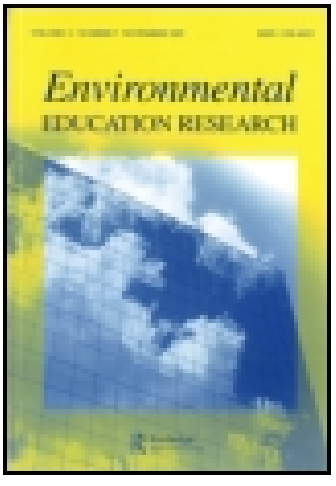

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Practitioners' perspectives on the purpose of environmental education

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Practitioners' perspectives on the purpose of environmental education

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Since the 1980s, scholars have suggested that environmental education (EE) has a 'definitional problem' represented by a multiplicity of perspectives that have critically impacted its discourse, practices, and outcomes. This study sought to investigate how North American EE practitioners from backgrounds ranging from formal and non-formal institutions think about their work. We focused on folk narratives and emerging urban environmental concerns of community education rather than reliance on academic opinion alone. Using Q methodology, the study identified five distinct perspectives that appear to represent different ways of prioritizing EE outcomes. All five perspectives were concerned with promoting sustainable living and improved human well-being, but the nuances suggest that an individual who adheres strongly to one may feel someone holding a contrasting perspective is working at cross-purposes. The authors suggest that understanding these perspectives can help reduce misunderstanding within the EE field.

Keywords: history of environmental education; environmental education perspectives; urban environmental education; environmental education critiques; Q methodology

Introduction

The emphasis environmental educators place on multiple, often competing educational and environmental outcomes not only determines the focus of their work, but may also contribute to discord about the purpose of environmental education (EE). Scholars have attempted to address these seemingly irreconcilable differences through various frameworks (e.g. Lucas 1972; Disinger 1997; Sauve 2005; Wals et al. 2008; Sterling 2010), some of which have fueled greater controversy (e.g. Jickling and Spork 1998; Fien 2000).

Recently, highly charged critiques from those outside and within EE have fomented debate about EE, challenging whether the field is implicit environmental advocacy or reasoned problem-solving, prescriptive behavior change or sound science education, democratic decision-making or critical thinking about social transformation (Disinger 1997; Holden 1997; Sauve 2005; Blumstein and Saylan 2007, Sanera 2008). Furthermore, EE's relevance is heightened in light of profound societal and environmental change for a growing urbanized population (Martine and Marshall

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2007), where social justice issues interact with threats of flooding, heat, drought, and other disturbances related to climate change. These new challenges simply add to the divisive questions about the goals of EE.

To address competing discourses scholars have relied on analyzing the EE literature to support a single organizing framework (e.g. Disinger 1997; Sauve 1999; Scott and Oulton 1999; Sauve 2005; Schulze 2005) with some notable exceptions describing the field through Q-Methodology research. Bowman (1972, cited in Disinger 1997) identified four dominant themes underlying college students' ideas about the determinants of environmental issues: biophysical, sociocultural, environmental management, and change; Townsend (1982) validated a set of concepts that participants from universities and environmental organizations felt were the basis of EE programs; Chou and Roth's (1995) study conducted Q-sorts with university faculty from Taiwan and Ohio to surface common and country-specific constructs that they felt students should know about the environment. While the approaches in these studies surface scholarly and expert opinions and even group differences, they emphasize beliefs about environmental issues and the basis of EE programs based almost exclusively on the responses of college students, and about what college students should prioritize in learning about the environment based on the responses of university faculty; and, as such they do not necessarily surface the broader perspectives of professional environmental educators as a group (including those from smaller organizations). For the present study, we postulated that the explanatory value of the prior studies may not represent the full range of folk narratives and emerging urban environmental concerns surrounding EE, including perspectives of those working in the field and those who may not have a college education. Thus, we undertook a Q-Methodology study to determine current perspectives of EE practitioners from across a wide range of people working in the field.

