways (e.g., Bronson, 2000). Some definitions of the term refer to the self-control of

behaviors and emotions so as to conform to expectations in particular situations, such as appropriate behavior in a classroom. The use of the term in the present study has less to do with behavior and more to do with the control of attention and the ability to monitor learning activities in ways that enhance motivation and the quality of experience. This *experiential* self-regulation, the capacity to regulate interest, and goal direction, is thought to be especially important for understanding successful self-directed and lifelong learning (e.g., Rathunde & Csikszentmihalyi, 2006).

The present studies focuses on two main themes that warrant additional explanation. The first of these themes is the relationship between optimal engagement and regulation of learning. The second theme involves potential carry-over effect on students' dispositional learning orientations and self-direction. Discussion of several broad assumptions about (a) the nature of an effective style of regulating optimal engagement, and (b) the development of experiential self-regulation follows.

Optimal engagement and the regulation of learning. One of the challenges with the disparate literature on optimal engagement and self-regulated learning is the diversity of terms used to convey similar, if not identical, concepts. For purposes of this article, we have chosen to use "intrinsic interest" in a topic to represent Dewey's "play" and James's "passive or involuntary attention." This state represents a situational attraction and interest in an experience that does not require a great deal of cognitive energy, as the experience is inherently engaging. James and others (e.g., James 1890; Kaplan & Berman, 2010) actually view this type of attention or interest as cognitively restorative as it does not require willful effort.

We have chosen to use the term *effortful attention* to contrast with intrinsic interest. Effortful attention is predicated on an extrinsic goal, as the attention is not inherently driven by the experience—it must be intentionally or willfully directed via effort. This idea is consistent with Dewey's view of "work" or James's view of "active or voluntary attention." In contrast to intrinsic interest, effortful attention is cognitively taxing and depletes mental capacity and resources (James, 1890; Kaplan & Berman, 2010).

The role of goals is critical to any discussion of self-regulation of learning. Regulation is only possible if a desired end state, or goal, is understood. Thus, to self-regulate ones learning, one must understand the goal. The path to goal achievement typically requires focus, direction, and effort. Very few goals are achievable by solely following intrinsic interest. In contrast, some goals are achievable solely through effortful attention. However, most paths to goal achievement involve discreet experiences that are intrinsically interesting and effortful.

Interplay between intrinsic interest and effortful attention is possible in several ways as one self-regulates learning. According to Dewey (1910/1991), the ideal state is when intrinsic interest and goal direction are aligned, where the learner is working toward a goal and the process is inherently interesting. Dewey posits that this state is "high" in goal-relevance and intrinsic interest, and he contrasts it with three other alternatives. A learner can be in a state that is goal-relevant but uninteresting. Dewey terms this state "drudgery," and it requires effortful attention, but lacks intrinsic

interest. For example, very few people would consider test taking to be enjoyable, yet it is often necessary for educational or employment-related goals. Tests also are typically cognitively fatiguing for these same reasons.

A person might also participate in an experience that is intrinsically interesting, yet lacks a predetermined alignment with progress toward a distal goal. Dewey terms this state "fooling." These intrinsically interesting states that are not directed toward a learning goal ultimately may remain critical to goal achievement because of their power for cognitive restoration and their potential for intuition, creativity, and reflective thought (Rathunde, 2009). This state is represented by high levels of intrinsic interest, but low levels of goal direction.

Dewey's fourth state is low in intrinsic interest and goal-relevance. This represents a general state of apathy. In this state, neither interest nor effort is driving action.

