Do Intense Work Experiences Influence Growth Mindset, Emotional Intelligence and Knowledge Creation and Sharing?

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We examined the impact of participating in Wilderness Conservation Corp (WCC) leadership development program on crew members' emotional intelligence (EI), knowledge management/sharing (KM), and growth mindset (GM) during one summer of intense wilderness crew work activity. We found that low EI crew members experienced significant increases in emotional intelligence as the result of their experience. We also found that crew members that measured low in EI increased their perceptions of knowledge creation and sharing (KM) in the WCC organization after the experience. Finally, we found that those crew members with a more fixed mindset moved towards a significantly more growth mindset.

Keywords: Emotional Intelligence, Intensity, Knowledge Sharing, Leadership Development

INTRODUCTION

Outside of most scholarly organizational behavior and management literatures, there seems to be an assumption that intense experiences provide rich contexts for individual and group development. Conventional wisdom seems to be that the stress of novel, high stakes situations that include physical, emotional, and cognitive challenges are where we learn about ourselves and the relationships with those around us. These intense situations can arise naturally in the work environment through such things as high-stakes team projects or they can be created in training programs. For example, outdoor adventure-type programs for executive and employee development have increased in prominence over the years (Dainty, Lucas, & Development, 1992). One of the expected outcomes of such training programs has been the development of "other and self-awareness" (Dainty et al., 1992). These training experiences are usually intended to encourage self-awareness, leadership abilities, and team building through a combination of intense experiences and facilitated self-reflection.

In this paper, we present the results of a field study that looks specifically at changes in growth mindset, emotional intelligence, and perceptions of knowledge management within the context of a leadership development program that involves an intense group work experience. Specifically, we found that these three factors can be positively affected as the result of an intense work experience.

The current study contributes to existing research in two important ways. First, it considers factors that have not been studied in the earlier research – specifically the effect of intense experiences on

participants' emotional intelligence, growth mindset, and their perceptions of organizational knowledge management. Additionally, prior research has considered intense experiences only in the context of training and development situations. This field study takes place in the context of an authentic work situation, rather than as part of a training exercise only.

This exploratory field experiment obtained data from members of work crews participating in a privately-funded conservation service organization, where they worked on projects in a variety of outdoor and wilderness settings in the western United States. The Wilderness Conservation Corps (WCC) sends crews of five high school or college students into the wilderness of the Pacific Northwest with two crew leaders. These seven-member work crews spend up to four weeks in the wilderness together, backpacking into remote locations, sleeping in tents in grizzly bear country in order to build trails, clear downed trees, and build leadership skills. WCC provides crew leaders with 14 weeks of leadership training prior to leading a crew. The training helps leaders learn how to facilitate discussions, mediate conflicts, promote supportive communication and motivate struggling crew members. The intense WCC experience provides participants with the opportunity to increase their levels of emotional intelligence (EI), knowledge creation and sharing (KM) and develop a Growth Mindset. We will examine the impact of the WCC experience by measuring these constructs before and after crew members' participation.

Although there has been significant research on intelligences beyond memory and problem solving (Piaget, 1954; Thorndike & Stein, 1937), Goleman's (1995) best-selling book, *Emotional Intelligence*, ignited the attention of management researchers seeking to determine the power of non-cognitive intelligence to predict or explain organizational phenomena. EI has been defined in many ways, but the concept has generally focused on the ability to manage one's own emotions and the emotions of others to assist in one's thinking, action and decision-making (Mayer, DiPaolo, & Salovey, 1990).

In the knowledge-based view of the firm, internal resources and capabilities, such as worker know-how, designs, customer knowledge, and efficient processes, are the keys to achieving sustainable competitive advantage (Boisot, 1998; Grant, 1996). Knowledge resources are highly valuable, unique to the organization, difficult to copy and are difficult to substitute (Barney, 1991; Boisot, 1998). Those organizations that are able to manage knowledge more effectively than their competitors will be able to achieve competitive advantages (Boisot, 1998; Kogut & Zander, 1992). Empirical work supports this notion that higher levels of knowledge sharing are associated with higher levels of organizational performance. The intensive time that a work crew spends together provides multiple opportunities for knowledge sharing about the organization as well as practical skills in survival and conservation work.

Carole Dweck and her research associates (C. S. Dweck, 2006; Mueller & Dweck, 1998; Yeager & Dweck, 2012) have pioneered the research on growth mindset. People with a fixed mindset believe that talent and intelligence are fixed at birth and don't really change over time (C. S. Dweck, 2006). In contrast, people with a growth mindset believe that with hard work and practice they can learn or do almost anything (Yeager & Dweck, 2012). The intensive nature of the WCC experience exposes crew members to many new experiences including survival in the wilderness and working together with others to accomplish conservation projects. By being pushed outside their comfort zones, this experience should increase crew members' growth mindsets.

