

Unifying Psychology and Experiential Education: Toward an Integrated Understanding of Why It Works

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Abstract

This article examines the significance of psychology to experiential education (EE) and critiques EE models that have developed in isolation from larger psychological theories and developments. Following a review of literature and current issues, select areas of psychology are explored with reference to experiential learning processes. The state of knowledge and emerging paradigms in positive psychology, self-determination theory, flow theory, and neuropsychology are explored in an effort to better understand the mechanisms underpinning experiential learning and program development. Implications for practitioners and future research directions are discussed in relation to these emerging bodies of knowledge.

Keywords

positive psychology, self-determination theory, flow, neuropsychology, outdoor education settings

Introduction

A large body of research identifies the positive outcomes of experiential education (EE) programs, such as Outward Bound and the National Outdoor Leadership School

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(e.g., Baldwin, Persing, & Magnuson, 2004; Hattie, Marsh, Neill, & Richards, 1997). Considerably less well understood is *why* these changes happen. This issue has been repeatedly identified (e.g., Ewert & McAvoy, 2000; Henderson, 2004) and recently addressed in studies examining specific processes and factors that promote positive change (e.g., Sibthorp, Paisley, & Gookin, 2007; Sibthorp, Paisley, Gookin, & Furman, 2008). A number of these findings and models are consistent with well-developed psychological models. Thus, identifying areas of congruence between the state of knowledge in EE and psychology may provide integrative frameworks for understanding *why* EE works, and bolster future research and programming. A current challenge within EE research is to move toward integration of research findings rather than theoretical differentiation. Our understanding of disparate EE research findings can be improved by situating them within widely accepted psychological frameworks. Moreover, recognizing the psychological processes that facilitate positive program outcomes can increase the efficacy of future EE programming and research.

Significance of Psychology to EE

EE developed through scholars such as Dewey (1938), Lewin (1952), Piaget (1967), and D. A. Kolb (1984). Although the theories they advocated drew upon social psychology and cognitive-developmental psychology, much of the EE research and theoretical development is empirically untethered from the broader realm of psychological research. EE research has focused on outcomes or the efficacy of specific programmatic elements, without making clear epistemological links to key underlying psychological processes. As a result, researchers have developed eclectic new theories and constructs specific to outdoor EE settings, rather than situate this research within established psychological frameworks. Broader disciplines, such as psychology and neuroscience, have well-developed theories of experience, perception, cognition, affect, behavior, and learning—all of which are integral EE processes. Unifying EE research with larger psychological theories may advance the current state of knowledge and connect EE to larger audiences, assessment tools, and bodies of research.

Review of Literature: Linking Psychology and EE

A myriad of theories have emerged over the past four decades to explain how and why EE programs work, alongside literature that contests the effectiveness of these programs (e.g., Brookes, 2003; Brown, 2010). One of most ubiquitous models is experiential learning theory (ELT; D. A. Kolb, 1984), which draws on the work of prominent 20th century learning theorists to present a holistic and unifying explanatory model. Since its introduction, numerous studies have used ELT to advance understanding of experiential learning. At its core, ELT claims that learning is a cyclical process of experiencing, reflecting, thinking, and acting (A. Y. Kolb & Kolb, 2005) that “results from the combination of grasping and transforming experience” (D. A. Kolb, 1984, p. 41). The importance of “processing” and learning transfer, which may occur naturally or via leader facilitation (e.g., McKenzie, 2000, 2003), is emphasized in ELT research and programming.

Despite the considerable attention given to learning cycles, transfer, leadership, and processing in EE, assessing the effectiveness of and key elements in these practices has generally proved to be elusive. EE scholars have argued that stepwise models lack robust empirical support and do not account for key holistic processes (e.g., sociocultural) that are central to experiential learning (Seaman, 2008; Seaman & Rheingold, 2013). Scholars outside the field have also recently critiqued ELT across a range of dimensions (e.g., Bergsteiner, Avery, & Neumann, 2010).