Different perspectives in EE

The history of American EE (Disinger 1997) is anchored in the early twentieth century nature study movement emerging from concern that urban migration would result in young people losing opportunities to learn from direct contact with nature (Bailey 1909; Comstock 1911). The US government promulgated conservation education for wise use of natural resources after the 1930s' failed agricultural practices and devastating droughts, and EE expanded further in the 1960s as concern for pollution increased. During this latter period, a new problem-solving approach to EE emerged (Stapp 1969; Stapp, Wals, and Stankorb 1996; Disinger 1997; Sauve 2005). Attempting to address the problem of competing EE meanings, Lucas (1972) defined three approaches to EE: learning about ecological processes/problems; outdoor nature education; and education for the environment. Though Lucas proposed the third approach as a means to transform existing power structures, its instrumental purpose spurred acrimonious debate in the literature due to its apparent contradiction with liberal education (e.g. Huckle 1993). For example, Jickling and Spork (1998) criticized education for the environment as instrumental advocacy, contradicting education's fundamental purpose, by being inherently deterministic and inviting co-option by ideologues, using words like 'promulgate,' 'indoctrinate,' 'propagandize,' and 'coercion.' They proposed an alternative liberal vision for EE where learners critically examined and reconstructed ideologies. Fien (2000), in turn, criticized Jickling and Spork's critique by highlighting that their liberal tenets were

encompassed in the multiple practices of education for the environment, including inquiry learning, logical and critical thinking, political literacy, and community problem-solving, which in fact represented a socially-critical orientation. Sauve (1999) further argued that EE as a problem-solving/behavior change discourse aligned with the 1977 Tbilisi Declaration, reflecting modernist notions of technical/scientific education, whereas a 1980s socially critical movement focused on postmodern issues of justice, action, economics, politics, and culture as emancipatory. Similarly, Wals et al. (2008) contrasted instrumental education for the environment that specified preferred behavior for a target group of 'receivers' towards individual and social change, with emancipatory education situated in shared power and individual empowerment.

This bipolar discourse reiterates a common framing for EE over the past 20 years, reflected in place-based education (Sobel 2004) vs. critical pedagogy of place (Gruenewald 2004) and considerations of scientific vs. indigenous knowledge (Van Damme and Neluvhalani 2004; Cole 2007; Shava 2008; Shava et al. 2010). Further, these and other propositions suggest that EE has multiple potentially competing goals and priorities – e.g. supporting school success (Lieberman and Hoody 1998; Ernst and Monroe 2004; Norman, Jennings, and Wahl 2006; Strife 2010; Crawford and Jordan, 2013), social emancipation (Stables and Bishop 2001; Bowers 2002; Cole 2007), a means to youth development (Jensen and Schnack 1997; Reid et al. 2008; Schusler and Krasny 2010), standards-based practice (Simmons 2004), or personal reflective processes (Hart, Jickling, and Kool 1999).

Several authors have attempted to reconcile competing discourses. They integrate modernist and postmodernist discourse in proposing a critical education for the environment such that educators work within communities to determine decisions about local practices (Scott and Oulton 1999). Wals et al. (2008) describe how individual EE programs integrate aspects of instrumental and emancipatory approaches, and Sterling (2010) uses notions of individual and social-ecological systems resilience, multiple loop learning, and transformative learning to emphasize instrumental (problem-solving and first loop learning) and intrinsic (reflective second loop learning) EE. Although Schusler and Krasny's (2010) work on EE as a means for positive youth development might be seen as an additional layer onto the instrumental approach, it also reconciles the dominant EE worldviews so that youth development aligns with liberal education.

Some authors have embraced divergent views as a potential strength in terms of critical reflection, discussion, and innovation (Krasny 2009; Sauve 1996; Schulze 2005; Scott 2009). However, the potential for negative outcomes from ideological discord and the lack of a logical taxonomy to interpret differences persists. For example, when common goals are elusive and one approach prioritized over others, the field may be construed as advocacy (Holden 1997; Sanera 2008) or as ineffective (Blumstein and Saylan 2007), thus rendering EE unworthy of funding or inclusion in addressing environmental crises. Given the emotional investment in environmental and community educators' work (Fraser and Brandt 2013), these critiques may result in apprehension and anxiety, with further detrimental effects on communication (cf. Stephan and Stephan 1985). Lack of a constructive dialog can also lead to confusion, ineffectiveness, and the stifling of innovation (Disinger 1997; Scott and Oulton 1999; Schulze 2005), as well as the exclusion of new and less powerful players, which is particularly important in the USA and other countries with growing minority and immigrant populations.