This paper examines the impact of an intense summer work experience on a WCC work crew and specifically how it affects perceptions of knowledge sharing, growth mindset and emotional intelligence.

LITERATURE REVIEW AND HYPOTHESES

Intense Experiences

There have been numerous investigations into the outcomes associated with intense training experiences. A meta-analysis of OAE (Hattie, Marsh, Neill, & Richards, 1997) showed significant positive effects across many variables, including:

- Emotional stability
- Internal locus of control
- Social competence

- Cooperation
- Interpersonal communication

While useful, the studies included in this comprehensive meta analysis fall short in two important ways. First, they do not include specific concepts that have developed in the management literature in recent years, including Emotional Intelligence, Knowledge Management, and Growth Mindset. Second, they have focused on the role of intense experiences in educational and training situations and not in the context of ongoing intensive work experiences.

As stated above, the numerous studies of the effects of outdoor adventure education generally show positive effects for these experiences across a range of factors. However, the specific causal factors are seldom discussed; rather, the authors of the studies present the training experience as a bundle of activities designed to raise awareness of one's self and others. These can include such things as "ropes courses," extended Outward Bound courses, white-water rafting, etc. There is an assumption in the design of these experiences that participants will benefit from the intensity of the experience, although they do not explicitly define what it is that makes an experience intense.

We propose two sets of component factors for what makes an experience intense in this context: Situational intensity and group intensity.

Factors related to situation intensity include:

- Novelty – the degree to which an experience places participants in unfamiliar situations
- Mentally challenging – the cognitive difficulty of the problems faced by participants
- Physically challenging – the physical difficulty of the tasks and activities faced by participants
- High stakes – the importance of the outcomes or goals of the activities
- Emotional – the activity has the potential for raising one's emotions, such as fear, empathy, or happiness.

Factors related to group intensity include:

- Interdependence – the degree to which the activities rely on the performance of all group members
- Duration – the length of time of the activities
- Proportion of time together – the proportion of activity time spent with other group members

While not all intense group activities will include all factors, we propose that an intense experience will include at least some of these factors. Likewise, there may well be other factors related to intensity, but this list is a good starting point for conceptualizing intense group experiences.

Emotional Intelligence (EI)

There have been several incrementally different definitions of emotional intelligence (EI) (Bar-On, 2007; Goleman, 1995, 1998) and the popular definition provided in Goleman's book, *Emotional Intelligence* (1995). However, Salovey and Meyer's (1990) original definition, the ability to deal with one's own emotions and those of others to advantage in problem solving and decision making, has endured and has served as the foundation for much of the research in this area. This definition, though modified and extended to include general emotional effectiveness through the centrality of reasoning regarding emotional processes (Mayer, Salovey, & Caruso, 2004) serves as the theoretical foundation for the assessment instrument utilized in our study (Wong & Law, 2002). Wong and Law's (2002) Wong Law Emotional Intelligence Scale (WLEIS) instrument assesses four dimensions of EI: self-emotional appraisal (SEA); others' emotional appraisal (OEA); and regulation of emotion (ROE); and use of emotions (UOE). Researchers have described EI as composed of four separate dimensions (Salovey & Mayer, 1990):

1. SEA relates to an individual's ability to understand his or her deep emotions and the ability to express these emotions naturally. People with high ability in this area will sense and acknowledge their emotions well before most people. SEA includes items like "I have a good

sense of why I have certain feelings most of the time" and "I have a good understanding of my own emotions."

2. OEA captures the ability to perceive and understand the emotions of other people. People who are high in this ability are much more sensitive to the feelings and emotions of others—resulting in almost reading their minds. OEA includes items like "I always know my friends' emotions from their behavior" and "I am a good observer of others' emotions."
3. ROE addresses the ability to regulate one's own emotions, and higher levels of ROE enable a more rapid recovery from psychological distress. ROE includes items like "I am able to control my temper and handle difficulties rationally" and "I am quite capable of controlling my own emotions."
4. UOE captures the ability of individuals to make use of their emotions by directing them towards constructive activities and personal performance. UOE includes items like "I always tell myself that I am a competent person" and "I am a self-motivated person." UOE allows individual to harness their emotions to accomplish goals.

