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RESILIENCE AS EXPERIENCED BY ENVIRONMENTAL EDUCATORS

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This study examined resilience as experienced by environmental educators in the face of growing environmental adversity. Through in-depth interviews, this hermeneutical study sheds light on the environmental factors and internal competencies that contribute to resilience in seven environmental educators. Additionally, the interaction between these factors and competencies (known as the person/environment transactional process) is explored. Kumpfer's (1999) *Resilience Framework* provides the organizational framework for the results of this study.

Keywords: resilience, transactional process, resilience framework, hermeneutics

Introduction

Humans today are faced with an unprecedented amount of environmental challenges (Suzuki & McConnell, 2002). In a 2007 report, the Intergovernmental Panel on Climate Change (IPCC) stated climate change is unequivocally linked to human behaviour. Furthermore, continued climate change has catastrophic implications for the health and well being of all living organisms and living-systems (UNESCO, 2010).

The issue of climate change has resulted in a large-scale, global undertaking to educate world citizens about environmental issues (UNESCO, 2010). However, despite the good-intentions of such initiatives, it has been found that learning about environmental issues can lead to feelings of despair and paralysis in confronting these challenges (Hicks & Holden, 1995). Furthermore, Sobel (1996) suggested that environmental education could encourage dissociation from the environment, while Carver (1998) indicated that distancing oneself from negative information, such as the effects of climate change, has often been used as a coping strategy.

Given the increasing environmental challenges facing humans today, and the psychological distress that can arise from learning about environmental challenges, how is it that environmental educators experience resilience? Using hermeneutic methods, this question was explored through in-depth interviews with seven environmental educators in Ontario, Canada. This article highlights the internal competencies and environmental factors that participants reported as contributing to their resilience. Moreover, a description of how these individuals negotiated internal competencies and environmental factors through the person/environment transactional process to promote resilience is provided. This paper concludes with a brief discussion and recommendations for future research.

Review of Literature

Traditionally, sociological and behavioural research on mental health has been based on treatment of disease and illness (Johnson, 1999). Resilience studies, however, have taken an alternative approach in which disease/stress prevention and promotion of health is emphasized (Beardslee, 1989; Cicchetti & Garnezy, 1993; Egeland, Carlson, & Sroufe, 1993). Resilience literature recognizes that factors within the individual and factors within the environment contribute to one's resilience. Yet, the mere presence or absence of either of these types of factors does not guarantee resilience (Kumpfer, 1999). More recently, attention has turned to *how* these factors interact with one another to promote resilience (Egeland et al., 1993). This interaction is termed the person/environment transactional process and is not yet well understood (Johnson, 1999; Kumpfer, 1999).

Resilience can exist only in the presence of a stressor and is the process of returning to a previous state of functioning (at a minimum) after exposure to stress (Garnezy & Masten, 1986; Kumpfer, 1999). In this

study, the stressor is the psychological effect of increasing environmental adversity (such as climate change). One's environment can provide protective factors (factors mediating stress) and risk factors (factors contributing to stress). Resilience research is concerned with understanding how individuals negotiate factors within their immediate social surroundings (i.e., environment) using internal, personal competencies to experience resilience (Kumpfer, 1999).

Resilience research has been conducted in a plethora of academic fields. Consequently, the factors contributing to resilience often reflect the field of research in which the study is being conducted. To aid in the organization of this diverse body of literature, Kumpfer (1999) developed an organizational tool known as *The Resilience Framework*. This framework includes two sets of factors: environmental factors and internal competencies. Further, it recognizes resilience as a process that occurs in the context of an individual's surroundings, and as something that is influenced by an individual's aptitudes. This is called the person-environment transactional process.

Environmental factors that influence resilience include things such as family, friends, co-workers, or the social and political nature of the work environment. Depending on the context, these can be protective factors or risk factors. It is important to note that the presence of risk factors does not necessarily imply an individual is "at-risk" (Kumpfer, 1999). Outcomes are a result of complex and dynamic interactions between the person, environment and stressor.

A multitude of internal competencies have been identified in resilience research (McMahon, 2007; Sumsion, 2003, 2004). Kumpfer (1999) has organized these competencies into the following five categories: (a) spiritual, (b) emotional, (c) cognitive, (d) social/behavioural, and (e) physical competencies.

