

Regular Paper

The Developmental Value of Independent Student Expeditions in Outdoor Adventure Education for Emerging Adult-Aged Participants

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Abstract

Research has articulated the benefits of autonomy in outdoor programming (e.g., Chang, 2017), and the independent student expedition (ISE) is one type of autonomous experience that has received attention across the literature. Research suggests that ISEs have the potential to foster personal growth and promote group development (e.g., Daniel et al., 2014). However, the majority of research conducted on these experiences focuses on the outcomes of participation, and much of it has been conducted with adolescents under 18 years of age. As such, less is known about the developmental affordances ISEs offer emerging adults. The purpose of this study is to re-examine unaccompanied ISE experiences utilized during outdoor adventure education programming to identify the meaningful learning occurring during this course component for emerging adult-aged participants and investigate the pedagogical mechanisms present during ISE that foster growth and development for these individuals and help them realize important developmental milestones.

KEYWORDS: *Outdoor adventure education, independent student expeditions, autonomy, emerging adults, outdoor education pedagogy*

Introduction

Outdoor adventure education (OAE) programs use a variety of pedagogical techniques to promote intrapersonal, interpersonal, and skills-based development in program participants. The cultivation of volitional autonomy (autonomy; e.g., Deci & Ryan, 2013) through the use of “experiences in which participants have a measure of choice and control over the planning, execution, and outcomes of their learning” (Daniel et al., 2014, p. 4), is one prominent technique employed by OAE programs to support student development. During OAE programming, these experiences are often sequenced so that students are offered greater autonomy and given more choices as the course progresses and they gain requisite competencies (Sibthorp et al., 2008).

Scholars have found that autonomous student experiences (ASE) in OAE are germane for learning, and proponents argue that ASE provide learning opportunities for program participants that would not necessarily be possible if lower levels of autonomy were provided (Bobilya et al., 2014; Daniel et al., 2015). The independent student expedition (ISE) is one type of ASE that has received scholarly attention (Sibthorp et al., 2008). The ISE is a distinct component of an OAE course where smaller groups of students live and travel in the wilderness unaccompanied by their instructors (Daniel et al., 2014). These experiences provide participants with opportunities to apply the technical, leadership, and risk management skills they learned throughout the course to the challenges they encounter during the experience (Daniel et al., 2014).

While OAE providers offer courses for a wide range of participants, emerging adults are a key constituency targeted by OAE programmers. Key components of OAE programming, like the ability to function autonomously and operate independently, offer pertinent developmental benefits for these 18- to 29-year-old participants (e.g., Rosanbalm & Murray, 2017). While research suggests that ISEs have the potential to foster personal growth and/or promote group development (e.g., Chang, 2021), the majority of research conducted on these experiences focuses on the outcomes of participation, and much of it has been conducted with adolescents under 18 years of age. As such, less is known about the developmental affordances ISE experiences offer emerging adult-aged participants. Consequently, the purpose of this study is to re-examine ISE experiences in OAE to identify the meaningful learning occurring during these experiences for emerging adult-aged participants and investigate the pedagogical mechanisms present during ISE that foster growth and development for these individuals and help them realize important developmental milestones.

Background

Volitional Autonomy & Self-Determination Theory

Self-Determination Theory (SDT) assumes that individuals are active organisms who strive to grow, develop, and master encountered challenges (Ryan & Deci, 2000, 2017; Ryan et al., 2016). SDT posits that healthy development occurs when an individual's basic psychological needs for autonomy, competence, and relatedness are satisfied (Ryan & Deci, 2000). SDT defines autonomy as self-governance or agency (Ryan, 1993), and as a basic psychological need, individuals desire to feel that their actions are characterized by a perceived internal locus of causality (Deci & Ryan, 2013; Ryan et al., 2016). Exercising autonomy involves engaging in self-regulated actions and exerting volitional control, and SDT research demonstrates that individuals experience more positive behavioral and psychological outcomes (e.g., increased persistence, heightened creativity, and sustained performance) when they feel more autonomous (e.g., Vansteenkiste & Ryan, 2013).

While individuals typically desire to grow and develop, features of the social environment either support or thwart an individual's tendency towards active engagement and psychological growth (Ryan & Deci, 2000, 2017). In educational settings, autonomy-supportive teaching practices are associated with positive outcomes in the classroom (Niemic & Ryan, 2009; Patall et al., 2008; Reeve & Jang, 2006). Autonomy-supportive contexts promote intrinsic motivation, emotion regulation, internalization and integration of social regulations, and buttress the identity formation process (Deci et al., 2015; Ryan et al., 2016). One specific autonomy-supportive technique educators employ is the provision of voice and choice. This practice has been shown to increase student's engagement and learning (e.g., Niemic & Ryan, 2009); however, if choices are not seen as meaningful, then they may be de-motivating (e.g., Patall et al., 2008). While autonomy-supportive teaching practices promote engagement and motivation, a challenge for

educators is balancing student's need for autonomy while simultaneously offering appropriate structure around the learning activities (Jang et al., 2010).

Independent Student Expeditions in OAE

One pedagogical tool OAE providers use to promote student learning is the ISE. The ISE (final expedition, Daniel et al., 2014 or the autonomous student expedition, Sibthorp et al., 2008) provides students with an opportunity to plan and carry out a section of their course with limited or even without direct supervision or oversight from their instructors (Sibthorp et al., 2008). Other features of the ISE include living and traveling with a small group of peers, designating a leader who oversees risk management practices and facilitates group processes, and working collaboratively with peers to surmount the obstacles encountered during the expedition (Gookin, 2015). The ISE ultimately provides opportunities for students to gain a more accurate understanding of their current abilities and limitations, to refine their self-awareness, judgment, and decision-making skills, and to complete a challenging, yet achievable task (Gookin, 2015).

Research examining ISE suggests that the educational value of ISE is high, and their effects are long lasting (e.g., Bobilya et al., 2014; Daniel et al., 2014; Sibthorp et al., 2008). Sibthorp and colleagues (2008) found that for NOLS students under 21 years of age, higher levels of reported personal empowerment and more days of ISE predicted significantly greater reported gains in leadership and outdoor skills development. In 2014, Bobilya and colleagues found that for Outward Bound participants over 18, experiencing community was noted as the most enjoyable part of their ISE, followed by feelings of accomplishment, having autonomy, and experiencing teamwork. Bobilya and colleagues ultimately concluded that experiencing autonomy during the ISE cultivated personal growth by encouraging self-reliance and self-awareness.