We used Gross' model of emotion regulation (Gross, 1998) as a foundation for understanding the effect of EI on organizational outcomes. Gross defines emotions as "adaptive behavioral and physiological response tendencies that are called forth directly by evolutionarily significant situations" (1998, p. 272). Gross (1998) defines emotions as response tendencies that can be modulated—thus, can be regulated and managed. Emotion regulation refers to "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (1998, p. 275). Gross' definition of emotion regulation fits with Mayer and Salovey's (1990) definition of EI. Before people can effectively regulate their emotions, they need to have a good understanding of their emotions (SEA). Since many of our emotional responses are influenced by the emotions of others, understanding our own emotions is directly influenced by our ability to understand others' emotions (OEA). Gross' (1998) emotion regulation model suggests that we have the ability to modulate how we experience emotions (ROE), as well as how we express them (UOE). Combining the concepts of EI and emotional regulation, persons with high EI should be more able to modulate their response tendencies and have more effective emotion regulation processes. As a result, Gross' model of emotional regulation appears to be a reasonable theoretical basis for our investigation of the effects of participating in the summer wilderness program on EI.

Jordan, Ashkanasy, and Hartel (2002) found that experiential learning is particularly well suited to helping individuals develop their emotional abilities. There is also evidence from a case study in the healthcare industry, a work environment that can be quite intensive, that emotional abilities can be developed through learning in the workplace (Clarke, 2006). Similarly, the intensive nature of the WCC experience provides many opportunities for surfacing emotions. Crew members are working in novel situations that challenge them physically and mentally and require them to work and live together constantly. The intensity of this situation can provide frequent opportunities for regulating one's own emotions and recognizing the emotions of others. Additionally, crew leaders are trained to intentionally look for opportunities to develop the leadership and interpersonal skills of the crew members. This takes the form of actively managing conflicts between crew members as well as identifying and working on negative behaviors that inhibit the crew's effectiveness. To help them do this, crew leaders receive 14 weeks of intensive leadership training to prepare them to lead the work crews (Stober, 2017). The leadership skills in the training include: Leadership Theory, Emotional Intelligence, Personality Differences, Supportive Communication, Managing Conflict, Motivation, Problem Solving, Team Dynamics and Ethics. This highly intensive work experience, which provides a natural laboratory for recognizing and regulating one's emotions, coupled with crew leadership focused on the development of their crew members, should lead to an increase in the emotional intelligence of the crew members. This leads to the following hypothesis:

Hypothesis 1: *WCC Crew Member Emotional Intelligence will increase during the course of the summer.*

Knowledge Creating and Sharing (KM)

The knowledge-based view of the firm builds largely on the resource-based view of the firm and argues that knowledge is the key resource capable of creating sustainable competitive advantages (Grant, 1996). In the knowledge-based view of the firm internal resources and capabilities, such as worker know-how, designs, customer knowledge and efficient processes, are the keys to achieving sustainable competitive advantage (Boisot, 1998; Grant, 1996). Knowledge resources are an especially valuable category of resources and meet Barney's (1991) criteria for resources capable of providing sustainable competitive advantages. Knowledge resources are highly valuable, unique to the organization, difficult to copy and are difficult to substitute (Boisot, 1998; Barney, 1991). Those organizations that are able to manage knowledge more effectively than their competitors will be able to achieve competitive advantages (Boisot, 1998; Kogut & Zander, 1992).

Organizational knowledge includes all the tacit and explicit knowledge that individuals possess about products, systems and processes and the explicit knowledge codified in manuals, databases and information systems. Organizational knowledge also includes the tacit knowledge that is shared collectively in the firm in the form of routines, culture and know-how (Boisot, 1998; Crossan, Lane, & White, 1999; Nonaka, 1991). If knowledge is the key firm resource capable of creating a sustainable competitive advantage, then it is important to examine how firms manage knowledge processes. There are many processes that researchers have identified, but they tend to fall into one of three main categories: creating (Crossan et al., 1999; March, 1991; Nonaka, 1991), sharing (Grant, 1996; Nonaka, 1994; Szulanski & Jensen, 2006) and exploiting knowledge (March, 1991; Nonaka, 1994).

There is a growing amount of empirical work on organizational knowledge. Most of the research on organizational knowledge has been case studies or qualitative interviews attempting to define knowledge and identify key dimensions (Boisot, 1998; Nonaka, 1994). The difficulty in defining the knowledge construct and operationalizing it has hampered research efforts. However, there have been some recent studies that have begun to address this shortcoming in the literature: stocks and flows of knowledge (Bontis, Crossan, & Hulland, 2002); knowledge transfer barriers (Serenko & Bontis, 2016); and internal stickiness of knowledge (Szulanski, Ringov, & Jensen, 2016).