Spirituality can encompass perseverance, hopefulness, ability to bounce back, and flexibility (Kumpfer, 1999). Additionally, dreams (Kumpfer, 1999), goals (Kumpfer, 1999; Sumsion, 2004) and purpose in life (Beardslee, 1989; Bernard, 1993; Kumpfer, 1999) are considered components of spirituality. In this study, spirituality refers to both secular and non-secular worldviews and has been defined as "a deep, holistic knowledge of life, which evokes reverence and a sense of awe about the universe. Spirituality expresses something of the ineffable mystery of life" (Eaton, 1995, p. 29).

Emotional competency refers to things such as happiness, recognition of feelings, humour, hopefulness, emotional management skills, and ability to restore self-esteem (Kumpfer, 1999). Emotional competencies help an individual manage and respond to situations in a way that promotes resilience. Using humour during challenging times is an example.

Cognitive competency describes the abilities that help an individual accomplish their goals or achieve their dreams (Kumpfer, 1999). Several cognitive skills have been identified by researchers including moral reasoning, interpersonal awareness, intelligence, planning ability, creativity, and self-insight (Beardslee, 1989; Kumpfer, 1999; Sumsion, 2004). Self-insight is defined as "asking penetrating questions of oneself and subsequently providing honest answers" (Kumpfer, 1999, p. 203).

Social/behavioural competencies are similar to cognitive competencies. However, they require behavioural action (Kumpfer, 1999). Recognized social/behavioural skills include: social skills, problem-solving skills, communication skills, and "street smarts." "Street smarts" are the effective functioning within different situations and contexts (Kumpfer, 1999). These skills help the individual construct an experience of resilience. Maintaining one's health and general "good health" are components of physical competencies that contribute to resilience (Kumpfer, 1999).

In resilient individuals, interaction between internal competencies and environmental factors is termed the *person-environment transactional process* (Egeland et al., 1993; Kumpfer, 1999; Richardson, Neiger,

Jensen & Kumpfer, 1990; Werner, 1993) and holds promise for the fostering and promotion of resilience. The transactional process has been found to include: feelings of connectedness (through outreach and community involvement), an appreciation for being part of something larger (socio-political awareness), and professional growth (Beardslee, 1989; Sumsion, 2003).

Kumpfer (1999) described the interactional process as how an individual selectively perceives their environment or consciously/unconsciously modifies their environment. In cases of youth living in communities with high drug and crime rates, resilient youth may modify the environment by choosing to live with a relative outside of the neighborhood, or may associate with pro-social environments within their neighbourhood such as community centres (Kumpfer, 1999). In doing so, resilient youth help to reduce environmental risk factors. Kumpfer (1999) reported six aspects of the person/environment transactional process that promote resilience. These aspects are: (a) identification and attachment to pro-social people, (b) active environmental modification, (c) selective perception, (d) cognitive reframing, (e) planning and dreaming, and (f) active coping.

Previous studies on resilience emphasized that individuals demonstrate resilience in the time, place, and context of their situation and that changes in these variables result in changes to the resilience process (Werner & Johnson, 1999). This means that one's experience of resilience will never be the same. The environmental factors and internal competencies one uses to experience resilience continually change. As such, the purpose of this study was to examine how environmental educators experience resilience in the face of growing environmental challenges.

Methods

Hermeneutical research methods were used to explore the research question "How do environmental educators experience resilience in the face of increasing environmental adversity?" Hermeneutics has been described as a study of "lived experience" (Moustakas, 1994) and is concerned with the meeting of points of view between researcher and participant where neither "assumes a privileged position in interpretation" (Koch, 1996, p. 177). To better understand the phenomena of resilience as experienced by environmental educators, the researchers used in-depth, semi-structured interviews to collect data.

Participants

Participants were recruited through an email advertisement disseminated through environmental education organizations in Ontario, Canada (e.g., Council of Outdoor Educators of Ontario, Ontario Society for Environmental Education). Additionally, participants were recruited by word of mouth through the network of environmental educators in the region. Participants were selected using study criteria including experiencing resilience in the face of increasing environmental adversity and having taught environmental education for a minimum of five years.

Sixteen environmental educators expressed interest in the study. However, only seven environmental educators met the criteria and agreed to participate in this study. A summary of participant information is provided in Table 1. Pseudonyms are used throughout this paper, with the exception of Jane who requested her real name be used.

Three participants worked as high-school teachers. Dave taught an integrated semester program on environmental stewardship, while Henry ran an outdoor centre and worked with the province-wide, Eco-schools program. The third teacher, Rachel, worked in a high school and also had several years experience working with community organizations engaged in environmental education.