More recently, Chang (2017, 2021) explored the effects of the ISE on perceptions of youth autonomy and the formation of the 5Cs of positive youth development (PYD) in 25 adolescent participants taking courses offered by the Northwest Outward Bound school. Results suggested that the ISE helped adolescent participants develop self-confidence, gain technical skills and interpersonal competencies, and deepen care for fellow group members. Chang concluded that the ISE is a useful vehicle for growing and reinforcing nascent developmental outcomes gained earlier in the course.

Proponents argue that ISE provide learning opportunities for program participants that would not necessarily be possible if greater levels of instructor supervision were provided (Daniel et al., 2015). While there may be concern about participants' safety during sections of the course when instructors are not physically present, data examining unaccompanied activities demonstrates that incidents or accidents are no more prevalent during these course components than at other times when instructors are accompanying their students (Paton, 1992; Sibthorp et al., 2008).

On the other hand, some scholars question the value of ISE as there is the potential for these experiences to be mis-educative or cause physical, emotional, or psychological harm (e.g., Davidson, 2004a). Advocates of this perspective contend that OAE classrooms are inherently risky and that the risk increases when instructors are not directly supervising their students (Daniel et al., 2015). While ISEs are often legitimized by citing their pedagogical value, Davidson (2004a) argued that these experiences pose significant risks, and there are pedagogical, legal, and moral reasons why a lack of instructor supervision can never be justified. From a pedagogical standpoint, Davidson suggests that the best thing instructors can offer their students is high-quality coaching and feedback, and doing so is nearly impossible when instructors are not accompanying their students during course-related activities. The legal argument against ASE is related to negligence, as the expected standard of care is not met when trained and experienced instructors are not closely monitoring learning activities. Finally, Davidson maintained that OAE programs and instructors are morally obligated to do whatever they can to protect the stu-

dents enrolled in their courses from harm, and this moral standard cannot be met during ISE. In contradiction to the research by Paton (1992) and Sibthorp et al. (2008), which were conducted in the United States with Outward Bound and NOLS students, Davidson (2004b) found that in New Zealand, there was a greater chance of a serious incident occurring if instructor supervision was reduced or fully removed.

Outdoor Adventure Education and Emerging Adult Development

Emerging adulthood is a developmental period characterized by substantial cognitive, emotional, and social change (e.g., Rosanbalm & Murray, 2017). Important developmental milestones accomplished during this time period include refining the skills needed to cultivate healthy interpersonal relationships, taking greater responsibility for one's choices, and honing one's perceived self-efficacy across multiple domains (e.g., Scharf et al., 2004; Tanner, 2006). Arnett (2011) argues that experiencing autonomy is often crucial for realizing these developmental milestones.

OAE programs often target emerging adult-aged participants, and OAE programming offers emerging adults the opportunity to form new relationships, experience novel activities or environments, try on various identities, and learn and practice valuable technical and interpersonal skills. In addition, OAE programming often enables participants to experience increasing levels of autonomy, make consequential decisions, and endure the natural consequences of their actions or decisions as they move through the program. As such, from a developmental perspective (e.g., Arnett, 2000, 2011), emerging adult-aged participants are uniquely positioned to benefit from typical OAE programming.

In sum, the research conducted on ISEs demonstrates that these experiences have the potential to positively impact student learning during OAE programming. Empirical research suggests that the autonomy present during ISE, that is, the ability for participants to exert a measure of control over the planning and implementation of learning activities (Daniel et al., 2014), promotes personal empowerment, independence, leadership development, interpersonal learning, and engenders PYD (Bobilya et al., 2014; Chang, 2017, 2021; Daniel et al., 2014; Sibthorp et al., 2008). While the outcomes amassed during ISE are potentially valuable, scholars have not thoroughly examined the mechanisms promoting learning during this section of OAE courses and whether they foster development for emerging adult-aged participants. Therefore, the purpose of this study is to re-examine ISE experiences to identify the learning that occurs during the ISE for emerging adult-aged participants and examine the pedagogical mechanisms present during the ISE that foster growth and development for these participants and help them realize important developmental tasks. To accomplish this task, the following research questions were considered: (1) What do emerging adult-aged participants learn during their ISE?, and (2) What pedagogical mechanisms present during the ISE foster growth and development for emerging adults, and help them realize important developmental tasks?

Methods

This study used a convergent parallel mixed methods design (Creswell & Plano Clark, 2018) to inform the research questions. Convergent designs “obtain different but complementary data on the same topic” (Morse, 1991, p. 122). Qualitative and quantitative data were collected and analyzed concurrently (Creswell & Plano Clark, 2018), and after analysis, the data were merged, considered, and interpreted together (Creswell & Plano Clark, 2018). This methodological design provided us with quantitative data that allowed us to assess key features of the ISE learning environment while simultaneously providing us with qualitative data that offered specific and detailed insight into individual's ISE experiences. Ultimately, this design allowed us to develop a more nuanced understanding of the ISE experience.

Data Collection

This study was divided into two parts. Part 1 utilized on-course surveys. Data were gathered on two separate occasions using analogous paper and pencil instruments. The first instrument (PRE-ISE questionnaire) was administered before students left for their ISE, and participants provided responses to a series of closed- and open-ended questions. When completing the PRE-ISE questionnaire, participants reflected on the week prior to the ISE, assessed the learning environment, identified meaningful learning(s) and experiences, and described the factor(s) that facilitated the identified learning.

The second instrument (POST-ISE questionnaire) was administered after the students returned from their ISE. This questionnaire paralleled the first survey; however, participants reflected on their ISE experience when answering the questions. The POST-ISE questionnaire also asked participants a series of logistical questions about their ISE and invited them to take part in a semi-structured interview.

While prior literature suggested ISE experiences offer OAE students a sense of autonomy, we assessed whether this was true for our participants. We used the 8-item Basic Psychological Need Satisfaction and Frustration Scale (Van der Kaap-Deeder et al., 2020) to measure sense of autonomy. This instrument included subscales for autonomy satisfaction (e.g., *During the last week, I felt a sense of choice and freedom in the things I undertook.*) and autonomy frustration (e.g., *During the last week, most of the things I did, I felt like "I had to."*), and was scored on a 7-point Likert-type scale ranging from *do not agree at all* to *very strongly agree*.