Recent attention to EE in urban communities (Kudryavtsev and Krasny 2012) and negative consequences of limited access to nature (Louv 2006) have spurred new discourses with the potential for innovation in EE practice. For example, Strife (2010) suggests a 'humanizing' EE discourse that highlights how EE benefits humans and others describing how urban community-based organizations are increasingly using local environmental learning and stewardship to advance youth and community development (Krasny and Tidball 2009b; Schusler et al. 2009; Krasny and Roth 2010; Krasny et al. 2013; Kudryavtsev and Krasny under review). Price, Simmons, and Krasny (2014) suggest the new subfield of 'community EE', encompassing EE for health and well-being in stressed communities. Finally, Krasny's (2012) proposal to redefine the field by creating resource exchange networks inclusive of communities whose concerns fall beyond the perceived boundaries of EE has generated contentious debate; this and concerns about the potential for derailing efforts to address critical social and environmental problems spurred the present research.

Research question and approach

Current EE trends suggest at least two dominant narratives, often labeled as instrumental and emancipatory. We proposed there may be a coherent set of beliefs across these overarching narratives borrowing from competing theories, not necessarily apparent to practitioners, but potentially discordant due to their implicit nature (see Sickler et al. 2006). This Q-sort methodology study leveraged educators' personal EE beliefs to surface the multiple perspectives in the field. The intent was to illuminate and make explicit practitioners' beliefs to support greater understanding across EE.

Methodology

Q Methodology is an established method to assess prevailing discourses about complex societal topics (Stephenson 1952; Brown 1993, 1996; McKeown and Thomas 1988). It starts by defining a concourse, or a set of statements with distinct claims about a central topic. Individuals familiar with the topic then arrange and order the statements based on how accurately each reflects their personal beliefs. This process, termed 'sorting' is a specific arrangement of the cards or sorts based on sorters' beliefs on the topic. The sorts for all sorters are then analyzed using an inverted factor analysis to reveal patterns of beliefs about the topic. The statements are the units of analysis and the patterns revealed are used to understand concurrent prevailing social perspectives (Watts and Stenner 2005).

Selecting the Q statements

A team of four researchers with different experience in EE compiled a broad range of statements (either verbatim or paraphrased to clarify the subject and valence) from sources including claims about EE on consumer websites, in academic programs, EE-related social network websites, scholarly literature, and comments during presentations or conversations at an environmental organization's conference. The aim was to compile the widest range of unique phrases that captured how EE was described, so that unique concepts could be winnowed. By comparing them, their number was reduced to 110 unique statements representing the initial data

corpus, organized along three broad categories: nature-oriented or nature-protective EE outcomes; urban EE emphasizing codependence between nature and people; and community education highlighting human-centric outcomes.

Next, two of the four who assembled the first data-set and two other researchers familiar with the EE literature examined the statements to identify gaps and refine the concourse. During this phase, the team worked to reach consensus on a reduced set of unique statements. The team attempted, where possible, to make links between statements and the literature on the purpose of EE, to identify statements that might not be in that literature, and if possible, to use a taxonomy to see if the statements contained redundancy that might weight the overall sample toward one direction. The final set of 35 statements appeared to describe 10 unique subcategories that were not considered a defining set, but rather, a way of describing the full concourse of statements that emphasized unique EE outcomes:

Environmental sustainability

These statements emphasized concern for environmental protection and natural resource conservation with an instrumental goal of teaching people the imperative of ecosystem protection. They reflected concern for non-human nature and preservation of pristine, wild spaces (Nash 1967).