John and Janice used their farm operation as an opportunity to teach others about the environment. The farm hosts informal educational experiences for school and community groups (ranging from half-day to multiple day experiences) as well as an internship program. John and Janice are working towards a partnership with a nearby college cooperative education program.

Table 1
Summary of Participants

Participant	Description	Age	Gender	Years working in environmental education
Jane	Founder of Garden Jane	40	Female	15
Henry	Teacher (Catholic)	57	Male	25
John	Farmer	62	Male	40
Janice	Farmer	51	Female	30
Rachel	Teacher (Public)	33	Female	15
Ralph	Educator within government organization	62	Male	35
Dave	Teacher (Public)	45	Male	20

Ralph worked for a government organization in the area of environmental education. His was the only environmental education position within his ministry (i.e., department). Ralph's work was program development and he was involved in several outreach projects. Jane started "Garden Jane" in 2007 to connect kids and adults to urban garden landscapes. She developed and delivered half-day to two-day urban programs. She has worked in community gardening since 1997.

Interviews

Each environmental educator participated in one in-depth, semi-structured interview lasting an average of 75 minutes. Sample questions include: Describe your involvement with environmental education? Why did you become involved in environmental education? In what ways do you experience stress related to environmental concerns? and, What advice would you give to someone entering the field of environmental education? The in-person interviews were audio recorded and transcribed. Transcriptions were reviewed by participants to ensure accuracy. Each participant also took part in a follow-up phone interview lasting approximately 30 minutes. Detailed notes were taken and reviewed with participants for accuracy.

Data Analysis

Data analysis was completed according to the steps put forth by Colaizzi (1978). Interview transcripts (original protocols) were analyzed line by line for significant statements. Meanings were formulated for each significant statement and organized to create meaning units. Meaning units were clustered into themes, and a descriptive analysis was written for each thematic cluster. In the final step, an exhaustive statement was written.

Trustworthiness was achieved through member-checking, saturation of the data, and continuous movement between original protocols and the phases of analysis. An on-going research journal facilitated reflexivity and assisted in capturing initial assumptions and opinions as recommended by Koch (1996). Additionally, participant voices were included in the presentation of data through the use of quotes (Lather, 2007).

Results

Participants reported feeling discouraged, depressed, and sad when confronted with the stress of increasing environmental adversity. Participants mediated this stress through environmental factors and internal competencies. Themes related to environmental factors (or those an individual experiences in his or her immediate social surroundings) and internal competencies were organized using *The Resilience Framework*

(Kumpfer, 1999). Key themes (those most unique and most emphasized by participants) have been reported in this paper.

Environmental Factors

Participants revealed that there were several environmental factors that influenced their level of resilience. Examples of protective environmental factors that were mentioned include: positive contact with individuals such as co-workers, supervisors, administrators, trustees, students and parents of students, friends, family and spouses. Risk-related environmental factors included: funding constraints, political constraints within the workplace and societal trends related to the environment. Participants mentioned that environmental factors could be both protective *and* risk factors depending on the context. Environmental factors worked in conjunction with internal competencies to achieve resilience.

Internal Competencies

Many themes related to internal competencies emerged from the interview data. These include emotional, spiritual, cognitive, and social/behavioural competencies and each contains several themes. No themes emerged related to physical competency.

Emotional competency. All participants believe that as a result of increasing environmental adversity humans will be met with growing challenges in the future. Despite this, many participants' expressed feelings of hope. As Jane described,

But where is the hope for me? ... You know I look at children and I look at, uh, again the energy that individuals have, and how they light up, over the learnings that they have, and I have a great deal of hope for humans.

Participants related strong determination and perseverance with resilience. Many remarked that it was "stubbornness" and simply "hard work" that got them through challenging times.

Spiritual competency. All participants revealed thematic components related to spirituality including a strong connection to the future. As parents, grandparents, and expectant parents, all participants felt a connection to ensuring a healthy natural environment for future generations. Five participants described a spiritual connection to the land and nature. Rachel reflected on her connection to nature as a child growing up. She said, "I just wasn't complete if I didn't have [time in nature] in my life I just wouldn't be complete." Several participants described the feeling of being part of something larger, while some described the sense of responsibility they felt in working towards environmental change. Three of the participants also acknowledged the sense of purpose, fulfillment and meaning they gained from their work.