The knowledge-based view of the firm suggests that higher levels of knowledge creation and sharing will be associated with higher levels of performance. In this study we examine knowledge sharing of individual crew members and whether this changes over the course of the summer. The crews are engaged in intense work situations in that they are working on novel tasks that are physically challenging. Additionally, their work is potentially dangerous if group members do not behave appropriately, making this a high-stakes work situation. The crew depends upon each other for survival from the weather, bears, and avoiding physical injury on the job.

The work also has a dimension of high group intensity. Crew members spend a very large proportion of their time together, often 24 hours per day for weeks at a time, and have to find ways to express their emotions and opinions and positively resolve conflicts. The interdependence of the members of the group also contributes to the intensity of the experience. We know from earlier research that the transfer of tacit and procedural knowledge can be even more effectively accomplished through workplace (experiential) learning than traditional training techniques (Enos, Kehrhahn, & Bell, 2003). The social interactions leading to this situated learning may very well be amplified as the work intensity increases. This high level of situational and group intensity should provide strong motivation for crew members to share knowledge. Crew leaders also actively share knowledge about the WCC mission, the details of the specific conservation project (e.g., trail building, trail clearing, tree removal, etc.) while at the same time share knowledge about managing emotions, communication and conflict which builds trust in the leader and (SmaliukienĖ, BekeŠIenĖ, Chlivickas, & Magyla, 2017).

The emotional intelligence literature suggests that emotional intelligence impacts a variety of important organizational outcomes, and may be foundational to the effective utilization of other competencies in the pursuit of desirable organizational outcomes (Goleman, 1995; Mayer et al., 2004). Organizational knowledge sharing is one such desirable organizational attribute. Emotional intelligence, with its emphasis on affective abilities, impacts an individual's ability to communicate and share

knowledge effectively. Researchers have found that the ability to perceive one's own and others' emotions as well as the ability to use that emotional knowledge will facilitate the sharing of organizational knowledge (Brown, Bryant, & Reilly, 2006).

This leads to the following hypothesis:

Hypothesis 2: *WCC crew members with higher levels of EI will also have higher perceptions of knowledge creation and sharing in WCC.*

GROWTH MINDSET

Carole Dweck and her research associates (C. S. Dweck, 2006; Mueller & Dweck, 1998; Yeager & Dweck, 2012) have pioneered the research on growth mindset. Originally conceptualized as "fixed mindset entity theory" and "incremental theory", Dweck has renamed the concepts "Fixed Mindset" and "Growth Mindset", and that is how they will be referred to throughout the paper. People with a fixed mindset believe that talent and intelligence are fixed at birth and don't really change over time (C. S. Dweck, 2006). In contrast, people with a growth mindset believe that with hard work and practice they can learn or do almost anything (Yeager & Dweck, 2012). People with a fixed mindset tend to avoid failure and difficult challenges, since failing is a reflection on their character and self-identity—they are a "failure" if they are unsuccessful at a task. People with a growth mindset relish challenges, strive to learn from failure, and consistently see new opportunities to grow and develop their skills—and if they fail, they simply believe they haven't succeeded yet. Dweck has found that people with a growth mindset are willing to work harder, stay motivated longer, and tend be more successful overall (C. S. Dweck, 2006).

Most of the research on growth mindset has been in the context of formal educational settings. However, recently, the concept has been applied to other organizational and business settings. Indicative of this are several Harvard Business Review articles that apply the growth mindset concept to organizational settings (C. Dweck, 2014; Gino & Staats, 2015). More specifically (Caniëls, Semeijn, & Renders, 2018) found that growth mindset, proactive personalities, and transformational leadership interact to affect employee engagement. In a similar vein, Keating and Hesling (2015) propose mechanisms for creating higher levels of employee engagement by developing employees' growth mindset.

Growth mindset has also been investigated in the context of intensive outdoor experiences. (O'Brien & Lomas, 2017) explored how growth mindset can be fostered during an intensive Outdoor Personal Development (OPD) course. They posit that the challenging, unfamiliar nature of these courses present opportunities for participants to confront their fixed or growth mindsets. Facilitators and leaders can then intervene to promote growth mindsets. They found that such interventions did, in fact, lead to an increase in growth mindset relative to a control group that received no such intervention.

Members of WWC work crews participate in training on leadership skills and relationship building. Crew leaders receive 14 weeks of leadership training and actively work to develop leadership and relationship skills in their crew members. In addition to actively working on emotional intelligence and effective communication skills, crew leaders have the opportunity to help crew members process the new experiences in the wilderness. For some crew participants this is their first time living in the wilderness for extended periods of time. For other crew members, they may have experience with backpacking in the wilderness, but haven't participated with a team to engage in conservation projects. This provides every leader and crew member with exposure to many significant new, intensive experiences during the course of the summer.