Place-based

These emphasized local natural resources where people learn by observing nature change over time near their home as typified by Dewey's (1915) thesis, consistent with Sobel's (2004) principles of place-based learning.

Spirituality

These focused on a deep, personal connection with nature emphasizing an affective interconnection with the natural world where humans are inherently embedded in natural systems (Cohen 1990).

Cognitive

These described EE as a tool to increase knowledge and understanding of natural processes and systems, supporting systemic scientific thinking and critical analyses of environmental problems (Sauve 2005).

Collectivist

These focused on achieving positive societal goals, whether local or global, emphasizing how nature teaches people to love and respect one another, and improving humankind through collective action.

Agency

These highlighted empowering marginalized communities, promoting active citizenries, motivating people to solve complex environmental problems, and enhancing a

sense of agency and emancipation consistent with the socio-ecological movement described by Talero and de Gauthier (as cited in Sauve 2005).

Individualist

These situated EE as a utilitarian path to personal goal achievement where protecting nature has an instrumental and anthropocentric goal.

Problem-solvers

These highlighted tackling environmental problems and citizen stewardship.

Moral responsibility

This category focused on inculcating individual duty and responsibility toward nature as a path to fostering commitment to solve environmental problems, with close alignment with the theoretical framework for Value/Belief/Norm theory (e.g. Stern, Dietz, Abel, Guagnano, and Kalof 1999) to understand pro-environmental action.

Life skills

Lastly, these statements focused on the development of problem-solving skills irrespective of environmental outcomes. Nature, for these is a utilitarian tool for teaching life skills surrounding community action or youth development.

The final set of sort statements (Table 1) comprised between two and four statements in each category. Although these might have weighted to have more statements that were instrumental than emancipatory, the Q-sort technique treats each statement as unique and would address any disproportionate number of statements in the next level of analysis. For the sorting activity, all statements were assigned random numbers to avoid the perception of an implied order by the sorters.

Participant selection

Aligned with the intent of Q methodology, we sought out individuals with a wide range of experiences and viewpoints on EE, located throughout the central and eastern USA. Participants were 41 environmental educators from Florida, New Jersey, New York, North Carolina, Missouri, and Wisconsin, including university faculty and students, non-profit staff, state employees, and people in religious service. We recruited sorters from urban, suburban, and rural areas. Most had some direct involvement in advancing EE, with clear opinions on the field's purpose. Recruitment from a wide range of educators ensured that audiences they worked with also spanned a range of ages, including adults, youth, and young children.

They were recruited via email, telephone, referral from direct contacts, or through professional networks. In a few cases, a participant identified another person who they believed held a contrasting viewpoint of EE, and the researchers followed up on the recommendation.

Table 1. List of statements used for sorting by originating sub-category.

#	Statement
	Environmental sustainability
1	Primarily to teach people how to live sustainably
2	Primarily to teach people they must protect ecosystems
3	It's more important to save endangered wildlife than to worry about a few more people
	Place-based
4	Making school curriculum relevant connecting to where youth live
5	You can only learn about nature by seeing it change over time in your neighborhood
6	It's getting kids outside to discover nature at their doorstep
	Spirituality
7	It's using nature to reconnect people to their spiritual center
8	Teaching that nature has the same rights as people
9	Promotes the understanding that everything is connected to everything in nature
10	Nature education is the path to help us appreciate God through His work
	Cognitive
11	Once you know how the natural world works, you understand systems better
12	The best way to produce a scientifically – literate society
13	It's the best way to teach about how the scientific process works
14	It's about helping develop good thinking skills
	Collectivist
15	Restoring nature is the best way to bring communities together
16	Learning about nature creates more positive, nurturing, and emotionally healthy communities
17	Nature helps bring all of society together to solve the problems we share
18	Nature teaches us to love and respect one another like a good family
	Agency
19	Helps people with little or no access to nature become free thinkers
20	Nature teaches that we're all in it together, geographically, socially, and financially
21	Promotes active citizenry, motivating people to solve complex environmental problems
22	Motivating people to fight for their rights to clean and healthy places to live
	Individualist
23	Exposing students to the outdoors so they don't fear nature
24	It's teaching good, clean, and healthy recreation
25	Learning to protect the parts of the environment that nurture us as people
26	Outdoor learning helps build healthy families
	Behavior changers
27	It's the only way we're going to fix the problems created by people
28	Getting our children to be the next environmental stewards
29	We can use nature experiences to help people from cities tackle
30	Motivating people to take local actions to solve global problems
	Moral responsibility
31	Nature learning is the best way to teach about protection of wild things, even if they aren't cute
32	Fostering the commitment to solve environmental problems

(*Continued*)

Table 1. (*Continued*).