To assess other features of the learning environment, we measured task cohesion, goal conflict with fellow coursemates, and sense of belonging. Task cohesion is defined as the shared commitment of group members to a mutual group goal (Van den Bossche et al., 2006). Task cohesion items (e.g., *During the last week, my group was united in trying to reach our goals for performance*) were taken from the task cohesion scale of the Team Beliefs and Behaviors survey (Van den Bossche et al., 2006). Goal conflict with fellow coursemates (e.g., *During the last week, I wanted different things from my NOLS semester than other people in my group*) was taken from Jostad's goal conflict scale (2015). Both the task cohesion and goal conflict with fellow coursemates items were scored on a 7-point Likert-type scale ranging from *do not agree at all* to *very strongly agree*. Sense of belonging (e.g., *Overall, how much do you feel like you belong at NOLS?*) was measured using a 5-item subscale from the Panorama Social-Emotional Learning survey (Panorama Education, n.d.). These items were scored on a 5-point Likert-type scale ranging from *not at all* to *completely*. Additional open-ended items asked participants a series of questions about their learning and experiences during the week before their ISE, which were compared to their POST-ISE responses.

Part 2 involved post-course interviews and commenced after the students returned home from their NOLS semester. We used a purposeful sampling frame (Patton, 2015) to select interviewees who offered a range of ISE experiences. We compiled a list of all the NOLS graduates who volunteered to participate in a follow-up interview. This list was cross referenced with course instructors to identify students who instructors believed had unique, challenging, impactful, or information-rich (Patton, 2015) ISE experiences. We contacted the students via email and invited them to complete a semi-structured interview.

During the interview, participants discussed their ISE experiences, the salient learning(s) gained during their ISE, the mechanisms promoting the identified learning, and the importance of the ISE to their growth and development. The semi-structured interviews were conducted over the phone, and they ranged in length from 15 to 40 minutes. Data from Part 1 were referenced during the follow-up interview as a way to ascertain the major differences between times on the course when instructors were or were not accompanying participants and to provide a platform for interviewees to expound on the answers they provided in the questionnaires.

Analysis

Sample

Data were collected from individuals aged 18-29 who participated in a 3-month NOLS semester during the spring and fall of 2020. NOLS is an international school that strives to be the preeminent “teacher of wilderness skills and leadership that serve people and the environment” (NOLS, n.d.). Data were collected from individuals who completed different semester types (e.g., Fall Semester in the Rockies; Outdoor Educator Semester) at domestic (e.g., NOLS Rocky Mountain) and international NOLS locations (e.g., NOLS Patagonia).

To qualify for this study, participants enrolled in a NOLS semester that included a multi-day ISE component at some point during the semester. While the various semester students recruited to participate in this study may have had different experiences regarding course location, environmental conditions, or course-related activities, they all experienced the NOLS core curriculum and were assessed by their instructors as having the requisite technical and interpersonal skills required for participation in an ISE.

Ultimately, 129 NOLS students from nine different NOLS semester courses, participated in this study. Of the 129 participants, 60.5% ($n= 78$) identified as male, while 39.5% ($n= 51$) identified as female. In total, 109 respondents (84.5%) completed both the PRE- and POST-ISE questionnaires. Thirteen individuals (10.1%) provided only POST-ISE data, while seven participants (5.4%) only completed the PRE-ISE questionnaire. On average, NOLS students spent approximately 6 days traveling and camping away from their instructors during ISE ($SD= \pm 2$ days; Range 2-10 days).

Results

The data were entered, then cleaned and screened to identify potential outliers and assess normality. Cronbach’s alphas were calculated to determine the internal consistency of the scales used in both the PRE- and POST-ISE questionnaires (see Table 1). Since we found no outliers and the alpha values were acceptable, we considered the data adequate for running parametric statistics. In instances when data were missing, we utilized pairwise deletion.

Table 1
Cronbach’s Alpha Values for the PRE- and POST ISE Questionnaires

PRE-ISE Questionnaire		POST-ISE Questionnaire	
Scale	Cronbach’s Alpha Value	Scale	Cronbach’s Alpha Value
Autonomy Satisfaction	$\alpha=.69$	Autonomy Satisfaction	$\alpha=.86$
Autonomy Frustration	$\alpha=.68$	Autonomy Frustration	$\alpha=.70$
Task Cohesion	$\alpha=.79$	Task Cohesion	$\alpha=.79$
Sense-of-Belonging	$\alpha=.77$	Sense-of-Belonging	$\alpha=.86$

Open-Ended Item Analysis

Before beginning the data analysis process, two coders met to analyze a selected subset of the data and generate a codebook. After generating the codebook, the two coders independently coded the data from the PRE-ISE questionnaire. After the data were coded, the two coders met again to compare their codes, resolve any discrepancies, and establish interrater reliability (IRR).

Across the two questions we analyzed for this study, there was consistency (Study IRR= 94%) between the coders in how codes were being assigned to sections of text.

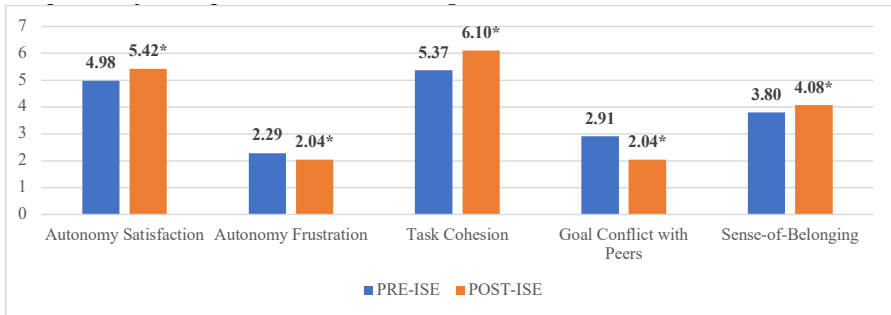
Results

Respondents reported significantly higher autonomy satisfaction ($t(107)=3.13, p=.002, d=.30$) during their ISE experience than during the week prior to ISE (see Figure 1). Moreover, participants reported significantly lower levels of autonomy frustration ($t(107)=2.47, p=.02, d=.24$) during the ISE than during the week preceding ISE.