The importance of the combinatory mode and the dialectic between goal direction and intrinsic interest has been shown to be critical in the development of talents in adolescents (Csikszentmihalyi, Rathunde, & Whalen, 1997) and the lifelong learning of eminent and creative adults (Csikszentmihalyi, 1996; Rathunde & Csikszentmihalyi, 2006). According to Rathunde (2010), the process is best conceptualized as developing an experiential wisdom related to how one learns and functions, understanding that intrinsic interest leads to a relaxed openness, absorption, and tolerance for ambiguity; qualities that have, traditionally, been attributed to a creative person (Barron, 1969; Sternberg, 1988). Goal direction and effortful attention act on these creative ideas to make course corrections or elaborations that organize material and make it easier to remember and articulate (Rathunde, 2010). In Dewey's terms, when intrinsically interesting thoughts are aligned with long-term goals, there is a dialectical rhythm that allows momentary absorption in the immediate experience and the ability to course-correct based on the sought directionality of the learning process. This contrast in consciousness furnishes essential feedback that allows intrinsic interest to stay on track toward a valued goal (see Dewey, 1910/1991).

The development of experiential self-regulation. Assuming that mature experiential self-regulation proceeds through the interplay of intrinsic interest and effortful directed attention, how does such a self-regulatory capacity develop? Genetic factors and socialization experiences shape the capacity for experiential self-regulation.

The human organism is born trying to maintain interest and optimal arousal. Attempts to avoid too much or too little stimulation are apparent from the first moments of life: When a novel stimulus is introduced, infants will pay attention until they habituate to the new sight and arousal diminishes; then, attention recovers again when a novel stimulus is introduced (Caron & Caron, 1968). In terms of these early dynamics, the importance of genetic predispositions and early parenting influences are evident. Temperament affects attention span, activity level, intensity of focus and persistence, as well as other characteristics that influence the ability to pay attention (Thomas & Chess, 1977). In addition, the quality of early parental caregiving affects attachment quality, which, in turn, affects the developing self-regulative abilities of children (Sroufe, Egeland, Carlson, & Collins, 2005).

Modifications of these early temperament and attachment influences continually take place through ongoing socialization in families, schools, and other learning contexts. Building on the base established in infancy and early childhood, experiences in middle childhood and adolescence continue to shape adult learning styles, some of which will eventually be more proficient at self-regulating a path of interest (Rathunde & Csikszentmihalyi, 2006). This positive outcome is more likely to occur when there is a goodness-of-fit between temperament (e.g., ability to focus attention) and the demands of the context established by caring adults (e.g., parents and teachers), setting in motion a positive feedback cycle that strengthens experiential self-regulation.

What is common to all of the above observations on the development of experiential self-regulation is the fact that having firsthand experiences that are intrinsically interesting and goal-relevant is essential. It is the infant who is kept in a state of optimal arousal who develops secure attachments and more effective self-regulative abilities in early childhood. It is the adolescent with supportive yet demanding home and school environments who thrives and enters college expecting to be engaged and interested.

Therefore, we hypothesized that college-age students who had recent optimally engaging experiences in a semester-long OAE program would emerge from the program with more positive expectations about learning and would be more self-directed learners. Specifically, we anticipated that program participants would report more frequent optimal engagement during the program. Furthermore, after returning from their OAE experiences, the recent and firsthand optimally engaging experiences were expected to positively affect students' dispositions and self-direction regarding learning.

Study 1

Method

A convenience sample of 47 college-age students (18-29 years of age, M_{age} = 20.6 years, 72% male and 28% female) enrolled in three semester-long OAE courses at National Outdoor Leadership School (NOLS) were invited to participate in the first study. Eighty-two percent of the participants were enrolled in college before their NOLS courses and 75% were enrolled in college later. The majority of the students who were not in college reported that they were employed.

NOLS is one of the largest providers of OAE courses for college students. Each year, approximately 760 students participate in semester-long courses at the NOLS. NOLS semester courses are between 70 and 90 days long and include multiple skill types and curriculum areas. Semester courses include approximately five university-approved courses that may be taken for up to 16 hrs of college credit in topics ranging from biology to leadership.