Interestingly, most crew leaders and members come in with a growth mindset. This shouldn't be particularly surprising since WCC participants have volunteered to live in the wilderness for weeks at a time, purposely opening themselves up to new challenges. This level of exposure to the elements including hail storms, rain, cold, sleeping in tents, grizzly bears and hard physical labor requires a certain amount openness to new experience just to sign up for the program. Participating in the WCC program under the direction of a leader trained to encourage individual and team development should help crew

members develop resilience, a better work ethic and a belief in themselves that they can accomplish more than they ever expected. They push their bodies to their physical limits while managing relationships with crew members at the same time. These novel, challenging, and potentially high stakes experiences provide crew members with opportunities to achieve things beyond what they initially thought they were capable of. In those instances where they fall short, they have the opportunity to reflect on the failures and learn from them. This should increase the growth mindset of crew members. This leads naturally to the following hypothesis.

Hypothesis 3: *WCC Crew members will increase their level of growth mindset over the course of the summer.*

METHODS

Sample Description and Size

Approximately 180 Wilderness Conservation Corps (WCC) crew leaders and crew members participated in the study. We have complete data for 148 crew members who completed the survey at the beginning of the summer and at the end of the summer. Participants provided basic demographic data including gender, age and length of the WCC program.

Variables

Emotional Intelligence

We used Wong and Law's (2002) WLEIS scale to assess four theoretically supported dimensions (Mayer and Salovey, 1997) of EI: self-emotional appraisal (SEA); others' emotional appraisal (OEA); use of emotions (UOE); and regulation of emotion (ROE). The WLEIS uses a 7-point Likert scale to measure the dimensions of EI. The 16 item EI_ALL scale had a Cronbach's alpha = 0.87 and Mean = 5.67. The four subscales also had high Cronbach's alphas that ranged from 0.73 to 0.88. A factor analysis using principle component analysis yielded a four-factor model with the 16 items loading cleanly on the four factors as predicted by the scale. The means and correlations are presented in Table 1.

Knowledge Creation and Sharing

We used the 10-item scale developed by Bryant to measure perceptions of knowledge creation and sharing behaviors (Bryant, 2005). These scale items assess knowledge creation and sharing at the group and organizational level. Six items assessed creating knowledge (e.g., "My firm's workers constantly generate new ideas", "My firm does all it can to launch new products and services"). Four items assessed sharing knowledge (e.g., "Members of my team actively talk with each other and share knowledge"). The 10-item knowledge scale had a Cronbach's alpha = 0.90 and $M = 3.92$.

*Growth Mindset***:**

Growth Mindset and Fixed Mindset are measured using (C. S. Dweck, 2006) a three-item self-evaluation of entity fixed mindset (C. S. Dweck, 2006). The higher the score the higher the level of agreement with a growth mindset.

Demographics

We controlled for gender, age and length of WCC program in weeks.

TABLE 1
DESCRIPTIVE STATISTICS AND CORRELATIONS FOR STUDY VARIABLES

	M	*s.d.*	1	2	3	4	5	6	7	8
1. Sex	1.47	0.50								
2. Age	19.36	4.09	0.101							
3. Program Lgth	11.36	8.06	0.089	.831**						
4. T1 EI_ALL	5.69	0.63	0.11	-.253**	-.187*					
5. T1 Knowledge	3.92	0.53	0.055	-0.094	0.038	.365**				
6. T1 Growth Mindset	4.61	1.09	0.067	0.006	-0.004	0.116	-0.032			
7. T2 EI_ALL	5.81	0.68	0.027	-.253**	-.253**	.623**	.258**	0.081		
8. T2 Knowledge	4.25	0.56	0.133	-.216**	-0.12	.346**	.330**	0.007	.389**	
9. T2 Growth Mindset	4.67	1.25	0.113	-0.048	-0.01	0.129	0.017	.460**	0.137	0.111

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
n = 148
T1 is at the beginning of the WCC experience
T2 is at the end of the WCC experience