Participants reported significantly higher levels of task cohesion ($t(107)=6.21, p<.001, d=.60$) during the ISE than during the week before the ISE began, with the ISE experience exhibiting a medium effect ($d=.60$) on students' reported task cohesion. Respondents reported significantly less goal conflict with their peers ($t(107)=4.65, p<.001, d=.45$) while participating in the ISE versus the week leading up to the ISE. In addition, participants reported significantly higher levels of sense of belonging with members of their ISE group than when they were with all of their coursemates in the week prior to the ISE ($t(108)=4.22, p<.001, d=.40$). We did not find significant differences between female- and male-identifying students on any of the measured variables at either time point.

Figure 1

Comparison of the Dependent Variables During ISE to the Week Prior to the ISE



Note. *Denotes a significant difference in mean scores

Comparing PRE- and POST-ISE Learning

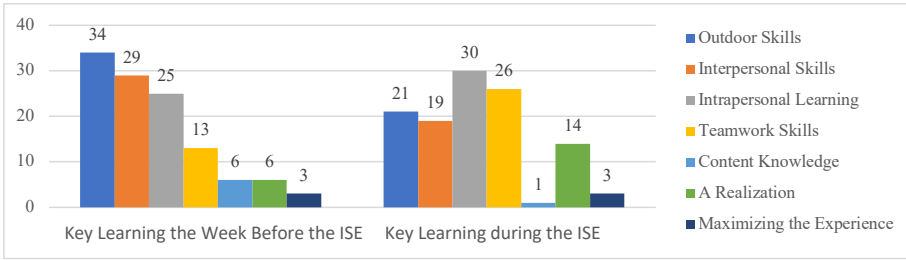
The first open-ended question asked participants to identify the most meaningful thing they learned during the week before the ISE and the most meaningful thing they learned during the ISE. During the week prior to ISE, of the 111 usable responses, outdoor skills (e.g., navigation and route finding), an interpersonal learning (e.g., how to work more collaboratively with peers), and an intrapersonal learning (e.g., increasing one's self-awareness) were the three most frequently coded categories (see Figure 2).

During the ISE experience, of the 114 usable responses, approximately 26% ($n=30$) of participants identified an intrapersonal learning (e.g., self-confidence) as being the most salient thing they learned (see Figure 2). Teamwork skills, that is, the ability to work collaboratively with group members to achieve a goal, were noted by 26 respondents. Respondents also reported learning outdoor and interpersonal skills (e.g., making a collective decision).

When comparing the data, the primary pedagogical contribution of the ISE seems to be its ability to promote both intra- and interpersonal learning (see Figure 2). Developing self-confidence in one's capabilities and self-efficacy in one's capacity to successfully address the challenges associated with the ISE were the primary intrapersonal learnings reported by participants. On the other hand, learning how to create a positive group culture, collectively solve encountered

Figure 2

Comparison of Learning from the ISE to the Week Prior to the ISE



problems, and work collaboratively to make decisions that were amenable to all group members were the primary interpersonal and teamwork skills learned during the ISE.

The Pedagogical Mechanisms Promoting Learning During the ISE for Emerging Adults

Respondents were asked to delineate the mechanism that they believed promoted their learning during the ISE. When examining the data, participant responses were classified into one overarching category, ISE structure-orientated mechanisms. ISE structure-orientated mechanisms were distinct features of the ISE experience that promoted student learning, including having the autonomy to plan activities and create structures for themselves and their group, independence from instructors, the ISE requiring more engagement from participants, the small group environment, the leadership opportunities available to students, a chance to refine one’s technical and interpersonal competencies, and peer support (see Table 2).

Table 2

Features of the ISE that Facilitate Student Learning

Feature of the ISE	Representative Quote
ISE Offers Students Opportunities to Exercise Autonomy	“The space we created as a group to have intentional conversations.”
ISE Provides Independence from Instructors	“The instructors stepping away.”
ISE Demands More Engagement and Investment from Students	“When we weren’t being asked to do things by the [Instructor]-team or the larger group, it was much more important to step up and take on more work”
ISE Enables Students to Work with a Small Group of their Peers	“Working with [the same] small groups for multiple days.”
ISE Affords Students Enhanced Leadership Opportunities	“Leadership opportunities during ISE.” or “Being assigned as an ISE expedition leader.”
ISE Provides Students with Opportunities to Refine their Technical and Interpersonal Competencies	“Without having the experience of ISE, I would never have become this self-sufficient.”
ISE Provides Opportunities for Peers to Support Each Other	“Such a great ISGE group that made me feel valuable.”

As for peer support, peer feedback (e.g., “The positive feedback I had received from my course mates [about my leadership style]” reportedly promoted learning. Peer modeling was an additional peer mechanism that helped respondents learn both technical skills and intrapersonal skills (e.g., “I would not have learned nearly as much about perseverance at NOLS if it had not been for my friends out here because watching them go keeps me going.”). Data suggested that peer modeling occurred overtly, for example, when an ISE participant would share their decision-making processes with their less experienced peers or more covertly when, for example, a more knowledgeable peer demonstrated a technique for moving through hazardous terrain.

Semi-Structured Interviews

To gain a more detailed and nuanced understanding of the learning that occurs during the ISE for emerging adult-aged participants and examine the pedagogical mechanisms that foster growth and development for these participants, we conducted semi-structured interviews with 25 students after they returned home from their semester programs.

The Pedagogical Contributions of the ISE for Emerging Adults

Interviewees were initially asked to identify the most meaningful learning that occurred during their ISE. To begin, meaningful intrapersonal learnings were gained by interviewees during their ISE. For example, one participant recognized her capabilities, “[the ISE] solidified in my mind how capable I was because I was able to do something like this on my own without an instructor.” Students reported learning resilience as they navigated the uncertainty inherent to the ISE context. As one student stated,

I feel like I learned that it’s just really important to have tolerance for adversity in the hard moments, especially when you don’t have someone who is considered older than you or higher than you to go to [if you have] questions. You need to rely on what you know and do the best that you can.

As participants learned how to better function as members of their ISE group, they gained new knowledge about themselves. For example, one participant described how she learned to operate with individuals with different leadership styles. As she noted, “I didn’t mesh with my [ISE] leader’s leading method, but that experience definitely helped me to be better around people who I don’t relate to in that way. I became more patient and more kind.”