Procedures and measures. This study relied on a modified version of the Experience Sampling Method (Csikszentmihalyi & Larson, 1987), where participants were asked

to complete experience sampling forms (ESFs) pertaining to two randomly assigned hour-long blocks each day over four separate week-long periods: (a) Week 1 was 4 weeks before they began their semester courses; (b) Week 2 was during the third week of their semester courses; (c) Week 3 was during the third to last week of their semester courses; and (d) Week 4 was 4 weeks after their semester courses. Each of these weeks was considered a different setting for purposes of this study: pre-course, on-course 1, on-course 2, and post-course.

The situational measures, or ESFs, included basic activity reporting, information on group size, and measures of interest and goal-relevance from two subscales of the Intrinsic Motivation Inventory (IMI; McAuley, Duncan, & Tammen, 1987). The activity reporting, which was condensed from previous Experience Sampling Method (ESM) studies (e.g., Csikszentmihalyi et al., 1997), included a prompt of "what is the main thing you were doing at [insert randomly assigned prompt time]?" and 10 forced-choice options such as cooking and/or eating, structured class, and other. The "other" option provided a space to describe the activity. In addition, participants were asked how many other people they were with during the selected hour as social context was relevant to many of the activities.

To measure interest and goal-relevance, three items from the Interest/Enjoyment subscale (sample item: "I thought this activity was quite enjoyable") and three items from the Value/Usefulness subscales (sample item: "I think that doing this activity is useful for my future goals") were included on the ESFs. We customized the Value/Usefulness subscale to capture the value/usefulness of the activity toward goal attainment. Thus, these items measured the value toward future goal attainment, or goal-relevance. The rating scale ranged from 1 (*not at all true*) to 7 (*very true*) and the subscales have typically been internally consistent and factorially distinct (Deci, Eghrari, Patrick, & Leone, 1994; McAuley et al., 1987).

Participants were prompted twice daily, either by the research team via email or by the semester course proctor, to complete the ESF pertaining to a randomly determined hour-long block earlier in the day. The procedure was to prompt participants around lunchtime regarding a morning hour and around dinnertime regarding an afternoon hour. It was determined a priori that reports not completed within 48 hrs of the prompt would not be included in the analysis.

Using a similar protocol to Rathunde and Csikszentmihalyi (2005), the measures of interest and goal-relevance allowed each experience to be categorized into one of four quadrants: (a) Apathetic, (b) Fooling, (c) Drudgery, or (d) Optimal. "Apathetic" was below the individual's mean score on interest and goal-relevance. "Fooling" was below the individual's mean score on goal-relevance, but above the mean score on interest. "Drudgery" was above the individual's mean score on goal-relevance, but below the mean score on interest. "Optimal" was above the individual's mean score on interest and goal-relevance.

In addition, each student completed dispositional measures of interest and value of learning to address any possible dispositional shifts toward learning. The full seven and six item subscales of Interest/Enjoyment and Value/Usefulness (McAuley et al., 1987) were customized to measure orientation toward learning as a general disposition.

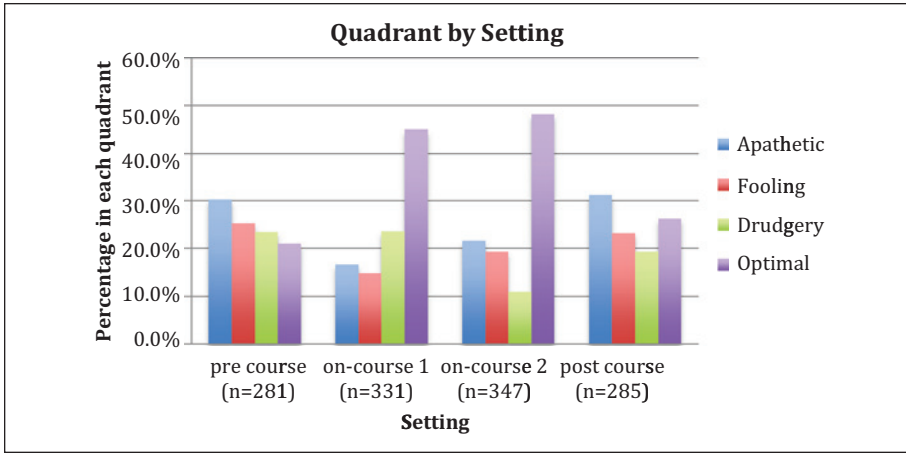

Figure 1. Quadrant by Setting for Study 1.
Note. Significant differences: apathy was higher for pre- and post-course; fooling was lowest at the first on-course time; drudgery was lowest at on-course 2; optimal engagement was highest at on-course 1 and 2; and lowest at pre- and post-course.

