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## **Kilimanjaro: A Case of Meaningful Adventure And Service Learning Abroad**

*Cathy Cavanaugh, PhD*  
Microsoft Corporation (USA)  
*Ewa Gajer, PhD*  
Higher Colleges of Technology (UAE)  
*John Mayberry, PhD*  
University of the Pacific (USA)  
*Brendan O'Connor, MEd*  
Higher Colleges of Technology (UAE)  
*Jace Hargis, PhD*  
Chaminade University Honolulu (USA)

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### **Abstract**

*This qualitative evaluation explored how female undergraduate students developed an understanding of themselves and the broader world as a result of an adventure and service learning experience in Tanzania, Africa. The project built upon theoretical frameworks regarding meaningful learning—active, constructive, intentional, and authentic—and applied activity theory as a framework for interpreting outcomes. The study included multi-faceted examination of student perceptions of the effects of the year-long experience that culminated in a ten day trip to Tanzania, including a climb to the summit of Mount Kilimanjaro. Students' reflections on the impacts of the trip focused on wanting, doing, reflecting, and relating. Thus, the experience catalyzed change in students' understanding of the world that strongly indicates a meaningful learning experience.*

**Keywords:** Learning abroad, Adventure learning, Activity theory, Meaningful learning

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**I**nstilling the capacity in graduates for teamwork, problem-solving, intercultural understanding, and global awareness has been central among the goals of higher education as articulated by employers and government agencies in recent years (Partnership for 21st Century Skills, 2009; UNESCO, 2000; UAE MOHESR, 2007; AAC&U, 2011). Learning experiences provided by undergraduate colleges that have a liberal education approach align well with these goals. A liberal education prepares graduates to “deal with complexity, diversity, and change” (AAC&U,

2011, p.3) by integrating knowledge of the world and social responsibility into a field of study. These capacities must be developed in authentic contexts that counter the “natural habitat” of many urban college students: indoors, using devices, traveling in climate controlled transport through very little green space, and exercising in gyms (US Department of Labor, 2013). Stretching students outside of their comfort zone provides experiences that counteract “nature-deficit disorder” (Louv, 2005).

Structured educational travel experiences, including adventure learning trips, have become a strategy used in colleges and universities for developing valuable personal growth (Sterling, 2010). There are many benefits reported for student wilderness travel, such as increased awareness of one’s current group, surroundings, and the experience itself. It also leads to a mindfulness due to a focus on the experience as well as formation of supportive long-term bonds and results in increased college retention, improved self-awareness (Torsney, 2008), and raised global engagement (Paige, 2009).

Nine students from a women’s college in the United Arab Emirates (UAE) chose a climb of Mount Kilimanjaro to mark the 25th anniversary of their college, becoming the first team of Arab women to reach the summit. This article reports the impact of the adventure and service experience in Tanzania, Africa and how it impacted the personal transformation of the group of female Emirati undergraduate students. Qualitative analysis of interview data was used to explore how the team experienced personal transformation in their understanding of themselves and their world as a result of the climb and the associated service project at a Tanzanian school.

### **Literature Review**

Adventure learning experiences may focus on personal growth and support the formal learning outcomes of the academic curriculum. In research, adventure learning participants have reported personal impacts from the challenging experiences in nature that comprise planned adventure learning in education (McKenzie, 2000; Marsh, 2008). For example, outcomes of an Outward Bound course included increased self-confidence, expanding personal limits, and increased respect for others (Martin & Leberman, 2005) as reported by participants.