#	Statement
Problem solvers	
33	Nature is the best way to teach leadership
34	Nature learning teaches basic life skills
35	Putting students into challenging environments like the woods or mountains helps them develop good problem-solving skills

Conducting the Q sort

Most participants conducted the card sorting activity in face-to-face sessions facilitated by a researcher (23 Q sorts, 15 individually, and 8 in a group setting). The remaining 18 participants including one who lived in a remote setting sorted the cards based on written instructions. Irrespective of the in-person or email mode, the instructions asked participants to sort the statements according to the 'condition of instruction' as follows: 'We are interested in how you think about EE. We have a number of statements on these cards about ways in which people think about EE. Please sort the statements according to what you most believe (on your right) and least believe (on your left).' After the initial instruction, participants were then directed to continue with a stepwise sorting of each set until the statements represented seven categories – 'most believe' to 'least believe' – in a forced-normal data distribution, with more neutral statements aggregating toward the center of the distribution. This iterative process intended to facilitate participants' reflection on their personal viewpoints. The final sort was then recorded for use in the analysis.

Following confirmation that participants were satisfied with their sort, participants completed either a brief, semi-structured interview or written exercise to describe the rationale for their card choices at the extreme right and left of the distribution ('most like how I think/least like how I think'). The interviews and written responses were used to illuminate the perspectives that emerged from the statistical analysis of the sorts. As noted earlier, with Q methodology, the cards themselves represent the variables that reveal organized perspectives, and the interview responses support interpretation of the factor analysis that describes the perspectives after data analysis.

Data analysis

PQMethod version 2.20 freeware was used to perform factor analysis. A principal components factor analysis initially identified eight dominant factors or natural groupings of sorts based on how similar or dissimilar they are. In other words, participants with similar views on EE will be part of the same factor. A factor loading is determined for each Q sort, depicting its relationship with each factor. However, we noted a drop in loading of the relationships between sorts and factors after the fifth factor. A cut-off figure of 0.33, generally the point where loading demonstrated a distinct drop, was used to determine which factors would be retained for the rotation in the next step. This figure was determined by dividing the multiplier for the desired level of statistical significance (1.96 for $p < 0.05$) by the square root of the number of statements (e.g. Tufts and Jacobson 2010). Most of the significant correlations or factor loadings fell on the first five factors, and hence, these were retained

for rotation. That is, participants' sorts seemed aligned with the first five factors from the analysis. Most participants correlated high (or loaded) on to the first factor, with far fewer loading on the progressive factors.

Following the initial factor analysis, manual rotation was used to further clarify the meaning of the five subsequent factors. That is, after closely examining the original factors, it was determined that manual rather than program-generated rotations would be conducted to determine the final factors representing thinking about EE. This allowed the researchers to explore the various sorts in a way that eased interpretation of the original observations. Towards this, five consecutive manual rotations were conducted with pairs of factors – factors 1 and 3 were first rotated by an angle of −41°; second, factors 1 and 4 by an angle of −32°; third, factors 1 and 5 by an angle of −45°; fourth, factors 3 and 4 by −10°; and fifth, factors 3 and 5 by −13°. Five factors remained evident after these rotations, and automatic flagging was used to identify the statements that defined the factors. Based on the resulting groups of statements, several emergent factors indicated interpretations whose validity within a set appeared inconsistent, calling for a secondary analysis.