The ISE offered participants a chance to hone their leadership capacities. For example, one interviewee noted the importance of situational leadership. As he recognized, “I learned how to [take initiative] when no one else is stepping up. And, I learned that I can shift into any leadership quality that I need.”

Interviewees regularly discussed what they learned about working as a member of a team during their ISE. For example, an interviewee noted the value of leveraging fellow group member’s strengths and finding ways to incorporate them into daily activities. He observed,

When you are the one person that is in charge of the ISE, I learned that you kind of have a choice. You could either be overbearing and you could just try and make everything done your way. Or, as I realized early on, that the people on my team knew, really knew, what to do, and I was just there to kinda facilitate everything. So, during the ISE, I didn’t feel like I needed to be an overbearing leader. I just felt like the best way to lead in that situation was to allow my team to implement their ideas.

Interviewees also learned about the importance of fully engaging in group processes. In particular, students noted the importance of involving themselves in group decision-making processes and taking them seriously. As one participant observed,

A skill that I learned was the importance of taking every decision seriously, even if it's small. Just taking the time to kind of think through it and think about the possible risks, because even if it takes like a few minutes extra it'll save you time in the long term.

The Pedagogical Mechanisms Promoting Learning during the ISE for Emerging Adults

Learning was stimulated when participants leveraged the autonomy they reportedly experienced during the ISE to enact systems or plan activities that supported group initiatives and bolstered group culture. For example, one ISE group instituted an activity they termed "campfire chats." Each evening, during these conversations, group members had an opportunity to be vulnerable and share parts of their personal experience with their ISE group. As one student noted, "I got to open up to these people and talk about some stuff that I don't normally like to talk about. Just sitting around the campfire every night, you just got close to these people, which was really amazing."

The autonomy inherent during the ISE empowered participants to organize their days and schedule them as they preferred. ISE groups utilized this autonomy to schedule opportunities for personal reflection and create space to process their experiences. As one interviewee observed, "ISE provided a space to process what I was working through while I was out there in the canyons." ISE also provided opportunities for collective reflection. As an interviewee found,

And I think during all of those breaks, we were just talking about something that had happened along the way on the course. Or, like reflecting, and you know, like, "Oh man, isn't it crazy that we did this?" Or, "How did you feel when this happened?" Those were the conversations that we had.

Independence, that is, being physically separated from instructors, was another mechanism that promoted learning during the ISE. The relative independence associated with the ISE provided students with opportunities to work collaboratively with peers to devise solutions to challenging problems and/or navigate demanding situations without having a fallback option. That is, students had to make decisions without the option of checking in with an instructor to assess the appropriateness of their decision. As one participant articulated,

I think we, in this time, have so many fallbacks. We have the internet. We have all these people and all these devices to fall back on and to ask questions, and we get an answer quickly. There's no dictionary for how to survive in the canyons. So, you gotta use your noggin. I think that having to perform in that environment helped my learning and just gave me a lot of confidence in my abilities.

In the same vein, another interviewee observed,

I think when you're constantly with instructors, especially at that point in the semester, you're doing mostly everything. But you always have that fallback. You always have, "I don't know what I'm doing. Let me ask my instructor for a little guidance." During ISE, it's all up to you. And I think that was extremely beneficial.

Interviewees discussed the importance of their ISE group members and the influence their peers, and the support they offered, had on their learning. Two distinct components of peer support that helped cultivate a positive learning environment emerged from the data, trust among group members and an ethic of care within the group. One student described how her ISE group cared for each other in this way,

ISE definitely presented us with a lot of different challenges and just being with my peers made it even more gratifying to meet those challenges together. It was just really empowering. We're capable of hiking 15 miles and working together to take care of each other...

One ISE group was composed of all female-identifying participants. Having the opportunity to complete the ISE in a gender-affinity space was very powerful for these interviewees. As one student stated,

I had never before been in a wilderness space and looked around and only saw the faces of other women, like, only seeing ourselves reflected back basically. So, being with other girls my age and doing all of this together felt hugely powerful. That was my first time having an experience like that. Yeah, I think it was the most valuable section of my semester.

The Value of ISE Experiences in OAE for Emerging Adults

After discussing what they learned and the mechanisms that produced the identified learning, interviewees were asked to explain the value of the ISE to their experience at NOLS. To begin, participants found value in having the opportunity to exercise autonomy. As one student observed, "I think the great thing about ISE is not even necessarily that there's no instructors...I think the ability to be in a small group that is relatively autonomous for a long period of time is really valuable." Another added,

On ISE, you just have a different sense of ownership. There's no higher power that you can defer to or that you can outsource your responsibility to. If there are consequences, they're your consequences. I didn't feel that at any point besides the ISE.

Ultimately, the autonomy offered by the ISE helped participants make "connections with the people [they were] with and with themselves" while simultaneously allowing them to "apply the skills they learned" to the individual and collective challenges they encountered.

The independence experienced during the ISE impelled students to employ the myriad outdoor, interpersonal, and intrapersonal skills they learned throughout the semester without having the option of receiving feedback or admonition from their instructors. As one interviewee noted, "I think the ISE gave me a taste of putting all of the skills I learned into practice and feeling like I could be independent in the outdoors." Another noted that the ISE "helped me better understand what kind of decisions I would have to make and feel like I was prepared to make those decisions." Having to perform skills without instructor feedback or guidance was ultimately a valuable tool for bolstering participants' self-efficacy and self-confidence.

Data suggested that ISEs facilitate deep learning. Deep learning was promoted as participants employed the knowledge and skills they learned across their semester. As one student observed, "I think ISE is a really cool way to take all the things that we learned and absorbed from the school part of NOLS and put them into practice. It built a lot of confidence in me and [made me feel] really competent." Most interviewees saw the ISE as a potent vehicle for solidifying newly learned knowledge and skills rather than a time for acquiring new knowledge. This sentiment was succinctly captured by one interviewee,

It was less of like I learned this thing, and more of a solidifying of all of the things that I had learned over the rest of the semester. They became more concrete when I was putting them into practice on my own.

Another interviewee noted, "It just solidified in my mind how capable that my group and I were. We were able to do something like this on our own without an instructor."

Discussion

The purpose of this study was to re-examine ISE experiences to identify the learning that occurs during them for emerging adult-aged participants. In addition, we also examined the pedagogical mechanisms present during the ISE and assessed how they fostered participant's growth and development.