Relevant to our women’s college, women’s adventure programs have been associated with increased personal growth, tolerance, self-esteem, confidence, as well as acquisition of technical skills and improved level of participation in leadership development (Stone & Petrick, 2013). In addition, girls who participated in a wilderness program gained a sense of strength and determination, and a feeling of accomplishment and pride (Whittington, 2006). Intensive short-term study abroad of two weeks or less includes adventure travel and has been found to result in similar or stronger educational and personal impacts on participants (Alexander, Bakir & Wickens, 2010). Expedition-based learning specifically has been shown to significantly increase measurable personal abilities, organizational skills, overall effectiveness, stress management, openness in thinking, time efficiency, and coping with change (Greffath, Meyer, Strydom & Ellis, 2011). The opportunities for growth generally benefit all students, regardless of income, although most international study travel participants are wealthy (Lewin, 2009). The documented effects of adventure learning align well with the college’s goals of preparing graduates through “learning by doing” for leadership, independent learning, global citizenship, and communication.

Participants in our adventure travel program were fully sponsored for travel expenses and specialized gear. The program combined both challenge-based and service components, the former involving an intensive climb to the summit of Mount Kilimanjaro, and the latter

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involving a service project for the local community in Tanzania. The service learning component aligned with best practices identified for short-term learning abroad programs, which recommend connection with the local community (Spencer & Tuma, 2007), and was a central element to the trip in that it was an example of charitable giving (Zakat) pillar of students' Islam faith. Service learning standards from the National Youth Leadership Council (2008) recommend that service learning: engage participants in meaningful and personally relevant service activities; meet learning goals; incorporate multiple challenging reflection activities that prompt deep thinking and analysis about oneself and one's relationship to society; and promote understanding of diversity and mutual respect among all participants.

The theoretical framework for the evaluation study was based on the concept of meaningful learning proposed by Jonassen, Peck, and Wilson (1999). Recent advances in brain research have emphasized how students' affective neural networks lead to determinations of importance regarding learning and thereby lead to motivation, engagement, and commitment to the learning process (Rose & Meyer, 2002). Such meaningful learning results in students who are capable and independent learners. In this challenge-based learning project, meaningful learning by college students was a means to the end result of developing professionals and citizens who can responsibly deal with complexity, diversity, and change.

Meaningful learning, as a construct within this study, refers to learning that is active, constructive, intentional, and authentic. It "includes reciprocal intention—action—reflection activities," as proposed in Jonassen's (2000, p. v) activity theory, and occurs when learners find meaning in the context of solving novel problems (Rose & Meyer, 2002). This includes the following four components:

1. Active learning engages learners in cognitive effort, facilitated by transactions (Merrill, 1992) designed to guide the learner toward acquisition of specific knowledge and skills. It occurs within an interpersonal, collaborative, learning community and depends on learner interactions with mentors, with resources, and with peers within the context of a meaningful task.
2. Constructive learning in college education requires the development of new skills through both reflection and metacognition for transfer to contexts beyond the classroom (Jonassen, Howland, Moore, & Marra, 2003). Adopting new skills, which may be unfamiliar and uncomfortable, is a process that leads to conceptual change. The role of the adventure experience is to accelerate that process through immersion in a novel and challenging situation.
3. For intentional learning, the goal is to support students as they embark on a path as lifelong learners and citizens who value continuous development. Lifelong learners acquire a level of self-regulation that enables them to identify goals and to plan experiences to fulfill those goals. Engaging challenges can help learners articulate an intentional learning purpose (Jonassen, 2000). Adventure learning is particularly useful in providing a rationale for learning and fostering the motivation needed to connect learning to personal goals.
4. Authentic learning recognizes that complex and ill-structured tasks require practice in meaningful, real-world situations. The inclusion of an adventure experience fits into the continuum of higher education by immersing students in situations away from home where they must persevere with appropriate scaffolding.

Our primary goal in this study was to address the following questions-

1. How do college adventure travel participants perceive and describe their trip-related experiences; and
2. What personal growth do participants report as a result of the adventure and service experiences?

## **Research Method**

### **Setting**

The recruitment and training of participants was conducted at a mid-sized, urban, women's college in the Middle East. The challenge-based and service-learning portions of the project took place in Tanzania, and included a hike to the summit of Mount Kilimanjaro and a trip to a local government school. This comprised of both formal and informal settings, indoors and outdoors, and a variety of interactions with people, places and cultures.