Data Analysis and Results

The first hypothesis was that optimal experiences would be more frequent during the NOLS course (on-course 1 and on-course 2) than pre-course or post-course. To test the overall relationship, the SPSS Crosstabs procedure and Cramer's V were used. Following a significant overall relationship, standardized residuals greater than 1.96 ($p < .05$) were interpreted. The second hypothesis was that orientation toward learning, operationalized as dispositional interest in learning and value of learning, would increase from the pre-course setting to the post-course setting. To test this hypothesis, paired t tests were used on both operationalized variables.

During the 4 weeks of data collection, 1,244 valid responses were collected from 32 different participants. Fifteen of the 47 course participants chose not to participate in the study, mostly due to their anticipated unavailability during the pre- or post-sampling times. The within-subjects design with participant-level centering allows the participant to serve as his or her own control and allows for comparisons in quadrant frequency before, during (2 times), and after the OAE semester (Rathunde & Csikszentmihalyi, 2005).

Setting was a significant predictor of quadrant membership (Cramer's $V = .158$, $p < .001$; see Figure 1). Interpreting only the significant standardized residuals, the number of hours categorized into the apathetic quadrant was highest for pre- and post-course. The number of hours categorized as fooling was significantly lower at the first on-course time. The number of hours considered drudgery was lowest at on-course 2. The number of hours categorized as optimally engaging was highest at on-course 1 and 2, and lowest at pre- and post-course.

Table 1. Descriptive Statistics for Interest in Learning and Value of Learning From Pre-Course to Post-Course.

	Pre-course		Post-Course	
	M	*SD*	*M*	*SD*
Interest	5.4	.70	5.8	.69
Value	6.7	.54	6.5	.76

Given the number of incomplete data sets at all four times on the measures for dispositional orientation toward learning, only 19 matched pre- and post-program measures of learning interest and learning value were available for analysis. Only the measure of learning interest significantly increased from pre- to post-program (p = .04; Cohen's d = .45); the change in learning value was not significant ($p > .05$). For means and standard deviations, see Table 1.

In addition, from the activity and group size reporting, a change in how the activities were viewed was evident. Relevant to this study, before the NOLS semester structured classes and homework were most frequently reported as drudgery; structured classes were also commonly apathy inducing. After the OAE course, structured classes, only applicable to the 75% of students in college after returning from their OAE courses, were reported as more interesting, and were, along with recreation, the most frequent activities reported as optimally engaging.

Study 2

Method

As a follow-up to Study 1, Study 2 further examined dispositional changes by looking at the effects of OAE on SDL, a proxy for self-regulated learning. Thirty-two summer semester students involved in four NOLS courses and 45 fall semester students involved in five NOLS courses agreed to participate in Study 2. The students averaged 19.8 years of age and the sample was 44% female and 53% male. To have meaningful comparison groups, two interrelated hypotheses were tested regarding SDL development in NOLS students. See Table 2 for an overview of the timing and study design.

The first hypothesis compared the changes in SDL over the duration of the summer semester season. This involved comparing changes in summer semester students to changes in fall semester students over the summer season. The fall semester students were enrolled in their semester courses, but did not participate in NOLS course activity during this time frame. Thus, they served as a comparison group. Specifically, the first hypothesis tested if the summer semester students, who were actively participating in their courses over the summer season, improved in SDL compared with the fall semester students, who were enrolled during the summer season but not actively participating in a NOLS semester.