Scholars have highlighted the effects of the educational climate on student learning in OAE (e.g., D'Amato & Krasny, 2011; Orson et al., 2020). To assess the educational climate of the ISE, we gathered data measuring autonomy satisfaction, autonomy frustration, task cohesion, goal conflict with peers, and sense of belonging and compared it to participants' responses about their experiences during the week leading up to the ISE. These data suggested that during the ISE, participants experienced significantly higher levels of autonomy satisfaction, significantly lower levels of autonomy frustration, significantly greater task cohesion, significantly less goal conflict with peers, and significantly higher levels of sense of belonging with fellow ISE group members. Participants reported feeling that the ISE context gave them opportunities to make meaningful choices and structure activities in ways they found appealing and engrossing. Data indicated that participants perceived the ISE to be autonomy-supportive, and this, coupled with high levels of reported task cohesion and feelings of belonging, fostered interest, intrinsic motivation, and engagement with ISE-related tasks and activities. These findings align with SDT-related research conducted in educational settings (e.g., Ryan et al., 2016).

The Pedagogical Contributions of ISE for Emerging Adults

Past research has found that students feel empowered when they are provided an appropriate measure of autonomy (e.g., Sibthorp et al., 2008). While participants did not regularly report gaining new knowledge or skills during the ISE, many students perceived the autonomy associated with the ISE as crucial for consolidating their learning. That is, the ISE provided participants opportunities to practice, solidify, and connect the learnings they gained across their NOLS semester, and impelled them to apply their newly attained knowledge to the challenges encountered during the ISE. For these emerging adult-aged participants, one particular pedagogical strength of the autonomy synonymous with the ISE appears to be its ability to crystallize or reinforce participants' learning and development. These findings are congruent with Chang's (2017) conclusions that ISE is a useful vehicle for growing and reinforcing nascent learning and developmental outcomes.

The ISE groups that reported a more positive group culture often leveraged the autonomy present during the ISE to promote group formation and development. Consequently, one of the key tasks for ISE groups is learning how to productively use the autonomy they experience during the ISE. While there may be individual students who understand group dynamics and techniques suitable for promoting group formation, it would behoove both programs and instructors who facilitate ISE experiences to thoughtfully discuss its importance and teach their participants this valuable skill set.

Finding the proper balance between managing inherent risk and offering opportunities for learning through challenging endeavors is difficult in our risk-averse society (Daniel et al., 2015). Daniel and colleagues (2015) suggested modifying instructor presence during ISE by having instructors shadow ISE groups or meet them at hazards. These schemes may be one way to minimize the risk associated with unaccompanied wilderness travel. Yet, when participants were asked whether they believed the consequential learnings garnered during the ISE could have been gained if instructors were present, the majority of participants noted that they did not think their learning or realization would have occurred had instructors been present.

The Pedagogical Mechanisms Promoting Learning during the ISE for Emerging Adults

Results indicated that the most salient pedagogical mechanism for promoting learning during the ISE was ISE structure-orientated mechanisms. That is, the unique affordances of the ISE experience itself were the key factor in promoting participant learning. Three ISE structure-orientated mechanisms emerged from the data, autonomy, independence, and peer support.

Data showed that students often leveraged the autonomy associated with the ISE to structure their group culture as they saw fit and enact norms or rituals that promoted a sense of belonging among group members and inspired team cohesion. In addition, students capitalized on the autonomy present during the ISE to experiment with different leadership styles and leadership structures or utilize various group decision-making approaches.

Research from the educational psychology (e.g., Eccles et al., 1993) and youth development (e.g., Lerner et al., 2014) paradigms have examined how the overall fit between individuals and the environment(s) they inhabit affects their behavior and motivation. Eccles and colleagues (e.g., Eccles et al., 1993) proposed the Stage—Environment Fit Model, which suggests that students' behavior and motivation are impacted by the fit between the characteristics individuals bring to their social environment and the features of the social environment itself. Individuals will likely be motivated and perform well in social environments that meet their psychological needs (Eccles et al., 1993). When congruence exists between an individual and their environment, individual functioning is facilitated, and learning and development are likely to occur (Eccles et al., 1993). Data collected from this study suggested that there was a good fit between the developmental readiness of participants and key features, like the provision of autonomy, of the ISE environment. The stage—environment fit experienced by participants during the ISE may be one of the reasons why this section of participants' NOLS semester was valued, held in high esteem, and ultimately responsible for promoting participants' reported learning and development.

During the ISE, the support structure was dramatically upended. Students could no longer ask an instructor whether their intended decision was the best option for the situation at hand. In these instances, participants were required to rely on their collective wisdom and work collaboratively to address the challenge they were experiencing. The independence associated with the ISE experience provided participants with opportunities for independent learning. Independent learning is a type of self-regulated learning where learners have "ownership and control over their learning" (Livingston, 2012, p. 89), and the educational literature suggests that the independence offered through self-regulated learning activities supports critical thinking, promotes motivation, self-confidence, self-regulatory capabilities, and leverages interest and curiosity to cement learning (e.g., Meyer et al., 2008). The self-regulated learning opportunities offered by the ISE experience helped participants reinforce previously learned knowledge and better understand the limits of their current technical and interpersonal skill sets. Moreover, it promoted resourcefulness and provided opportunities for students to share their knowledge with peers. Data suggested that having to enact newly learned skills in a self-regulated learning environment bolstered participants' confidence and self-efficacy in their technical skill sets, interpersonal competencies, and intrapersonal abilities.

The peer support enacted by participants during the ISE was commonly exercised to support group development and cultivate a positive learning environment. Peer support was buttressed as ISE groups worked with the same group of coursemates for consecutive days. This enabled participants to address factors, like task cohesion and sense of belonging, that supported group development (Van den Bossche et al., 2006), and data suggested that the majority of ISE groups established structures or facilitated activities that cultivated interpersonal connections among group members. As the organizational psychology literature suggests (e.g., Van den Bossche et al., 2006), these activities support group functioning, help participants achieve group-level goals, and lead to higher levels of group performance.