The expedition lasted for ten days. The climb itself took eight days; a six day ascent and a two day decent. The participants, led by Tanzanian guides, camped each night in tents at designated sites, carried their own day packs, and had virtually no communication with the outside world. They experienced different climatic zones such as tropical rain forest, desert, and Arctic like conditions in the last two days of the climb.

After the climb, the participants were exposed to the local culture through a visit to a village, the Maasai market and a short safari. The students had raised \$10,000 USD as a charitable gift and had an opportunity to visit a government school in Arusha, Tanzania where they met with the pupils, head teachers and other officials and decided how the money would be spent. They equipped the school with a chemistry lab and contributed to the furniture fund.

### **Participants**

Participation in the project was voluntary and open to all students in the college. The project occurred in stages over an academic year. At the start of the academic year, in September, the college invited students to attend an informational session about the proposed climb of Mount Kilimanjaro and the associated service project. Promotional messages and videos were shown on screens around the campus. The library displayed material about the site, and lead faculty for the trip visited classes to discuss the trip with students. Initially, 90 students expressed interest, and about half that number attended information sessions with faculty and the adventure travel company that arranged the climb. As an Arab woman, the travel company founder was able to discuss the conditions of the trip, the preparation and commitment needed, and the cultural issues students might face. Students shared trip details with their families, including the requirements to participate in regular physical training, team meetings, and the service component. Following an overview meeting with families, faculty, college leaders, and the travel company leader, approximately 15 students returned documents for participation prior to the mid-year holidays. These students began weekly outdoor physical training both on and off campus. They also attended periodic meetings, including sessions focused on climbing gear. As the training became more rigorous, the student team reduced to ten members plus the three college staff. Prior to the trip, one student left the team due to family commitments, resulting in a student team of nine.

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The nine students who comprised the team are described as-

- Muslim, native Arabic-speakers;
- Aged 19-32 with a median age of 21 years;
- Bachelor's degree-seeking students in years one to four of their programs in media, business, information technology, and engineering;
- Mostly unmarried (8 unmarried, 1 married);
- Full time undergraduate students;
- Working (4 students) and not employed (5 students);
- Urban residents of the national capital city, population 600,000;
- Inexperienced in wilderness activities such as camping; and
- Eight of nine traveling to Africa for the first time (few had travelled outside of the Middle East)

### **Data Collection**

The study employed a qualitative evaluation design (Patton, 2002) of narrative analysis based on interpretivist approaches proposing that the impact of an experience is directly related to how meaningful it is to the participants (Schwandt, 2003). The source of data about the students' experiences as a result of the year-long adventure-learning experience was a collection of semi-structured interviews (Patton, 2002) conducted one month after the students returned from travel. These interviews explored how participants reflected on the adventure experience including dispositional development related to their ideas about the trip as an agent of change in their lives. Interviews were conducted with all student participants by the authors who organized and facilitated the trip, thereby helping students to feel comfortable in responding to the questions. All interviewees voluntarily participated in the trip and interview. Thirty-minute semi-structured interviews were used to ask participants a range of questions (see appendix) that fit into the following general categories.

- 1) What motivated them to go on the trip (Motivation)
- 2) How they prepared for the trip (Preparation)
- 3) How they felt about the service component of the trip (Charity)
- 4) How they felt about other members of the team (Team Dynamics)
- 5) How they perceived Tanzania (Impressions of Tanzania)
- 6) How they experienced the mountain climb (Climb)
- 7) Whether and how the experience had changed them (Reflections)