EE scholars have also long theorized the central role of natural and unfamiliar environments to experiential learning processes (e.g., Marsh, 2008). The aesthetic, spiritual, and novel qualities of wild places are hypothesized to catalyze growth and mastery, improve well-being, and increase self and environmental awareness (e.g., Boyes, 2013; D'Amato & Krasny, 2011; Ewert & McAvoy, 2000, Hattie et al., 1997). Generally, the contrast provided by natural environments is seen as means for participants to gain new perspectives on their everyday environments. Unfamiliar environments may spur development when participants act to overcome cognitive dissonance¹ through mastery (McKenzie, 2000). In addition, danger, risk, and fear have been identified as key program elements that produce optimal levels of stress, anxiety, and disequilibrium, the resolution of which promotes growth, learning, "character building," and psychological resilience (e.g., Ewert & Garvey, 2007; Ewert & Yoshino, 2011).

The benefits of EE programs such as adventure education and wilderness therapy have been repeatedly demonstrated and include enhanced self-concept, chemical dependency recovery, and reduced behavioral and emotional symptoms (e.g., Russell, 2003). Meta-analysis of hundreds of adventure education studies clearly demonstrate program efficacy, particularly for longer programs and younger participants (e.g., Gass, Gillis, & Russell, 2012; Hattie et al., 1997). Socioecological models have also connected nature-based adventure with healthy behavioral changes and eco-centric perspectives (e.g., Pryor, Carpenter, & Townsend, 2012).

Notwithstanding these findings, determining effective elements and long-term results of EE programs has been problematic. Current models and outcomes are so ingrained in literature and practice that they have only been questioned relatively recently (e.g., Brown & Fraser, 2009). Brookes (2003) and Brown (2009, 2010) are notable Australasian critics of the process, outcomes, and efficacy of adventure-based EE. They decry individualistic aspects of EE and critique empirical support for outcomes such as "character building" and transfer of learning. They contend that EE discourse and programming should shift focus to cultural, regional, historical, and social aspects, and place greater emphasis on the situated nature of learning. For example, Brown (2010, p. 13) argues that as transfer is a "highly problematic concept that has been difficult to empirically substantiate," educators should focus on social dynamics rather than using the current metaphor of "passive" transfer.

North American scholars voice additional concerns. For example, Gillis, Gass, and Russell (2008) highlight the dearth of quantitative, longitudinal, and randomized controlled studies in EE. Ewert and Sibthorp (2009) argue that self-selection (rather than randomly assigned treatment and control groups), small sample sizes, and a range of confounding variables hinder the development of evidence-based practice, empirically

validated models of experience, and the holistic understanding of underlying psychological processes. In response, larger-scale, longitudinal studies have recently identified specific characteristics that predict participant development on key psychological outcomes such as communication, leadership, small group behavior, judgment in the outdoors, and environmental awareness (Sibthorp et al., 2007). Other studies have highlighted the importance of autonomy and personal relevance in fostering positive outcomes (e.g., Ramsing & Sibthorp, 2008; Sibthorp & Arthur-Banning, 2004). These findings emphasize the key role of underlying psychological processes in promoting program goals, and begin to identify factors that support those processes.

Positive Psychology Frameworks

Numerous examples of the nexus between EE knowledge and current psychological findings are present in the literature. Promising areas of congruence lie within theories such as Seligman's (2011) *theory of well-being*, *self-determination theory* (SDT; for example, Deci & Ryan, 2002), and *flow theory* or "optimal engagement" (e.g., Nakamura & Csikszentmihalyi, 2009). These theories are part of the larger positive psychology movement, an emerging strand of psychology devoted to studying optimal development and functioning of individuals and communities (Seligman & Csikszentmihalyi, 2000). Positive psychology advances the same research agendas as EE with the benefit of a larger empirical base, and parsimonious measures and models. Although positive psychology theories have been successfully applied in educational settings, and underpin some current EE research seeking to explain program mechanisms (e.g., Passarelli, Hall, & Anderson, 2010; Sibthorp et al., 2008, 2011), they have not been widely and explicitly used for theoretical development or to direct evidence-based practice. Thus, major findings from these psychological frameworks will be explained here along with links to current EE approaches.