The Developmental Affordances of the ISE for Emerging Adults

The ISE offered many developmental affordances for these emerging adult-aged participants. SDT posits that autonomy is a basic psychological need, and individuals typically want their actions to be characterized by a perceived internal locus of causality (Deci & Ryan, 2013;

Ryan et al., 2016). During the ISE, participants reported higher levels of autonomy satisfaction. When individuals feel more autonomous, they tend to experience more positive behavioral and psychological outcomes (Vansteenkiste & Ryan, 2013). In these data, the positive behavioral and psychological outcomes reported by participants included increased persistence while navigating difficult circumstances, the ability to devise solutions to novel problems, or heightened creativity when implementing community formation activities.

Experimentation and exploration are processes associated with development for emerging adults (e.g., Arnett, 2011). Participants indicated that the ISE provided many opportunities for participants to try different leadership styles, communication patterns, and group roles. Refining interpersonal and communication skills as a means to cultivate healthy relationships is a key developmental task for this population (Rosanbalm & Murray, 2017). During the ISE, interpersonal and communication skills were reportedly practiced as participants delineated values and goals for their ISE teams and worked collaboratively to make decisions that were amenable to all group members. Indispensable intrapersonal skills like demonstrating persistence while experiencing hardship and enacting strategies to manage stress or tolerate uncomfortable situations are also important developmental tasks for emerging adults (e.g., Rosanbalm & Murray, 2017), and participants portrayed them as valuable outcomes of their ISE. Importantly, peers played an active role in supporting their fellow ISE group members who were experiencing a stress reaction or were challenged by a difficulty encountered during the ISE experience. Data suggested that peer support became more salient during the ISE as it fulfilled an important role in an environment where instructors were not physically present. In sum, data from open-ended questionnaire items and semi-structured interviews suggested that the autonomy offered during the ISE was valuable to these emerging adult-aged participants who were developmentally primed to benefit from these experiences.

The Costs Associated with ISE

While the autonomy afforded participants during their ISE experience was beneficial for many students, there were instances where students detailed experiencing sexism or interpersonal conflict with fellow ISE group members. While they appeared infrequently, these experiences dramatically altered the learning environment for those individual participants. As Davidson (2004a) observed, problems during ISE often occur when groups are dysfunctional, use poor decision-making strategies, or do not work well together. When these factors are present, the ISE experience may be miseducative or cause physical, emotional, or psychological harm (e.g., Davidson, 2004a). While participants did not report experiencing physical harm due to negative ISE group dynamics, toxic group dynamics did exact an emotional and psychological toll on some participants. For these participants, the ISE was something that was endured or survived rather than something that promoted learning and development.

Limitations

The primary limitation of this study was its use of self-report data. The accuracy of the reported results and conclusions depends entirely on participants being able to precisely identify and attribute key learning and development to the ISE experience itself.

A secondary limitation is the sample population. NOLS semester students might differ from other emerging adults due to their choice to enroll in a NOLS semester. Data collection occurred during the COVID-19 pandemic, which heightened the separation of socioeconomic (SES) classes. Individuals with means, like the participants in this study, could leave their homes and engage in experiences like this, while those in lower SES stratum or those who are members of vulnerable populations, for example, individuals with pre-existing health conditions, may not have had the opportunity to take part in a NOLS semester course during the data collection

period. In addition, the quarantines, schooling in virtual classrooms, and limited social interactions experienced during the pandemic may have intensified individuals' desire for autonomy and biased their responses to the survey and interview questions.

Third, NOLS semester courses are expensive. While NOLS offers scholarships to qualifying students, the expenses associated with attending a NOLS semester course may be a barrier for many prospective participants. Consequently, the learning garnered from these experiences may only be available to a certain subset of the emerging adult-aged population.

Fourth, the majority of participants, especially those who participated in the semi-structured interviews, had positive experiences during their ISE. While the purposeful sampling frame used to recruit semi-structured interview participants was designed to identify participants who had both positive and negative experiences during their ISE, a self-selection bias may have obfuscated experiences that were negative or miseducative.

Conclusion

Daniel et al. (2014) noted that the ISE originated during a different sociocultural and historical era; consequently, its applicability to modern learners needs to be continually reassessed. Data from this study suggested that the ISE offered by NOLS remains useful for today's emerging adult-aged OAE students. The autonomy associated with the ISE helped these participants refine the skills needed to cultivate healthy interpersonal relationships, take greater responsibility for their actions and choices, and hone their perceived self-efficacy across multiple domains. The learning tasks associated with the ISE required participants to think critically, solve complex problems, work collaboratively, communicate effectively, and take advantage of self-regulated learning opportunities. When combined, the ISE is a valuable tool for promoting learning and development for emerging adult-aged OAE participants as they are developmentally primed to benefit from the key features inherent to the ISE environment.

References

- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469-480. <http://dx.doi.org/10.1037/0003-066X.55.5.469>
- Arnett, J. J. (2011). Emerging adulthood(s): The cultural psychology of a new life stage. In J. A. Lene (Ed.), *Bridging cultural and developmental approaches to psychology: New synthesis in theory, research, and theory* (pp. 255-275). Oxford University Press.
- Bobilya, A. J., Kalisch, K. R., & Daniel, B. (2014). Participants' perceptions of their Outward Bound final expedition and the relationship to instructor supervisory position. *Journal of Experiential Education*, 37(4), 397-414. <http://dx.doi.org/10.1177/1053825913510693>
- Chang, Y. (2017). Exploring the Effect of Autonomous Student Experiences on Positive Youth Development. (Unpublished Doctoral Dissertation). Indiana University, Bloomington, IN.
- Chang, Y. (2021). Engaging in autonomous learning in the outdoors: Final expedition and youth autonomy. *Journal of Outdoor and Environmental Education*, 24(2), 191-214. <http://dx.doi.org/10.1007/s42322-021-00077-8>
- Creswell, J., & Plano Clark, V. (2018). Core mixed methods designs. In J. W. Creswell & V. L. Plano Clark (Eds.), *Designing and conducting mixed methods research* (3rd ed., pp. 51-100). SAGE Publications.
- D'Amato, L. G., & Krasny, M. E. (2011). Outdoor adventure education: Applying transformative learning theory to understanding instrumental learning and personal growth in environmental education. *The Journal of Environmental Education*, 42(4), 237-254. <https://doi.org/10.1080/00958964.2011.581313>