### **Data Analysis**

Content analysis of combined transcripts from recorded interviews was performed using the software program nVivo, Version 10. A reduction and sense-making process (Patton, 2002) was used to code and recode similar responses into nodes until reoccurring themes and sub-themes began to emerge. This traditional procedure was initiated by performing a word frequency query (by context – including specializations) for frequently occurring items. Nodes were then created for the top 11 items in the query, which included all items with a weighted percentage of > 1% in the source documents. Subsequently, pairwise Jaccard correlations (Jaccard, 1912) were computed between nodes to use as weights in the computation of a cluster dendrogram for the 11

nodes based on the complete-link algorithm (Defays, 1977). This process allowed the four primary themes to be identified within the 11 nodes. A similar algorithm was used to create an inter-question dendrogram for the seven questions asked of participants. To identify sub-themes and obtain a more detailed model of growth related activities, question responses were further coded into 27 nodes based on sub-topics within each area of questioning. This list of nodes was cross-referenced with the four primary themes. This process allowed the 15 sub-themes within the four primary themes to be identified.

### Results

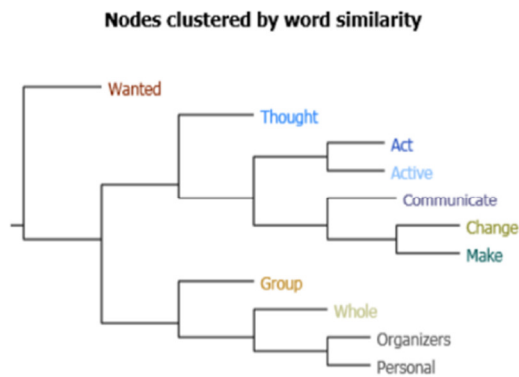
Figures 1 and 2 show the word frequency cloud and corresponding dendrogram of the most commonly occurring items in the analysis.



Figure 1 indicates by size the most frequently expressed words in the interviews. Figure 2 suggested four distinct (but not necessarily disjointed) themes in the source documents, listed here in increasing order of word frequency:

- (1) Wanting;
- (2) Reflecting (Thought);
- (3) Doing (Act, Active, Communicate, Change, Make); and
- (4) Relating (Whole, Group, Organizers, Personal).

**Figure 1.** Word frequency cloud for the combined interview transcripts



Dendrogram of word frequency usage between questions

**Figure 2.** Word similarity dendrogram for the top 11 items in the word frequency query shown in Figure 1.

**Figure 3.**

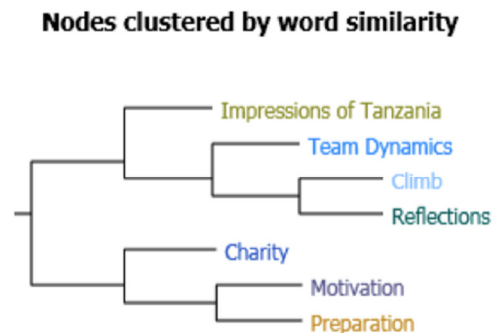


Figure 3 illustrates the relationship between inter-question responses while Table 1 shows the five highest pairwise Jaccard correlations from this analysis. Charity had the least correlation with the other six questions, possibly indicating that the service project was similar in nature and motivation to previous service projects done by students, and thus represented less of a novel challenge to the students. When asked specifically if charity was a motivator, seven of them said it was, in keeping with the importance of giving as a pillar of their faith, but two added that it was “not as important a motivator as the personal challenge.”

**Table 1: Top five correlations between questions**

Question A	Question B	Jaccard Correlation
Reflections	Climb	0.22
Reflections	Motivation	0.20
Preparation	Motivation	0.19
Team Dynamics	Climb	0.19
Team Dynamics	Reflections	0.18

It is interesting to note that the correlation between Motivation and Reflection was high, potentially indicating that participants were taking part in a meta-cognitive process of re-examining their early intentions while reflecting on the future impact of their experiences.

The climb appeared to inspire the deepest level of transformative reflection in participants and also exhibited the highest correlation with Team Dynamics.