RESULTS

Hypothesis 1

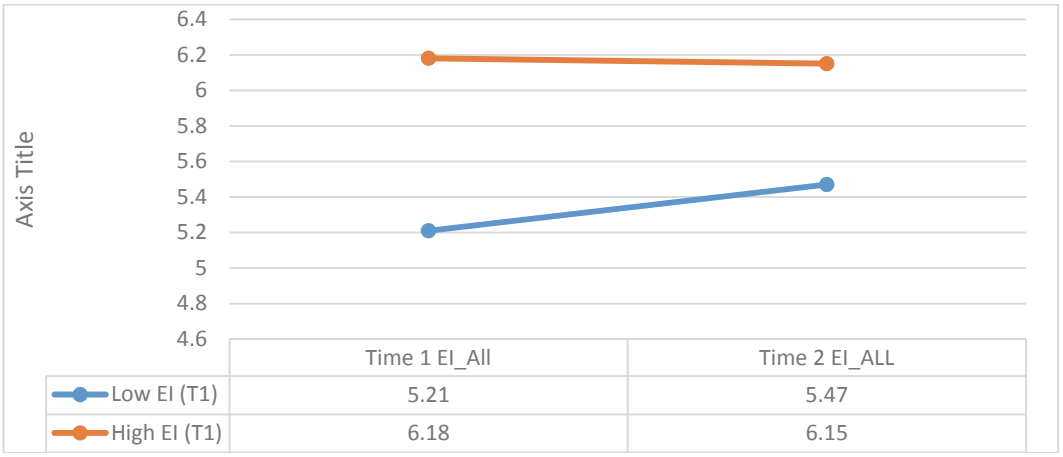
Hypothesis 1 predicted that participating in the WCC experience would increase perceptions of the level of emotional intelligence. We tested this hypothesis with repeated measures ANOVA. The ANOVA compared the Low EI group to the High EI group before and after the WCC experience. A repeated measures ANOVA comparing the Low EI and High EI groups at Time 1 and Time 2 indicated that there was a significant increase in perceptions of EI for the Low EI group, (F (1, 140) = 117.76, MS_{error} = 9117.76, $p < .001$), such that EI levels are significantly higher after the WCC experience (see Table 2). The Low EI group mean increased from 5.21 to 5.47 out of 7 (7 = high). The High EI group was nearly unchanged from Time 1 to Time 2 and did not reach statistical significance (See Figure 1). There was a significant interaction between the WCC experience and the High EI/Low EI groups, suggesting that at Time 2 there was a significant difference between the two groups, such that the High EI group had significantly higher EI than the Low EI group (F (1, 145) = 32.45, MS_{error} = 20.02, $p < .001$).

TABLE 2
ANOVA RESULTS FOR THE EFFECT ON EI AT TIME 1 AND TIME 2

Source	SS	df	MS	F
Between	93.75	147		
Sex	.26	1	.26	.74
Age	.04	1	.04	.12
Program Length	.28	1	.28	.82
Low EI vs. High EI	43.42	1	43.42	124.81***
Error	49.75	143	.35	
Within	23.86	148		
WCC Experience (Time 1 to Time 2)	.02	1	.02	.15
WCC Experience X Sex	.11	1	.11	.69
WCC Experience X Age	.08	1	.08	.52
WCC Experience X Program Length	.37	1	.37	2.44
WCC Experience X Low/High EI	1.58	1	1.58	10.44**
Error	21.70	143	.15	
Total	117.61	290		

***p < .001.

FIGURE 1
WCC CREW EL CHANGE BY TIME EL LEVEL



Hypothesis 2

Hypothesis 2 predicted that crew members with higher levels of EI would also perceive higher levels of knowledge creation and sharing. We tested this hypothesis using hierarchical regression. Model 1 only included the control variables and explained a significant amount of variance (R^2 = .07, F (3, 144) = 4.43, p < .01). Only age was significant in Model 1, but it was not in Model 2 (See Table 3). Model 2 added emotional intelligence to the model, which resulted in a significant increase in the predictive strength of the model (ΔR^2 = .11, ΔF (1, 143) = 19.75, p < .001). Model 2 predicted a significant amount of variance (R^2 =.17, F (1, 143) = 8.70, p < .001). In support of Hypothesis 2, emotional intelligence was a significant and positive predictor of self-perceptions of knowledge creation and sharing behaviors (β = .41, p < .001). This suggests that individuals' higher perceived levels of emotional intelligence contributed to higher perceived levels of knowledge creation and sharing behaviors.

TABLE 3
REGRESSION RESULTS FOR PREDICTING KNOWLEDGE CREATION AND SHARING AT TIME 2

	Model 1 (β)	Model 2 (β)
Controls		
Sex	0.17	0.15
Age	-0.05*	-0.03
Length of Program	0.01	0.00
Time 2 Emotional Intelligence (All)		.41***
Model Summary	adj. R^2 = .07 F = 4.43** df = 3, 144	adj. R^2 = .17 F = 8.70*** df = 4, 143

[a]Unstandardized regression coefficients are reported.