Cognitive competency. Cognitive competencies were expressed through themes such as: objective view of the earth, recognition of life-stage, self-insight, and on-going learning.

Objective view of the earth. Nearly all of the participants had a background in science or environmental science. As Ralph pointed out, a scientific perspective requires one to look objectively at a situation. The majority of the participants shared a similar long-term view of the earth recognizing that humans are not seeking to save "the planet," but are seeking to save human life and prevent suffering.

Participants indicated that an objective view of the earth reveals that human populations are "in trouble." However, understanding ecological cycles, the rise and fall of populations, and carrying capacity provided scientific and objective means of explaining the challenges facing humans. This scientific and objective perspective contributed to the resilience of several participants.

Recognition of life stage. Ralph, Henry, and Dave all mentioned the relevance of life stage in the construction of resilience. Recognizing one's life stage helped these individuals gauge how to construct their work. For example, Ralph believed his responsibilities as a parent provided an incentive to stick with his work during times of challenge. While reflecting on his tenure as an environmental educator, he questioned if it was a

matter of resilience or a matter of necessity.

Similarly, parenthood was an important factor in decision-making for both Dave and Henry. Henry described a shift in priorities when his children were growing up. He said, “[summer canoe school] absorbed 12 summers of my life, it is exhausting, but it’s incredible. . . . I let go of it because I wanted my summers back. And my kids were growing up.” Ralph also mentioned that life-stage influenced how he goes about his work. He describes the youthful energy of starting in the field, and described his confidence in “pushing the boundaries” as he nears retirement.

Self-insight. Many participants acknowledged their strengths and weaknesses, recognized their personal limits, and developed tools for their success. For example, Dave’s created a work schedule that allowed for rejuvenation by taking a semester off every three years. He explained, “I need some time, I really need a rest working with the students. I do, because they’re tough. . . . Yeah. So that allows me the time to go do those other like, fill myself up with more of the eco-ed.” Dave’s self-insight, as revealed in the above quotation, contributed to his resilience as an environmental educator.

On-going learning. Environmental educators spoke of their commitment to on-going learning. Participants conveyed openness to new ideas, and actively sought out opportunities to learn. The educators described learning opportunities as occurring among colleagues, with students, and while attending conferences and workshops.

Social/behavioural competency. Social/behavioral themes reflect actions taken by the participants in this study. The themes of “street smarts,” action, role-modeling/mentoring, and “planting seeds” emerged from the participants.

“Street smarts.” Many of the participants achieved success through creative problem-solving and social skills sometimes referred to as “street smarts.” Most participants spoke of problem-solving related to circumventing political challenges within their work environments. Henry described how he uses “street smarts” in presenting ideas to potential funders. He remarked,

You try to couch it in terms they understand. They understand money. So if you can say, that this action, behaviour can save this many dollars, then you’ll get more support on a dollars saving thing, and it’s green at the same time, you’re more likely to get that.

Henry also described the importance of knowing the personalities that one works with in order to effectively present ideas and gain support. He spoke of the importance of discerning allies within school management.

When we discussed how he discovered his supporters, Henry explained,

They either moved into [the position], or I discovered when I came into the position, who the supporters were. And as they rotate through their positions they retire, and or they get demoted, or they get posted, or they go away on long-term illness leave or whatever and they get replaced, I can quickly find out, knowing who the replacements were, what their history is. And I’ll talk to someone who knows them and they’ll tell me about them. So knowing the network fairly intimately, is a real advantage, it’s a benefit, it’s a useful resource knowing who they are, because then you know how to move projects or initiatives through the political gauntlet. . .

As stated, Henry captured the importance of using social skills and problem-solving skills to navigate the often politically charged circumstances facing environmental educators. These statements reflect similar sentiments expressed by several other participants interviewed for this study.

Action. Several of the environmental educators spoke of a need to act. As Jane described, the need to take action is important in coping with challenging situations. She said, “There’s this moment of horror but then there’s the moment of “Oh my God, I’ve got to do something.”

Similarly, Dave stated, “You’re either going to do something or you’re not, and if you didn’t do something, then you’re definitely passive.” These statements highlight the action-orientation of many of the environmental educators in this study. A sense of satisfaction and accomplishment is attached to taking action.