Like EE, positive psychology is rooted in humanistic traditions that seek to develop the full potential of individuals, communities, and societies. Positive psychology has well-established empirical support across a range of areas (e.g., Seligman, Steen, Park, & Peterson, 2005). For example, Seligman (2011) recently expanded his *theory of well-being* to include the five pillars of positive emotion, engagement (*flow*), relationships, meaning (life purpose), and accomplishment, based on current psychological findings. These pillars are echoed in the stated processes and outcomes of EE (see Association of Experiential Education, 2013).

One way that these pillars have been applied to learning is through strength-based education. By focusing on leveraging learners' natural talents, this practice has received increasing support as a means through which educators can elicit positive emotions and engagement, enhance cognitive and behavioral learning, and increase resilience and meaning (e.g., Seligman, Ernst, Gillham, Reivich, & Linkins, 2009). The approach is based on concepts derived from Fredrickson's (2001, 2013) "broaden and build" theory of positive emotions, which demonstrates how experiencing positive emotions *broadens* a person's range of perceived cognitive and behavioral options. *Broadening* in turn *builds* longer term physical, intellectual, social, and psychological

resources. In contrast, negative emotions elicit “narrowing” effects that restrict perceived options and resources. These findings have direct implications for the use of risk and challenge, and the potential for accompanying negative emotions, in EE. Positive psychology researchers suggest that human functioning is optimized when we experience at least three positive emotions for every negative emotion (e.g., Fredrickson, 2013). This “golden ratio” has clear practical implications for educators as it has been linked with outcomes such as effective teamwork (Losada & Heaphy, 2004) and flourishing mental health (Fredrickson & Losada, 2005). Incorporating positive psychology principles, such as strength-based education, into EE practice and research may be worthwhile and effective. This integration could be achieved by, for example, (a) leveraging participant strengths to master personally meaningful and self-determined challenges; (b) using the “golden ratio” guideline; (c) focusing processing and facilitation on relationship-building, effort, and successful processes, rather than emphasizing outcomes or participant and group weaknesses; and (d) researching such practices.

Self-determination and *flow* theories identify specific mechanisms through which EE principles contribute to psychological well-being and provide clear directions for research-informed practice. SDT proposes that pursuing intrinsic goals (e.g., self-acceptance, affiliation) increases well-being and promotes learning because these goals satisfy basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 2002). In contrast, pursuing extrinsic goals (e.g., wealth, popularity) decreases well-being and learning, leads to unstable self-esteem, and interferes with need-satisfying behaviors (e.g., Sheldon, Ryan, Deci, & Kasser, 2004). In a multi-study experimental design across classroom and physical activity settings, engaging in learning behaviors with intrinsic goals such as personal growth resulted in more learning and better performance than those with extrinsic goals like money or image (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004).

Learning is optimized when framed in terms of intrinsic goals within an autonomy-supportive (versus controlling) environment. Considerable research shows that autonomy-supportive environments facilitate learning, test performance, and adjustment (Black & Deci, 2000). Conversely, controlling environments (e.g., reliance on educators’ instructions) undermine intrinsic motivation and inhibit abstract learning that requires deep information processing (Ryan & Deci, 2011). These findings support updated EE models that emphasize the importance of instructor quality and group member interactions (e.g., McKenzie, 2003). In seeking to identify facilitators of intrinsic motivation, SDT scholars also found that *nature* has a significant positive impact on vitality and well-being (Ryan et al., 2010). This body of literature (a) demonstrates that fulfillment of basic psychological needs, particularly in nature-based settings, promotes well-being and (b) identifies the necessary conditions for experiencing meaning, purpose, engagement, and positive emotions (Deci & Ryan, 2002). Undergirded by a large empirical base across a range of settings (e.g., education, health, sport, cross-cultural, neuropsychology) and validated instruments (see www.selfdeterminationtheory.org), the framework can enhance research and knowledge within EE.