Table 2. Overview of Design and Timing for Study 2 Hypothesis Tests.

	Time 1		Time 2		Time 3
Summer Semester Students[a]	PRO-SDLS	Summer NOLS Semester	PRO-SDLS		
Fall Semester Students[a,b]	PRO-SDLS	Enrolled but not participating	PRO-SDLS	Fall NOLS Semester	PRO-SDLS

Note. PRO-SDLS = Personal Responsibility Orientation Self-Direction Learning Scale; NOLS = National Outdoor Leadership School.
[a]Hypothesis test 1 compared summer semester with fall semester students at Time 2 controlled for differences at Time 1.
[b]Hypothesis test 2 compared changes over all three times for fall semester students.

The second hypothesis involved comparing changes in SDL in the fall semester students during the summer semester season (at which time they *did not* participate in NOLS course activity) to changes during the fall semester season (at which time they *did* participate in a NOLS semester). Specifically, we hypothesized that changes in SDL would be greater during the fall semester, when these students were actively participating in a NOLS semester than during the summer season, when they were enrolled but not participating.

The primary measure used in Study 2 was the Personal Responsibility Orientation Self-Direction Learning Scale (PRO-SDLS; Stockdale & Brockett, 2010). This is a 25-item questionnaire that measures four aspects of SDL through four distinct subscales: initiative, control, self-efficacy, and motivation. All subscales have evidence of reliability (α range = .78-.82) and validity with college-age students in a learning context (Stockdale & Brockett, 2010). The scale uses a 5-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. In previous studies, the subscale scores were positively related to age and unrelated to gender, indicating age as a viable covariate.

A link to an online version of the PRO-SDLS questionnaire was sent to all enrolled summer and fall semester students approximately 4 weeks prior to the beginning of the summer semester season. A link to the same questionnaire was sent again to the enrolled semester students approximately 4 weeks after the summer semester season and before the fall semester courses began. The fall semester students were asked to again complete the online questionnaire approximately 4 weeks after their semester courses ended.

Data Analysis and Results

To test the first hypothesis, planned contrasts were used to investigate the differences between the summer (treatment) and fall (comparison) groups over the summer season. As we were unable to systematically assign participants to the groups, age and Time 1 (baseline) scores were used as covariates in the model. Only the initiative subscale (t ratio = 1.70, $df = 71$, $p = .047$) was significantly higher for the treatment group, treatment $M = 22.6$ (.40), comparison $M = 21.7$ (.33) when controlled for baseline differences in initiative and age.

Table 3. Descriptive Statistics for Study 2 Hypothesis Test 2.

		Time 1 *M* (*SE*)		Time 2 *M* (*SE*)		Time 3 *M* (*SE*)
Fall Semester Students	Initiative	21.5 (.64)	Enrolled but not participating	21.9 (.67)	Fall NOLS Semester	23.0 (.53)*
	Control	22.8 (.45)		22.5 (.43)		23.4 (.47)*
	Self-Efficacy	24.5 (.44)		24.6 (.47)		25.2 (.46)
	Motivation	25.7 (.74)		26.6 (.77)		27.5 (.67)

Note. NOLS= National Outdoor Leadership School.
*Significant increase from previous time ($p < .05$).

To test the second hypothesis, repeated planned contrasts were used to investigate the changes between baseline, pretest, and posttest for the fall semester students. Hypotheses were that the subscales would show greater increases between Times 2 and 3 (when the students were on the semester course) than between Times 1 and 2. While all four dependent variables showed increases from baseline, only initiative (t ratio = 2.04, $df = 35$, $p = .025$, partial $\eta^2 = .11$) and control (t ratio = 1.78, $df = 35$, $p = .041$, partial $\eta^2 = .08$) showed significantly greater increases from Time 2 to 3 than from Time 1 to 2. See Table 3 for descriptive statistics.