*p < .05; **p < .01; ***p < .001.

n = 148

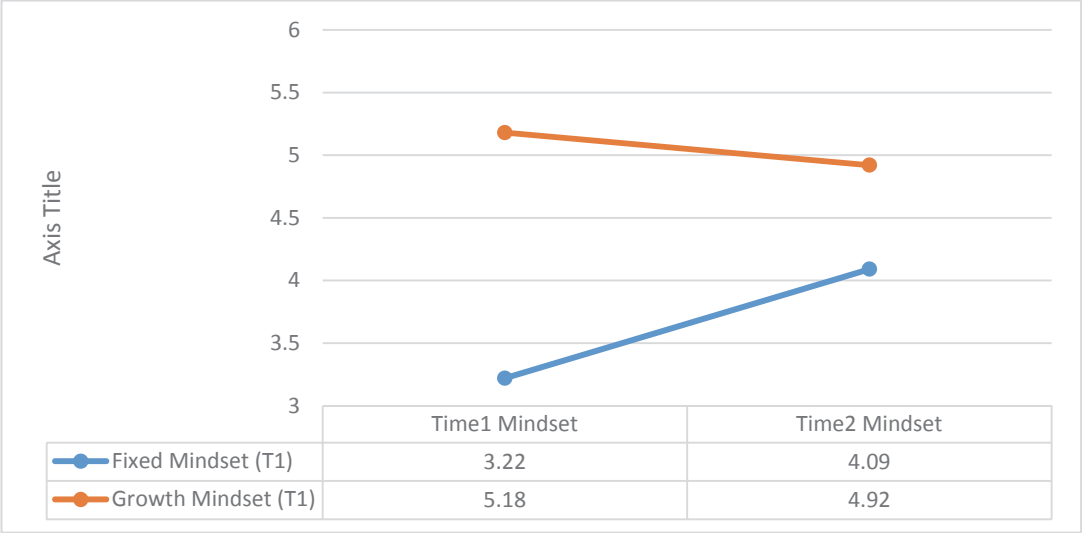
Hypothesis 3

Hypothesis 3 predicted that participating in the WCC experience would increase crew members' growth mindsets. We tested this hypothesis using repeated measures ANOVA (See Table 4). The ANOVA compared mindset before and after the WCC experience. A repeated measures ANOVA compared the Fixed Mindset group to the Growth Mindset group before and after the WCC experience. The ANOVA indicated that there was a significant increase in mindset for the Fixed Mindset group, (F (1, 140) = 100.13, MS_{error} = 117.76, p < .001), such that average growth mindset levels are significantly higher after the WCC experience (see Table 4). The Fixed Mindset group mean increased from 3.22 to 4.09 out of 6 (6 = high). The Growth Mindset group actually decreased a little from Time 1 to Time 2 but not significantly. There was an interaction between the WCC experience and the High KM/Low KM groups, suggesting that at Time 2 there was a significant difference between the two groups, such that the High KM group had higher levels of KM than the Low KM group (F (1, 140) = 32.45, MS_{error} = 20.02, p < .001).

TABLE 4
ANOVA OF THE EFFECT OF THE WCC EXPERIENCE ON MINDSET AT TIME 1 AND TIME 2

Source	SS	df	MS	F
Between	285.86	145		
Sex	.56	1	.56	.48
Age	1.22	1	1.22	1.03
Program Length	1.48	1	1.48	1.26
Fixed Mindset vs. Growth Mindset	117.76	1	117.76	100.13***
Error	164.64	140	1.78	
Within	108.50	145		
WCC Experience (Time 1 to Time 2)	.52	1	.52	.85
WCC Experience X Sex	.97	1	.97	1.57
WCC Experience X Age	.53	1	.53	.85
WCC Experience X Program Length	.10	1	.10	.16
WCC Experience X Fixed/Growth Mindset	20.02	1	20.02	32.45***
Error	86.36	140	.62	
Total	394.16	290		

FIGURE 2
WCC CREW GROWTH MINDSET CHANGE BY TIME 1 MINDSET



DISCUSSION

Implications for Theory and Research

This study examines the changes in growth mindset, emotional intelligence and knowledge sharing perceptions of wilderness work crews over the course of the intensive summer wilderness work experience. These intensive experiences are analogous to high intensity team-building organizational retreats like ropes courses, white-water rafting trips and other physically demanding activities. The WCC summer experience also has much in common with highly stressful work environments such as those experienced by healthcare workers, pilots, police, and surprisingly, information technology support personnel who are responsible for keeping websites up, networks running, and point-of-sale systems

operating around the clock. Because these intense environments have the potential to help team members grow individually and as a team, it is important to examine factors that influence this development.