Table 2 shows a breakdown of word occurrence in the four themes by question. Since Reflection contained the lengthiest responses, it makes sense that this topic should contribute the most to each theme. However, it is interesting to note that the contributions to wanting and reflecting are larger than the contributions to relating and doing. The latter two themes carry more weight in Team Dynamics and Preparation. Doing is also especially prevalent in Climb.

**Table 2: Distribution of themes by question**

Item	Doing	Relating	Reflecting	Wanting
1 : Charity	10%	14%	8%	11%
2 : Climb	18%	12%	17%	16%
3 : Impressions of Tanzania	9%	10%	11%	9%
4 : Motivation	15%	13%	13%	15%
5 : Preparation	15%	16%	14%	9%
6 : Reflections	22%	19%	26%	30%
7 : Team Dynamics	11%	16%	11%	11%

*Note:*

The percentages are contributions to column total. For example 10% of all “Doing” word occurrences were seen in the Charity section.

The organization of identified sub-themes is given below with the numbers in parentheses representing the number of participant references to the topic.

1. Wanting - The strong theme of wanting the adventure and service experience showed that students intentionally chose to work hard and to endure physical and mental discomfort to achieve immediate personal goals and to prepare for more challenging goals. The specific sub-themes identified within this category include the following.
  - a. Trip motivation
    - i. Personal challenges (3)
    - ii. Do new things; experience new places and adventures (5)
    - iii. Show strength of UAE; make family/country proud (4)
    - iv. Charity; help people in Africa (7)
  - b. Rest and Reprieve
    - i. Coping with fatigue, shortness of breath, and pain on the climb; “wanting to give up” (11)
    - ii. Coping with cold and rainy weather (7)
    - iii. Coping with difficult living conditions (4)
  - c. Future adventures

- i. Participation in trips, climbs, hikes and camping experiences (10)
      - ii. Returning to Tanzania (4)
    - d. Leadership
      - i. Encouraging others to try new things, experience new cultures; “Go for it!” (15)
      - ii. Sharing experiences and achievements (5)
  2. Doing - The theme of doing demonstrates the vigor with which students actively engaged in the challenges of the experience and the reward they felt for their efforts. This included the following sub-themes.
    - a. Perseverance
      - i. “Pushing through” difficulties on climb (4)
      - ii. Pride in accomplishment; making it to the summit (5)
      - iii. Unfamiliarity with equipment led to increased preparation (9)
    - b. Self-Confidence; “if you want to do it, you can” (7)
    - c. Life balance
      - i. Struggles in training (4)
      - ii. Better time management; punctuality (3)
  3. Relating - Relating in many forms is a core authentic human trait, and the evolution of the students’ relationships showed that they derived a transcendent authentic learning experience from intense real-world situations. Relational growth was identified in five sub-areas.
    - a. Relating to peers
      - i. Initial reservations; “weird and mean”, difficult to talk to, misunderstandings (5)
      - ii. Learning to resolve conflict; roommate challenges (4)
      - iii. Coming to care for one another, respect differences, becoming “like family” (12)
      - iv. Developing a strong sense of responsibility for the group (4)
    - b. Relating to guides
      - i. Initial suspicion, uneasiness, and distrust of guides (6)
      - ii. Increased respect through training; “they prepared us well” (4)
      - iii. Increased levels of comfort (6)
      - iv. Support and encouragement: pushed students to succeed in climb, “Would not have made it without them” (6)
      - v. Development of cross-cultural relationships and discussion; “still friends on Facebook”; respect for non-Muslims (9)
    - c. Relating to the people of Tanzania
      - i. Initial fear (3)
      - ii. Observing positive qualities; kindness of residents (3); strength and independence (2); open-mindedness (2); beauty of country (4)
      - iii. Respecting differences in gender roles and relations (4)
    - d. Relating to the needy
      - i. Emotional reactions to children; “felt like crying” (7)
      - ii. Recognition of social inequality; “we have so much compared with them” (6)
      - iii. Consideration of others’ feelings (2)
    - e. Relating to friends and family
      - i. Initial safety concerns, worry; refusal to allow participation (5)
      - ii. Skepticism about student abilities (3)