Role modeling/mentoring. Several participants spoke of the importance of having role models and being mentored. Likewise, they discussed the satisfaction they gained from mentoring others. Jane describes how she learned “street smarts” from a mentor early in her career. She said,

I was really mentored by... by some pretty bright people that helped me how to negotiate those things so I could be effective and use the momentum, use momentum and leverage as two tools that would really make a difference.

Jane attributed mentorship to some of her success in navigating difficult political situations early in her career. These lessons are what she passes on to her own mentees. Jane also facilitates effective goal-setting opportunities for her staff and student interns. She remarked,

When people like [interns] come to work with me, we design a planned study, or a program that looks at their goals and goals of Garden Jane and the group of us who are working together and uh we try to set forth a plan...

Through her mentorship, Jane perpetuates the cycle of mentoring new environmental educators and helps to create a culture of care and support building a strong network of like-minded individuals.

Like Jane, Henry had been coached on how to deal with politically challenging situations in his work place. He said, “I’ve had people give me suggestions on, ‘How do I deal with the politics of school board structures, like directors?’” Henry now provides similar support for other educators. He remarked,

I’m at the point now where I can say, “Well, have you taken a look at this, have you thought of this, who’s on your side? Do you know the politics of the school, the community? In your board do you have a designate who does the facilities maintenance” and there’s lots of ways of looking at it. Because this is my fourth year with Eco-schools I can help out with that.

The examples provided by Jane and Henry help to illuminate the importance of role-modeling and mentorship in resilience. Jane and Henry received valuable training in problem-solving through mentorship. They now share similar lessons with those they work with and are helping to build a culture of successful problem-solvers, a skill that is important in resilience.

Planting seeds. When speaking with Jane about working towards environmental change, she introduced the gardening metaphor, “planting seeds.” This metaphor is a theme that reoccurred throughout the interviews. Ralph described how “planting a seed” grew into a larger project with significant impact. He said,

And it started out I was doing it for one school, and I sent it out to a handful of people and said, “you might be interested in these.” And... and some more people got interested, and other people heard from other people, and by the end of the year there were probably 60 or so people in addition to the school, that I was sending these things out to on a regular basis. And we did them three times a month... When I started doing this, you know I was just trying to help the school out. And now it’s grown into its own website and it’s gonna attract a fair amount of usership.

Ralph’s story is similar to several environmental educators who described small projects that grew into larger projects. Educators spoke of the importance of presenting ideas or “planting seeds,” and returning to nurture those ideas over time. Jane’s comment summarized the theme of “planting seeds.” She said,

And so, I was taught a few lessons up front, that - these are the things I pass onto my interns - of how one maneuvers in order to make strategic change in a big system. And it’s things like, planting seeds - really to use a gardening metaphor - you plant the seeds, you don’t let them die, and you come back and you reap the harvest.

Person/Environment Transactional Process

The person/environment transactional process helps describe how participants experience and construct resilience. Through our discussions with environmental educators, five themes emerged to shed light on the person/environment transactional process.

Nature as healing. All participants spoke of their deep love and appreciation of nature. Similarly, each connected with nature as a means of maintaining mental and spiritual well-being. Participants recognized the importance of nature to their overall resilience, and created opportunities to connect with natural spaces to protect against challenges, and to build strength during times of challenges. Nature offers a place for rejuvenation. As Ralph explained,

We canoe, we canoe camp you know so we're out there, we're in the out-of-doors it's where we like to be, but it's not connected to work. And I'm not thinking about all the problems that are going on out there, I'm just thinking about how nice it is to be out. There're still nice places out there, whether it's Killarney, or Algonquin or wherever you're going... You know, you can get away, and deal with it in the way doesn't impact it very much and still gives you the pleasure of being there. And, that, that's certainly rewarding.

Ralph emphasized the importance of taking time to connect with nature. The majority of participants used time in or with nature as a rejuvenating force, and to help combat negative feelings they experience related to environmental issues.

Associating with positives. Associating with positives was a theme described by each participant. All participants described decisions to abandon projects or initiatives that met resistance in lieu of projects that garnered support. Participants described challenges and situations that demanded persistence. However, as Henry stated, "You balance off, some of the negatives things you hear with the positives."

Overwhelmingly, participants described a desire to work in positive environments and with positive individuals. When projects met with great resistance, these environmental educators focused their energy on alternative, positive projects.