Beyond psychological need satisfaction, flow theory explains why and how optimal engagement, positive emotions, perceptions of competence, and long-term learning occurs. Flow theorists contend that people enjoy, and are intrinsically motivated by, an optimal balance between perceived challenges and skills (Nakamura & Csikszentmihalyi, 2009). This balance is posited to spiral infinitely upward to continually exceed personal averages and thereby facilitate flow. Adventurous and challenging physical activities facilitate flow more readily than “everyday” settings (Csikszentmihalyi & Csikszentmihalyi, 1990). This concept was integrated into EE via the Adventure Model (Ewert & Hollenhorst, 1994) and Adventure Experience Paradigm (AEP; Martin & Priest, 1986). The AEP was developed to explain outdoor experiences in relation to risk (challenge) and competence (skill). However, empirical investigations of the AEP and flow constructs have found a high degree of congruency and similar predictive value between these models (Jones, Hollenhorst, & Perna, 2003). Despite their conceptual similarities, the flow model has a more robust empirical base, validated instrumentation, wider applicability across settings, and is linked to a range of wellness outcomes.

Recent research questions the conventional view of a singular, optimal state (i.e., *flow* or *peak adventure*) identified in flow theory and the AEP respectively. The notion of different flow states and phases associated with varying matches of challenge and skill levels, such as *telic* (serious, goal-oriented) or *paratelic* (playful, process-oriented) flow, has been supported (Houge Mackenzie, Hodge, & Boyes, 2011, 2013). These findings align with Dewey’s (1938) contention that an optimal balance of “serious” and “playful” mental states, or coupling of enjoyment with other relevant goals, is optimal for learning. These emerging flow constructs also align with current wellness models that highlight the need for balanced hedonic and eudaimonic experiences and perspectives (e.g., Ryan & Deci, 2011). Recent EE studies underscore these dialectical concepts. Sibthorp et al. (2011) concluded that learners who balance goal-relevant motivation with experience-related motivations, such as enjoyment or flow, are more likely to continue engaging in learning processes. This balance results in optimal experiences by maximizing both momentary engagement and motivation for future engagement (Sansone, 2009). As Rathunde (2010) explains, “Contexts that promote more frequent experiences of interest and flow are the same type of contexts that support—over the long term—the development of experiential wisdom” (p. 89).

These findings have important implications for EE. Psychological literature provides mechanisms and measurement tools through which to understand how and why EE may facilitate enhanced learning, growth, development, long-term engagement, and well-being. Learners may become more genuinely engaged in EE, and better able to transfer this learning to different domains, due to its emphasis on autonomous learning, development of competence and relatedness to others, and (often) nature-based context. This literature also highlights potential limitations and pitfalls of typical EE activities, such as outdoor adventure courses. Rather than perceptions of “overcoming” nature through high levels of risk, and potentially “narrowing” negative emotions, it may be opportunities to feel autonomous and connected to others and nature that account for the documented positive outcomes. These conclusions are supported

by studies that fundamentally question the centrality and sociocultural universality of risk as a learning tool (e.g., Boyes, 2013; Brown & Fraser, 2009), as well as neurological findings discussed in the next section. In summary, current psychological frameworks suggest that (a) high risks and pushing learners out of their “comfort zone” may not be as integral to EE outcomes as currently conceptualized, (b) EE activities should be freely chosen and intrinsically meaningful, and (c) successful learning depends as much upon autonomy-supportive climates and positive social, emotional, and nature-based environments as it does personal challenge. Thus, further integration of these psychological models, measurement tools, and terminology could aid the development of theory and practice in EE and provide a robust, structured explanation of *why* it works.

Emerging Paradigms and Future Directions

One exciting application of psychology to EE may lie in neuropsychology. This fast-growing field can provide biological explanations of the psychological processes underpinning EE mechanisms and outcomes. Initial research indicates that experiential learning arises from brain structure: “Concrete experiences come through the sensory cortex, reflective observation involves the integrative cortex at the back, creating new abstract concepts occurs in the frontal integrative cortex, and active testing involves the motor brain” (Zull, 2002, pp. 18-19). Anecdotally, experiential educators know their programs effect interest in learning and that actual learning often occurs. However, explicitly demonstrating how EE affects the brain could provide compelling evidence to support these programs.