- iii. Collecting donations (9); “difficult to explain reasons” (2)
- iv. Pride in students; increased confidence in student abilities (6)
- 4. Reflecting - Reflecting as a theme shows the ways that students constructed meaning from their experience and began to transfer their learning to their lives. We identified two primary sub-themes of reflective thinking.
  - a. Appreciation
    - i. Of education (1)
    - ii. Of opportunities (1)
    - iii. Of the UAE standard of living; “more than enough”; can be happy in poverty; stop complaining about what they don’t have (12).
    - iv. Of different cultures; “it doesn’t matter where people are from” (12)
  - b. Expanded Worldviews
    - i. “More to life” than previously thought (3)
    - ii. Importance of charity, “regardless of religion” (4)
    - iii. Challenge gender perceptions; demonstrate strength of women (6)

### **Discussion**

Developing as individuals and contributors to society requires college students to develop leadership and teamwork skills, to challenge themselves so that they become confident and capable, to participate in shared experiences in places different from their homes, and to engage with diverse communities. In this study, students engaged in the physical, mental, emotional, and social development needed to reach the summit of Mount Kilimanjaro as a team and to give to the nearby community in a meaningful way. Activity theory with an emphasis on meaningful learning provides a useful lens through which to describe how these experiences influenced student growth and transformation.

Regarding the study’s first research question, “How do college adventure travel participants perceive and describe their trip-related experiences?” the four primary themes revealed by the content analysis described above correspond closely with the Jonassen’s (2000, p. v) four attributes of meaningful learning: wanting is intentional, doing is active, reflecting is constructive, and relating is authentic. The students wanted the accomplishments of reaching the summit and helping the surrounding community, and they accepted the challenges by working together to cope, thus intentionally committing to a path of physical and interpersonal development. They viewed themselves outwardly as doers at all stages of the experience, actively engaging with each other, their guides, members of the community and the environment. They approached the experience inwardly through reflecting on the implications of the activities for themselves in the many roles they have in their lives, as well as for their families, college, and country, thus constructing layers of meaning and their own narratives. They evolved in the relationships in which they engaged through the experience, relating differently as their experience grew, thus identifying themselves in a growing community to have an authentic, real world learning experience.

The sub-themes identified in this analysis provide further insights into how students’ perceptions changed as a result of the experience, demonstrating a move from naïve to nuanced conceptualizations of their own capabilities and their understanding of the world beyond their community. The students admitted they made a pact before the trip: ‘We decided we would stick together and not interact with the African men unless we had to.’

**Table 3: Growth related activities**

<i>Type of Change</i>	<i>Initial Stance</i>	<i>Catalyst(s)</i>	<i>Developed Stance</i>
Relationship with guides	Unease, distrust, "would not let them touch bags"	Training sessions; encouragement during climb	Friendship, respect, gratitude, "would not have made it without them"
Impression of Tanzania	Fear, misunderstanding, judged people by looks	Interaction with residents; discussions with guides.	Admiration for kindness and strength, appreciation for culture ("African Hugs"), judge people by actions
Perseverance	Not capable of enduring physical hardship, prepared for failure ("return after two days"), "ask mom to do everything".	Summit experience; observations of Tanzanians	Can do what they put their minds to, succeed at difficult tasks, experience new things, push through physical pain and discomfort, not give up too easily
Family beliefs	Concern for student safety, skepticism about student abilities	Students' return	Pride in student accomplishment, confidence in student abilities
Relationship with other students	Viewed as "weird", difficult to talk to, more focused on personal challenges	Training; shared experiences	"Like family", shared responsibility for group success, cared for each other
Perspectives on possessions	Complained about not getting what they want, needed possessions to be content, took education for granted	Visit to government school	"We have so much compared to them", there is "more to life than shopping", can be happy in poverty.
Time management	Struggled with school/life balance, strained by training, unorganized, not punctual	Organization of trip; "Suzanne" trip leader	Punctual, organized, more active without strain
Sense of adventure	Excited, but timid; fearful of new food, people, and places	Climb; time in Tanzania	Seek new camping trips, climbs, visits to other places; encourage others to take part in experiences