In this regard, Jane described advice given to her early in her career. She said, "If they're pulling the rope drop it. If people are struggling against you, then drop it." She continued,

The meeting that I might have crashed ten years ago and been driven to really, work with ten people that really didn't seem to have a lot of energy, and then end-up carrying the weight of it – now I would say, "Okay, sick system, now I'm moving out to a healthy system." I'm looking for the healthy opportunity because, it's kind of like cutting the losses I guess...but if I walk into a group of teenagers and they're all sitting there completely unmotivated it doesn't mean I don't feel there's a challenge in that that's worth taking.

Henry suggested that surrounding oneself with positive projects and people helps to provide motivation. He went on to state, "Um... in terms of getting discouraged or depressed when these positive projects keep popping up, you're always working positively more than you are negatively, so I don't get depressed, at least not lately."

As a student, Jane was introduced to a metaphor she continues to apply today. The metaphor compares how termites build nests with how people might approach projects. This metaphor explains her approach in deciding where to invest her time and energy. She said,

Apparently the way termites build nests is, they take bits of saliva and sand whatever, bits of debris, and they just drop them randomly. Random, random, random (uses hands to illustrate dropping all over place), and eventually two bits will stick together and from a bit of a beginning of a pile.... eventually what you see is, a third piece will drop on top and you start to get like little bits of an arch forming or a cone or something, and then they organize around what worked so thousands of random actions, many

of them don't stick. Then when they do stick, they work with that and they build their structures. Jane appreciated working within positive environments where individuals are motivated and excited by their work. She used the termite metaphor to help decipher "where the energy is." This metaphor accurately captures the theme of "associating with positives" described by the majority of the environmental educators in this study.

Networks. The theme of networks emerged with each participant in this study as an important factor in their experience of resilience. Overwhelmingly, the participants in this study reported networks as an integral component of one's support system. As a relatively isolated environmental educator in northwestern Ontario, Rachel described the impact of her networks. She remarked,

Knowing that other places like the EECOM network is out there, and just all across North America ... Definitely through OSEE (the Ontario Society of Environmental Educators) and just knowing, yeah I probably only get together with those folks once a year, but it's just nice knowing, being in communication via email, and knowing that there's a whole community out there, working towards [environmental change].

When asked to provide advice for those entering the field of environmental education, Henry stated, I would keep your network active, of like-minded individuals, and that would really help, the biggest thing I often felt when I was discouraged was I felt alone.... So surround yourself, or at least have access to, on a relatively regular basis, at least once a month or something like that, this network of like-minded individuals who can help you not feel alone. I'd say that is a really big one.....So going to conferences, going to meetings, going to workshops, uh, involving yourself in the field with other projects, with similar minded groups – there's so much overlap with so many groups There's a lot of social justice groups whose mandate includes environmental activities, because we all share the environment.

Henry's description of where networks are found, and what networks might look like is consistent with other environmental educators in this study. Most importantly, this statement described the importance of networks in the process of resilience.

Job structure. A greater understanding of the process of resilience can also be gained through examining how environmental educators structure their work environments. The environmental educators in this study were conscious of creating positive work environments and environments of support. Moreover, several environmental educators interviewed for this study described explicit actions taken to create a work environment conducive to long and resilient careers.

For example, Dave described his decision to take every sixth semester off to prevent burnout. He said, "I do five over six. Every three years I take a semester off and go and work....five over six is so that I need some time." Similarly, Rachel described how she has structured her job to promote resilience. She said,

I've either done [environmental education] everyday of the week for some months, or done it a couple days a week for some years... it's not consistent so maybe a little bit more sustainable.... I think it helps when I'm not, it's not something that is encompassing my brain like 24/7...so I break it up with other things and then it can be, you know, easy to go back to.

Both Dave and Rachel described how structuring their work helped to promote resilience and suggested ways to promote resilience in other environmental educators.

Collaboration. The final theme that emerged to describe the person/environment transactional process is that of collaboration. Several participants described a collaborative approach to work projects, and a desire to work in partnerships with other organizations. The concept of collaboration is closely linked to the importance of networks. However, it suggests a distinction in that networks provide support while collaboration is working together on an initiative.

As Ralph described, collaboration with local schools led to successful projects. Similarly, John and Janice described an effort to collaborate with local chefs to offer cooking classes on food produced from the farm. John and Janice also spoke of collaborating with a local college program in which students work with

nearby farms over the course of a year to gain a “full circle” understanding of farming. It is hoped that through this cooperative program more students will take-up farming. Jane spoke of her collaborative work with organizations as an outlier to the system. This allowed Jane to combine her strengths with the strengths of the organization to create successful programs.