Neuroscience research indicates that the brain grows (*neurogenesis*) and rewires (*neuroplasticity*) in response to typical multisensory adventure learning environments, thereby promoting resilience, learning transfer, and interpersonal relationships (Allan, McKenna, & Hind, 2012). Neuropsychological processes associated with higher order, executive functions are of particular relevance to EE. According to Funahashi (2001),

Executive function is . . . a product of the coordinated operation of various processes to accomplish a particular goal in a flexible manner. The mechanism or system responsible for the coordinated operation of various processes is called “executive control.” The prefrontal cortex [is] an important structure for executive control, since it has been reported that damage of the prefrontal cortex produces poor judgment, planning, and decision-making. (p. 147)

There are several processes that likely operate via executive control in the prefrontal cortex. Although there is some variability in the number of processes associated with executive control across the literature, there is agreement on the general domains. Pineda et al.'s (1998) five primary executive processes are representative of these domains: (a) self-regulation, (b) control of cognition, (c) temporal organization of response to immediate stimuli, (d) planning behavior, and (e) attentional control. As noted earlier, EE often has the advantage of natural environments that may provide

opportunities for optimal cognitive functioning. Although all of these executive functions are of possible interest to experiential educators, two have clear connections to existing EE research: self-regulation (including emotional control) and attention.

Both self-regulation and attention are positively influenced by natural environments. Rohde and Kendle (1994) and Bird (2007) conducted comprehensive literature reviews of psychological reactions to and mental health benefits of nature. They discovered that simply viewing nature reduces anger and anxiety, sustains attention and interest, reduces stress, and enhances feelings of pleasure. Herzog, Black, Fountaine, and Knotts (1997) found that an outdoor trip lasting only a few days decreased irritability, accidents, and mental fatigue, and improved problem-solving ability and concentration. The benefits of outdoor environments for emotional self-regulation may be particularly important for at-risk youth and youth offenders. Non-profit experiential programs for at-risk populations and researchers might make a stronger case for funding by highlighting and documenting evidence of program features linked to emotional regulation, making plans, and following through on goal-directed behaviors. With regard to executive control of attention, Taylor and Kuo (2009) asked children with attention deficit hyperactivity disorder (ADHD) to participate in 20-min walks in three settings, occurring 1 week apart and with randomized treatment order. The children concentrated significantly better after a city park walk than after a downtown or neighborhood walk. Moreover, the effect of the 20-min park walk on concentration was comparable to ADHD drug dosages for children (i.e., extended-release methylphenidate). Certainly more research is needed to corroborate these preliminary findings, but this study raises interesting considerations for EE research, evaluation, and targeted program development.

A growing body of research also highlights the cognitive benefits of physical activity (Hillman, Erikson, & Kramer, 2008; Ryan et al., 2010), a common EE feature. Castelli, Hillman, Hirsch, Hirsch, and Drollette (2011) found that children's vigorous physical activity predicted performance on cognitive tasks. These findings suggest that vigorous activities may have specific cognitive benefits over lower intensity activities among children. Kamijo, Takeda, and Hillman (2011) found that physically active young adults (vs. sedentary peers) had greater functional connectivity between brain regions during tasks requiring increased executive control. In relation to EE, these results suggest that significant improvements in cognition may result from vigorous physical activity in outdoor environments. Kamijo et al.'s study might be extended by including groups of various physical activity levels (mild, moderate, and vigorous) and comparing groups who exercise mostly outdoors versus indoors. Researchers could also randomize active adults into a typical campus fitness program and an active outdoor EE program and compare them on functional connectivity or other cognitive measures.