During the climb, they developed a strong culture of inclusiveness irrespective of gender, religion and ethnicity. Student E said: 'I learnt from the guides to help others without expecting anything back,' and Student A admitted: 'We would have never succeeded without them.'

The students had the basic knowledge of the dos and don'ts of the Tanzanian culture as they attended an information session. However, more could have been done to improve their general knowledge of the place which was quite poor. For example, they were worried about

encountering lions during the climb. They also had religious concerns about being disrespected by Tanzanian men. This should have been addressed before the trip by inter-cultural training. They thought the country was generally backward and, other than the climb, they did not expect to find much of value there. A chance meeting with Maasai shepherds on the first day in Tanzania made them realize they were entering a rich culture which began to fascinate them. A visit to the traditional market reinforced their interest. They also learnt that they themselves could be accused of disrespect when an elderly local woman became upset by having a photo of her taken without permission. The climb itself showed them tremendous hospitality not only of the guides but of local population as well. The Wagumu (Sherpas) and the support staff who came from various ethnic groups, such as Maasai and Chaga, were friendly and supportive.

There were two pivotal moments of the trip. Naturally, reaching the Uhuru peak was one of them. A visit to the local government school became an eye opening moment for many of the students. Seeing the overcrowded conditions of the school and the eagerness of the Tanzanian children to learn, made students reflect on how fortunate they were in their country. They became aware of their wastefulness and how that could be perceived by people of a country with limited financial resources. Taking a sip of a soft drink and abandoning it because you preferred a different flavor became a shameful act. Interaction with local community should be an integral element of any trip to this region of the world.

Table 3 highlights several examples of self-reported transformations which were facilitated by trip related catalysts, addressing the study's research question, "What personal growth do participants report as a result of the adventure and service experiences?"

These examples show that participation in both components of this study increased students' individual sense of empowerment regarding their own capabilities as well as their influence on peers, and their ability to make a positive difference where need exists in the world. They now have the eyes with which to see unmet needs in their community more broadly, as well as tools with which they might begin to serve those needs. Indeed, their engagement in the project bridged the geographic and cultural divides on many levels. It was a complex and rich experience with long-term possibilities for their growth as women and engaged citizens. Upon their return from the climb, the students demonstrated this potential by acting on their learning in several ways-

- a) They collected additional funds for the school.
- b) They sent new boots to a guide whose boots were in disrepair.
- c) They sent a new laptop to a guide in training for her college study.
- d) They met with the UAE sponsor to describe the Kilimanjaro adventure and to express their goal to climb Fujiyama next.

This eagerness has generated increased interest amongst other students at the college in planning and participating in the next learning abroad opportunity.

### **Conclusion and Limitations**

This project built upon theoretical frameworks regarding meaningful learning—learning that is active, constructive, intentional, and authentic – to create a challenge-based, service-learning adventure experience for nine female participants. Qualitative narrative analysis of post-trip interview transcripts illustrated the success of this project in achieving these desired outcomes by identifying four major themes closely corresponding to the four facets of meaningful learning. This analysis also revealed a complete transformation of student attitudes in regard to their

personal abilities and their role in the world. Over the course of the project, participants moved from identities as timid and isolated students towards identities as literal and figurative trailblazers. For some of them, the learning curve was quite steep. While some of the students doubted their capabilities, others were overconfident. Those tended to ignore the chief guide's nutrition and clothing advice. It was not until they encountered a hail storm that they realized how weak and poorly dressed they were. Student F said: 'Thank God one of the teachers gave me gloves and a jumper. I realized then that to succeed I really needed to follow the leader's instructions and cooperate with the guides.' By the conclusion of the trip, students developed the ability to construct and articulate their concepts of themselves as mountain climbers and citizens of the world, to reflect on their goals and act intentionally to achieve them, to situate their learning within a complex, authentic challenge, and to take on leadership roles in their local school community, which in turn has encouraged other women in the UAE to "go for it" and experience similar growth filled adventures.