Discussion

The participants in Study 1 reported more frequent optimal engagement during a semester-long OAE course than at college or home. Data also support a dispositional shift toward greater interest in learning, which was durable 4 weeks after course completion. Study 2 participants showed greater improvements in some aspects of SDL during OAE courses than at other times. These findings are generally consistent with our rationale that contexts which are able to afford interesting and goal-relevant experiences can also foster a participant's ability to better self-regulate their own learning trajectory.

Optimal Situational Engagement

OAE seems well suited to afford optimally engaging experiences. Direct, hands-on experiences that are goal-relevant and interesting are a hallmark of OAE. Very little content is covered that is not immediately useful. The content and context are also novel, and learners are typically attracted to new or different experiences. Route planning, campsite selection, or backcountry cooking, for example, are immediately relevant and generally novel, thus typically directly engage the OAE participants in the learning experience.

Dispositional Changes in Learning

While the support of dispositional changes is less clear, OAE seems well positioned to foster experiential self-regulation through several mechanisms: (a) opportunities for

reflection; (b) a challenging yet supportive environment; (c) opportunities to succeed through persistent, willful effort; and (d) a fluid and flexible nature. OAE is inherently hands-on and active, yet affords time for reflection and contemplation by design. The remote nature and separation from larger social influences allows contemplation not common in college students' typically busy lives. This dialectic of engaging direct experience and reflection is necessary to enjoy momentary experiences, yet make adjustments in the general trajectory of one's educational path.

The literature on authoritative parenting (Steinberg, Lamborn, Dornbusch, & Darling, 1992) and teaching contexts (Wentzel, 2002) posits that environments that are able to combine challenge and support are often optimal for adolescent development (Rathunde, 1996). Challenge remains an inherent part of OAE, and supportive and responsive social groups are widely considered critical program elements (cf. Sibthorp, Paisley, & Gookin, 2007). It is likely that these elements encourage participants to try, fail, and learn in efforts to improve their own regulatory strategies.

Researchers (e.g., Baumeister, Gailliot, DeWall, & Oaten, 2006) suggest that practicing persistence in the face of challenge or adversity makes future persistence more likely. That is, similar to strengthening a muscle, tolerance in the face of adversity is learned thought repetition and practice. This idea aligns well with most OAE models, where overcoming authentic challenges and practicing perseverance are seen as central modes of learning and growth. In recent research, tolerance for adversity was reported as one of the primary and most useful outcomes learned at NOLS years after program participation (Sibthorp, Furman, Paisley, Gookin, & Schumann, 2011). This tolerance for adversity is likely developed as students learn and practice how and when to exercise willpower or effortful attention in the face of challenge. It becomes an important strategy to self-regulate learning.

The fluid and flexible nature of OAE programs allows for curricular objectives to be realized in highly customized and diverse ways; ways that allow students to exercise control and initiative in the learning process. To self-regulate learning, goals may be adjusted, willpower may be used, or in-situ experiences may be modified to facilitate interest and engagement. If programs, or even discrete experiences, are so structured that they cannot afford the necessary individual accommodations to adapt and self-regulate interest, quitting, or dropping out is more likely (Sansone & Thoman, 2006).

In Study 2, the initiative and control subscales exhibited the greatest increases during OAE. These subscales were conceptualized to capture the Teaching–Learning Transaction component of the Personal Responsibility and SDL model (Stockdale & Brockett, 2010) and to measure "agreement with actions that demonstrate proactively assuming control and initiative for planning, implementing, and evaluating the learning process" (p. 5). In contrast, motivation and self-efficacy, which were unchanged by OAE in our study, are thought to tap learner characteristics of this model (Stockdale & Brockett, 2010). Thus, OAE may not significantly change students' perceived abilities (self-efficacy) or even their motivations to learn. However, it may be able to change their perceptions of what is possible in a learning environment. In other words, the OAE experience may not make the participants more confident in their abilities to

learn or more motivated to learn, but it may change the way they view educational contexts; as contexts that allow and require individual self-direction, control, and initiative. It is possible that the shift in structured classes becoming more interesting after the course indicates an attitudinal or behavioral shift on the part of the college students: They are, perhaps, either selecting different courses or attending them with a more productive and positive attitude.