Europe has embraced these concepts with natural school playgrounds. In one Norwegian study (Fjortoft, 2001), students near a natural school playground demonstrated more creative play behavior than students with a traditional built playground. The study also demonstrated that children in the natural playground setting had better motor skills at the end of the school year than children in the traditional setting. Future research should extend these findings by investigating potential cognitive gains beyond motor learning, such as the concerted execution of plans to accomplish common goals

or emotional regulation of anger. In a recent review article, Staempfli (2009) outlined how adventure playgrounds—in which children can build play structures themselves with the oversight of a trained playworker—provide cognitive and social developmental benefits including problem-solving skills and social responsibility. Taken together, these preliminary findings on natural and adventure playgrounds are areas ripe for future research and program development in EE and neuropsychology.

The astute reader will note that research related to cognition and outdoor settings often relies on youth and young adult samples, mirroring a similar focus on youth development in EE. However, middle-aged and older adults present unique opportunities for EE programs and research. Aging-related brain dysfunctions and diseases that lead to cognitive declines (e.g., Alzheimer's) are serious concerns in later life and, therefore, staying fit in body and mind is of keen interest to older adults. Research indicates that older adults continue to learn, innovate, and seek new experiences even into advanced ages (Nimrod, 2011; Son, Kerstetter, Yarnal, & Baker, 2007). In fact, outdoor adventure programs with older adults have been shown to promote successful aging across physical, social, and psychological domains (Boyes, 2013). Thus, experiential educators should evaluate the demand for specialized older adult offerings that provide new cognitive challenges. To advance the state of knowledge on cognitive aspects of EE, programs could assess abilities (e.g., cognitive mapping) pre-post program to demonstrate the effectiveness of EE in improving cognition. Easy to administer pencil and paper cognitive tests (e.g., Repeatable Battery for the Assessment of Neuropsychological Status [RBANS], www.rbans.com) and computer-assisted programs for handheld electronic devices are available and could be used in EE with minimal additional preparation (e.g., laminating test sheets, waterproof cases).

In relation to the psychological frameworks presented earlier, there are neurological bases for concepts such as flow and optimal engagement, as demonstrated by functional magnetic resonance imaging (fMRI) studies showing distinct brain activity patterns in reflective versus perceptually demanding tasks and risk assessments (e.g., Goldberg, Harel, & Malach, 2006). These findings could be useful in furthering understandings of decision making, risk perceptions, and personal development in EE. The development of new technologies in electroencephalography (EEG) and neuroimaging allow us to explore questions such as: What does “engagement” look like neurologically? What are optimal challenge levels? How do experiential activities or autonomy-supportive climates enhance learning from an information processing perspective? These investigations could greatly advance the state of knowledge and evidence-based practices in EE. In summary, there is an abundance of opportunity to explore the neuropsychology of EE.

Conclusion

Across scholarly fields, investigators often have limited knowledge of complimentary research in related disciplines. Currently, EE knowledge remains largely differentiated from many core areas of psychology. This review attempts to address this gap by first outlining selected areas of convergence between current EE and psychology research

via illustrative examples, and then suggesting possibilities for future integration and development. Theoretical integration of EE findings with larger bodies of literature is important to the field on a number of levels. It allows practitioners and researchers to better explain and implement the mechanisms that promote positive experiential outcomes. It also links research and practice to complementary fields, thereby addressing complex interdisciplinary problems facing society, such as mental and physical health issues (e.g., depression, obesity), sustainability and care of the natural environment, and educational achievement deficits. Establishing a common language and linking EE frameworks with cutting-edge psychological theories and technologies will allow researchers to engage with broader scholarship and produce innovative interdisciplinary programs (e.g., integrating physical activity and science curriculum via outdoor activities). Psychologists can in turn benefit from experiential educators' engagement with unique settings, populations, and phenomena. This symbiotic integration will also address the current trend toward transdisciplinary research and programming to address complex "real-world" issues. These directions will enhance the knowledge base within EE and promote meaningful future developments.

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Note

1. Cognitive dissonance is psychological discomfort resulting from discrepancies between one's beliefs and behavior.

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