These findings correspond to recent representations of study abroad as an experiential and developmental process, characterized by shifting cultural perspectives from experiences that push students beyond their habitual ways of living (Vande Berg, Paige, & Lou, 2012). These are the changes that our students' college and country expect of them as they develop their leadership, communication, independence and global citizenship.

One limitation of our study is the scope of inference. The population of individuals from which this study drew was relatively homogeneous, consisting only of women at an urban school in the Middle East. Future studies may wish to address the extent to which the gains from adventure learning experiences can be transferred to other populations of college students. In addition, the small sample size of nine students who participated in the study limits our ability to generalize claims even within the school. Further studies may seek to address the impact of subsequent trips and track the progression of gains in learning outcomes over time. Researchers may also wish to perform several phases of interviews, before and during the experience, to track progression of student attitudes over time.

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## AUTHORS

**CATHY CAVANAUGH**, PhD, is Director of Teaching and Learning in Worldwide Education at Microsoft. Cathy's research and publications focus on technology-empowered teaching and learning. She has held faculty and leadership appointments in the US and the Middle East, and was a Fulbright Senior Scholar in Nepal. She also directed professional development centers in the US, and was a teacher in the US and Caribbean. Email: [cathy.cavanaugh@microsoft.com](mailto:cathy.cavanaugh@microsoft.com)

**EWA GAJER**, PhD, is a professor of education. She holds a degree in Australian literature from the University of New England in Australia. Previously, she worked with the Migrant Education Program at the Southbank Institute of TAFE in Brisbane, Australia. She has authored a bibliography: *Australian Women Short Story Writers* and literary reviews. She is currently teaching Intercultural Studies and Research Methods at Abu Dhabi Women's College. Email: [egajer@hct.ac.ae](mailto:egajer@hct.ac.ae)

**JOHN MAYBERRY**, PhD, is an Assistant Professor of Mathematics at the University of the Pacific. He received his B.A. in Mathematics from California State University, Fullerton in 2003 and his PhD in Applied Mathematics from the University of Southern California in 2008. After completing his doctoral work, he spent two years as a Postdoctoral Fellow and Visiting Assistant Professor at Cornell University before starting his current position. His research interests are applying probability models and statistics in multidisciplinary collaborations including mathematical biology, education, and water polo analytics. Email: [jmayberry@pacific.edu](mailto:jmayberry@pacific.edu)

**BRENDAN O'CONNOR**, is a professor of education. He completed his B.A in International Development Studies from Saint Mary's University in 2003 and his M. Ed in TESL/Curriculum Studies from Saint Mary's University and Mount St. Vincent University, in Halifax, Nova Scotia in 2009. He has taught ESL/EFL at various levels in Korea, Syria, Canada and the United Arab Emirates. At Abu Dhabi Women's College he is currently teaching English for Academic Purposes and Global Studies courses. Email: [boconnor@hct.ac.ae](mailto:boconnor@hct.ac.ae)

**JACE HARGIS**, PhD, is the Associate Provost of Faculty Development, Assessment and Research and Professor at Chaminade University Honolulu. Previously, he was a College Director in the UAE; an Assistant Provost and Associate Professor at the University of the Pacific; and a Director of Faculty Development and Assistant Professor at the University of North Florida. He has authored a textbook, an anthology and published over 100 academic articles as well as offered hundreds of academic presentations. Email: [jace.hargis@gmail.com](mailto:jace.hargis@gmail.com)

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