- Daniel, B., Bobilya, A. J., Kalisch, K. R., & McAvoy, L. H. (2014). Autonomous student experiences in outdoor and adventure education. *Journal of Experiential Education*, 37(1), 4–17. <https://doi.org/10.1177%2F1053825913518892>
- Daniel, B., Bobilya, A. J., & Mullert, M. (2015). *Should Wilderness Staff Always Accompany their Groups? Three Views*. Paper presented at the Association of Outdoor Recreation & Education, Atlanta, GA.
- Davidson, G. (2004a). Unaccompanied activities in outdoor education: When can they be justified? *New Zealand Journal of Outdoor Education: Ko Tane Mahuta Pupuke*, 1(4), 1–10.
- Davidson, G. (2004b). Fact or folklore? Exploring “myths” about outdoor education accidents: some evidence from New Zealand. *Journal of Adventure Education & Outdoor Learning*, 4(1), 13–37. <http://dx.doi.org/10.1080/14729670485200401>
- Deci, E. L., & Ryan, R. M. (2013). The importance of autonomy for development and well-being. In B. Sokol, F. Grouzet, & U. Müller (Eds.), *Self-regulation and autonomy: Social and developmental dimensions of human conduct* (pp. 19–46). Cambridge University Press. <http://dx.doi.org/10.1017/CBO9781139152198.005>
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents’ experiences in schools and in families. *American Psychologist*, 48(2), 90–101. <https://doi.org/10.1037/0003-066X.48.2.90>
- Gookin, J. (Ed.). (2015). *NOLS wilderness educator notebook*. National Outdoor Leadership School.
- Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, 102(3), 588–600. <http://dx.doi.org/10.1037/a0019682>
- Jostad, J. (2015). A dynamical systems theory examination of social connections in outdoor recreation programs. (Unpublished doctoral dissertation). The University of Utah, Salt Lake City, UT.
- Lerner, R. M., Wang, J., Chase, P. A., Gutierrez, A. S., Harris, E. M., Rubin, R. O., & Yalin, C. (2014). Using relational developmental systems theory to link program goals, activities, and outcomes: The sample case of the 4-H study of positive youth development. *New Directions for Youth Development*, 144, 17–30. <https://doi.org/10.1002/yd.20110>
- Livingston K. (2012). Independent learning. In N. M. Seel (Ed.), *Encyclopedia of the sciences of learning* (pp. 1526–1529). Springer. https://doi.org/10.1007/978-1-4419-1428-6_895
- Meyer, B., Haywood, N., Sachdev, D., & Faraday, S. (2008). *Independent learning*. Learning and Skills Network, Research Report DCSF-RR051. https://www.associationforpsychologyteachers.com/uploads/4/5/6/6/4566919/independence_learning_lit_review.pdf
- Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40(2), 120–123. <https://doi.org/10.1097/00006199-199103000-00014>
- Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, 7(2), 133–144. <http://dx.doi.org/10.1177/1477878509104318>
- NOLS. (n.d.) *About our mission*. <https://nols.edu/en/about/mission/>
- Orson, C. N., McGovern, G., & Larson, R. W. (2020). How challenges and peers contribute to social-emotional learning in outdoor adventure education programs. *Journal of Adolescence*, 81, 7–18. <http://dx.doi.org/10.1016/j.adolescence.2020.02.014>
- Panorama Education. (n.d.). *Panorama social-emotional learning survey*. <https://www.panoramaed.com/social-emotional-learning-sel>
- Patall, E. A., Cooper, H., & Robinson, J. C. (2008). The effects of choice on intrinsic motivation and related outcomes: a meta-analysis of research findings. *Psychological Bulletin*, 134(2), 270. <http://dx.doi.org/10.1037/0033-2909.134.2.270>

- Paton, B. (1992). Health, safety, and risk in Outward Bound. *Journal of Wilderness Medicine*, 3(2), 128–144. <http://dx.doi.org/10.1580/0953-9859-3.2.128>
- Patton, M. Q. (2015). *Qualitative evaluation and research methods* (4th ed.). Sage.
- Reeve, J., & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology*, 98(1), 209–218. <https://doi.org/10.1037/0022-0663.98.1.209>
- Rosanbalm, K. D., & Murray, D. W. (2017). *Caregiver co-regulation across development: A practice brief* (OPRE Brief #2017-80). Office of Planning, Research, and Evaluation, Administration for Children and Families, US. Department of Health and Human Services.
- Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy, and the self in psychological development. In J. Jacobs (Ed.), *Nebraska Symposium on Motivation: Developmental perspectives on motivation* (Vol. 40, pp. 1–56). University of Nebraska Press.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology* 25(1), 54–67. <http://dx.doi.org/10.1006/ceps.1999.1020>
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. The Guilford Press. <https://doi.org/10.1521/978.14625/28806>
- Ryan, R. M., Deci, E. L., & Vansteenkiste, M. (2016). Autonomy and autonomy disturbances in self-development and psychopathology: Research on motivation, attachment, and clinical process. In D. Cicchetti (Ed.), *Developmental psychopathology: Theory and method* (Vol. 1, pp. 385–438). John Wiley & Sons, Inc. <http://dx.doi.org/10.1002/9781119125556.devpsy109>
- Scharf, M., Mayseless, O., & Kivenson-Baron, I. (2004). Adolescents' attachment representations and developmental tasks in emerging adulthood. *Developmental Psychology*, 40(3), 430–444. <https://doi.org/10.1037/0012-1649.40.3.430>
- Sibthorp, J., Paisley, K., Gookin, J., & Furman, N. (2008). The pedagogic value of student autonomy in adventure education. *Journal of Experiential Education*, 31(2), 136–151. <http://dx.doi.org/10.1177/105382590803100203>
- Tanner, J. L. (2006). Recentering during emerging adulthood: A critical turning point in life span human development. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 21–55). American Psychological Association. <http://dx.doi.org/10.1037/11381-002>
- Van den Bossche, P., Gijssels, W. H., Segers, M., & Kirschner, P. A. (2006). Social and cognitive factors driving teamwork in collaborative learning environments: Team learning beliefs and behaviors. *Small Group Research*, 37(5), 490–521. <http://dx.doi.org/10.1177/1046496406292938>
- Van der Kaap-Deeder, J., Soenens, B., Ryan, R. M., & Vansteenkiste, M. (2020). *Manual of the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS)*. Ghent University, Belgium.
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23(3), 263–280. <https://doi.org/10.1037/a0032359>