In this study we have examined the impact of this intense summer WCC experience. We found that participating in the WCC crew results in significant changes to the participants. As a result of leaders intentionally building interpersonal skills and the nature of the wilderness experience itself, crew members grow in their capacity for emotional intelligence, growth mindset and knowledge sharing behaviors.

Hypothesis 1 predicted that crew members would increase their level of emotional intelligence as a result of participating in the WCC summer experience. Results suggest that all crew members did not experience a significant increase in EI. However, when we divided the crew members into two groups of Low EI (below the mean) and High EI (above the mean), we found a significant increase for the Low EI group (T1 Mean = 5.21 and T2 Mean = 5.47). Interestingly the High EI group actually declined slightly from 6.18 to 6.15, although this was not a statistically significant change. This result suggests that after the WCC experience crew members were more able to recognize their own emotions, others' emotions and regulate them for more productive relational outcomes. This result also suggests that people can improve their level of emotional intelligence through intensive training and work experiences that explicitly address improving their ability to understand and manage their emotions.

Hypothesis 2 predicted that higher levels of emotional intelligence in crew members would be associated with higher levels of knowledge creation and sharing. Regression results support a positive significant relationship between EI and KM, such that the higher the crew member's level of EI the higher their perceptions of knowledge creation and sharing behaviors. This result suggests that organizations that work on increasing the emotional intelligence of their employees can expect to see increase in knowledge creation and sharing behaviors in addition to higher levels of EI.

Hypothesis 3 predicted that crew members would increase their growth mindset level as a result of participating in the WCC summer experience. Interestingly growth mindset levels did not change overall for all crew members. However, when we divided the crew members into Fixed Mindset and Growth Mindset groups at the beginning of the summer (Time 1), then we can see that the Fixed Mindset group increased significantly during the summer from 3.22 to 4.09. This group changed on average from a Fixed Mindset to a Growth Mindset as a result of the summer WCC experience. There was no statistically significant change in the Growth Mindset group, although the mean decreased slightly over summer from 5.18 to 4.92. Perhaps these crew members received a more realistic assessment of their mindset, but still ended the summer with a solidly growth mindset. This result suggests that intense team building experiences such as the WCC summer experience can actually increase the level of Growth Mindset in participants. Employees with a growth mindset are more open to new experiences, learning new things, adapting to changes, and to finding new solutions to problems. The belief that working harder makes you smarter allows employees with growth mindsets to increase their efforts to solve problems. Overall these results suggest that participating in intensive work situations like the WCC summer experience can result in significant personal growth in emotional intelligence, growth mindset and knowledge creation and sharing.

Limitations and Need for Future Research

This study has several limitations which it shares with most other field studies of human resource development. First, the independent and dependent variables were collected using the same survey instrument although at different times. The independent variables (EI) were collected at the beginning of the summer and the dependent variable (KM) was collected at the end of the summer, which should limit any variance due to common method bias. Second, the sample consisted of high school and college students who were participating in an intensive summer wilderness experience. While these participants share many characteristics with practicing managers, the crew members are not managers. This exploratory field study was also limited in that there was no control group included in the study. It is possible, although seemingly unlikely, that a control group that did not participate in an intense work situation would have experienced similar changes due only to the passage of time.

The intensity of the WCC experience is also unique in its length, physical and emotional demands, and focus on building interpersonal skills. There are work settings with similar characteristics, but perhaps intense training experiences may be more analogous to the conditions work crews encountered in this study. This limits our ability to generalize these results. Although these limitations are valid, we believe that the exploratory nature of the study and the promising result are sufficiently compelling to support future study. Future research could examine how the intensity level of the experience and other contextual factors impact EI, KM and GM. Further investigation of the specific characteristics of intense experiences should also bear fruit. For example, is novelty a critical factor for promoting individual development, or are high stakes situations more critical? Better knowledge of these factors will allow manager and trainers to incorporate appropriate experiences into their development plans.

Management Development Implications

This study suggests that participating in intense team building experiences can help build growth mindset, increase emotional intelligence and knowledge creation and sharing. While the WCC experience is somewhat unique in its incorporation of living in the wilderness with a small team for weeks at a time, there are parallels that can be drawn to more typical team experiences. Organizations regularly have teams participate in off-site team building exercises. This study suggests that intentionally working on interpersonal skills as part of the experience can pay dividends. Interestingly, the length of the program did not seem to make much difference for the WCC participants. Participants in one week programs showed as much change as those in three or four week programs. The good news is that organizations can have employees participate in week long or perhaps even weekend experiences that can have the same positive impacts on EI, GM and KM. Another way managers can incorporate these results into their development plans is to incorporate a debrief that allows team members to reflect on the intense experience they have just experienced.

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