However, some of the self-regulatory strategies or dispositions may be inappropriate back home or in a traditional college environment. For example, using a collaborative strategy, popular in OAE, on individual assignments or exams at college may be prohibited. It is also possible that students come to prefer field-based instruction and erroneously discount other forms of education.

Implications for Future Research

Additional research should be conducted on the specific mechanisms that may afford or inhibit the development of experiential self-regulation in OAE. One area that seems promising is the authoritative nature of adult role models. Some OAE instructors could be considered authoritative; they are responsive and demanding (see Steinberg et al., 1992).

The specific strategies to self-regulate learning used by participants also warrant additional attention. It is unclear from this study what specific strategies were learned or practiced by the participants during their semester course. It is also unclear which of these strategies are most useful in college or home environments. In addition, future research might also examine the potential of OAE courses and optimally engaging experiences in different populations.

Implications for OAE Practice

Practitioners should not fear the temporary nature of OAE experiences. Some of the recent work on growth and development stresses the value and importance of high-quality discrete experiences in establishing positive developmental trajectories over the life span (Masten & Cicchetti, 2010). Experiences that demonstrate to students that learning can be simultaneously interesting and goal-relevant has great potential to alter how these students will view learning over their lives.

Transfer of learning has been challenging to document (Furman & Sibthorp, 2012). By embracing programmatic elements that are under practitioner control, OAE can afford high-quality discrete experiences that may foster subtle, yet critical, dispositional shifts in participants. OAE practitioners should continue to provide opportunities for reflection, a challenging yet supportive environment, opportunities to succeed through perseverance, and a program that can adjust to a student's individual needs.

Limitations

This study has a number of limitations. These include the use of self-report measures, the idiosyncratic sample, and the quasi-experimental study design. Challenges with

the measurement included the adaptation of existing instrument designed for a different context. Our ability to detect difference in the value of learning variable was further constrained by a ceiling effect in the measure: College students obviously consider learning as valuable to their future goals.

The use of NOLS semester students potentially limits the generalizability of the findings. It is possible that the observed differences between the on- and off-course levels of optimal engagement have more to do with individual predispositions than with the specific nature of the OAE semester. Just as an elective course tends to draw more intrinsically motivated students than one that is required, NOLS students typically face less societal pressure to attend NOLS than college in general. In addition, there is certainly an individual component to strategy preference, selection, and execution. Some may find competition to be a useful motivator. For others, working collaboratively with others better aligns with their intrapersonal needs. Thus, these findings may be a function of individual predispositions and preferences, and may not generalize to other populations.

Furthermore, the studies' designs were largely dictated by logistics and availability of participants. Study 1 did not use a comparison group and, in Study 2, we were unable to systematically assign participants to comparison groups. Both samples were relatively small and suffered from attrition. These compromises limited the statistical power and the internal validity of the study inferences.

Conclusion

The idea that a multitude of discrete engaging experiences may lead to a more substantive, dispositional shift is consistent with the extant literature (e.g., Rathunde, 2009). According to Dewey (1910/1991), and others, these actively engaging immediate experiences, coupled with reflection, allow students to enjoy momentary learning, yet keep their multitude of micro-experiences headed in a desired direction. By way of these optimal in-situ experiences, students may come to realize that learning can be a rewarding and enjoyable lifelong pursuit. In Dewey's terms, learning can be playful and serious.

Notwithstanding the substantive and significant observed increases in optimally engaging experiences, conclusive support that OAE can and does lead to dispositional shifts and approaches to learning remains limited. Relatively small, yet significant, increases in interest and perceived initiative and control over time and during the NOLS experience indicate that semester program participants may shift their perceptions of what a learning environment may require and expect of them. Perhaps this is what OAE can afford: an understanding that learning can be fun and that the best learning involves active initiative, agency, and control by the learner—a truism that is, unfortunately, too often unclear.

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