The person/environment transactional process sheds light on how environmental educators construct resilience. Researchers are still striving to understand the various facets of this process. However, the themes discussed provide insight into these seven participants’ experience of resilience through this transactional process and are further explored in the discussion.

Discussion

The themes expressed by the participants in this study provide insight into the experience of resilience in environmental educators despite increasing environmental adversity. Participants reported environmental factors and internal competencies consistent with resilience literature such as hope for the future, recognition of life stage, self-insight, on-going learning, “street smarts,” action, and role-modeling/mentoring (Beardslee, 1989; Kumpfer, 1999; McMahan, 2007; Sumsion, 2004). Additionally, participants identified themes such as “an objective view of the earth,” “connection to nature,” and “planting seeds” as factors contributing to one’s resiliency. These factors are not reflected in the resilience literature, but can be understood in the context of environmental education.

Within the person/environment transactional process, participants described factors previously identified by several researchers (Beardslee, 1989; McMahan, 2007; Sumsion, 2004). Kumpfer (1999) acknowledged “active environmental modifications” as a factor in the interactional process of resilience. Participants in this study repeatedly discussed the importance of spending time in nature to restore and promote psychological health and well-being. These experiences are consistent with research that shows nature as providing opportunity for psychological and physical healing (Frumkin, 2001; Maller, Townsend, Pryor, Brown & St Leger, 2005). The ability of participants to recognize a need (self-insight) for “time in nature,” and the ability to meet this need, suggests the capacity for “active environmental modification.”

The majority of participants acknowledged that strong and active networks of like-minded individuals were important in the construction of resilience. Consistent with the literature (Kumpfer, 1999; McMahan, 2007), “identification and attachment with pro-social people” was achieved through conferences, workshops, connecting with like-minded people in the community, and seeking support through virtual technology.

Similarly, “associating with positives” can be achieved through interaction with pro-social people, but also through modifying one’s environment and focusing on positive projects (selective perception) (Kumpfer, 1999). This is reflected in the “termite metaphor” and Jane’s description of “working where the energy is.” The ability to modify one’s environment, and selective perception have been found to be processes that contribute to resilience (Kumpfer, 1999) and suggest that participants actively create an environment conducive to their success.

Carver (1998) suggested that during times of distress, maintaining trust when working collaboratively can reinforce positive psychological growth. Learning to count on others may explain how the participants maintain feelings of hope and belief in human capacity to “do good” despite increasing environmental adversity. This helps clarify how participants’ transform potential risk-situations into opportunities for psychological growth.

Recommendations

The person/environment transactional process is not well understood by resilience researchers. Moreover, it has been suggested that the transactional process holds the greatest opportunities for practice related to the promotion of resilience. To this end, several opportunities for fostering resilience in environmental educators exist. First, it is suggested that networks be promoted among environmental educators and in teacher

training programs. For example, virtual networks may provide effective opportunities to connect educators across great distance to share ideas and stories of success, and provide support to one another. Professional organizations may consider adjusting membership fees so that joining is more affordable. Mentorship programs may also have a place in the pre-service teacher training of new environmental educators.

Second, careful attention to how jobs are structured may foster resilience. Allowing for a degree of autonomy over decision-making, creating cultures of support, and providing appropriate time for rejuvenation will promote resilience. Further investigation into desired working conditions presents the opportunity to structure job positions so as to promote resilience.

Finally, environmental educators are encouraged to work collaboratively and in partnerships. Besides expanding one's network, collaboration promotes positive association with like-minded individuals. Environmental educators should seek out organizations and individuals with which to partner.

In terms of future research regarding resilience in environmental educators, further examination of the person/environment transactional process should be conducted, as should a closer examination of the degree of resilience experienced by environmental educators. Pre-service teacher training programs, especially those with specialization in environmental education, should examine opportunities to promote resilience in environmental educators entering the teaching profession, such as encouraging membership in environmental organizations and pairing new environmental educators with mentors who have experience in the field.

In summary, environmental educators identified several environmental factors and internal competencies that contributed to their resilience. A greater understanding of how resilience is realized occurred through the examination of the interaction of these items in the person/environment transactional process. Themes unique to environmental educators emerged and are a reminder that resilience research remains contextual. Further examination of these themes will allow for greater opportunities to foster resilience within environmental educators.

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