A varimax rotation was performed to clarify the loading factors across the sorts. Following the rotation, the software was directed to highlight or 'flag' individual sorts that represent a factor. These flagged sorts (as produced by individual participants) define the factors with which they are associated. The flagged sorts were analyzed a final time to generate an output file where sorters loaded in relation to one of the dominant factors in a way that they accounted for the most variance (Table 2).

Acknowledging the subjectivity in interpreting Q methodology results, the five perspectives and statements defining them were independently examined by two researchers. One researcher closely examined individual participants' sorts, highlighting statements that had been ranked high and low by each, to interpret the factor they represented. Another researcher used the data output file generated by PQMethod to examine the factor scores of each statement (Table 3) to identify the statements that were most representative of each factor. Statements whose ranks were 5 or higher were used to interpret the meaning of each factor, and if the loading warranted, the sixth highest ranked statement was also examined. Table 4 further clarifies and validates this interpretation of the factors, indicating the statements that distinguish each factor at $p = .01$ level of significance.

Of all the factors, the fifth emphasized ethical issues but demonstrated loading as significant for only one sort. This sorter's narrative revealed a focus on community empowerment, raising a concern that we may have omitted a group of educators. We note here that the statement 'Teaching nature has the same rights as people' was based on our initial background search of EE practitioners' description of the field's purpose and are representing one-way EE has been described, as instrumental rather than emancipatory since it has an explicit focus on transferring moral rights.

Thus, we reached out to seven new sorters from urban community-based education programs who might not perceive their work as EE even though their programs had environmental aspects. We hypothesized that these new participants might clarify or challenge the original results. We also slightly modified the condition of instruction as follows: 'We are interested in how you think about community education. We have a number of statements on these cards about ways in which people think about community education. Please sort the statements according to what you most believe (on your right) and least believe (on your left).'

Table 2. Factor matrix with defining sorts.

	Factor				
Participant #	F1	F2	F3	F4	F5
1	0.47	0.11	0.29	0.59*	−0.01
2	0.12	−0.11	0.09	0.04	0.78*
3	0.33	0.29	0.19	0.54	0.31
4	0.70*	0.18	0.24	0.12	0.00
5	0.38	0.40	0.21	0.48	0.07
6	0.49	0.49	0.19	0.46	0.19
7	0.52	0.35	0.27	0.41	0.29
8	0.29	0.14	0.64*	0.22	0.29
9	0.70*	0.15	0.12	0.35	0.14
10	0.19	0.46	0.10	0.43	0.49
11	0.10	0.06	0.80*	0.15	−0.03
12	0.38	−0.08	0.66*	0.05	0.22
13	0.66*	−0.17	0.47	0.30	0.14
14	0.37	0.02	0.60*	0.40	−0.06
15	0.13	−0.02	0.46	0.75*	−0.05
16	0.27	0.10	0.21	0.71*	0.05
17	0.11	0.04	0.33	0.62*	−0.01
18	0.08	0.54	0.64*	−0.04	−0.19
19	−0.12	0.19	0.51	0.49	0.28
20	0.57*	0.35	−0.07	0.29	−0.12
21	0.25	0.08	0.39	0.52	−0.24
22	0.40	−0.37	0.54	−0.06	0.40
23	0.80*	−0.18	−0.05	−0.04	0.32
24	0.18	0.25	0.72*	0.34	0.06
25	0.07	0.62*	0.05	0.33	0.14
26	0.64*	0.15	0.32	0.10	−0.11
27	0.31	0.17	0.71*	0.32	0.06
28	0.62*	0.11	0.34	−0.05	−0.09
29	0.43	0.22	0.22	−0.62*	0.05
30	0.06	−0.07	0.42	0.31	−0.32
31	−0.07	0.80*	0.05	0.01	−0.04
32	0.65*	−0.09	0.34	−0.03	0.31
33	−0.01	0.32	0.41	0.53	0.18
34	0.18	−0.37	0.67*	0.31	0.04
35	0.35	0.42	0.56	0.18	0.03
36	0.49	0.02	0.39	0.18	−0.36
37	0.18	0.26	0.45	0.29	0.36
38	0.19	0.48	0.37	0.37	0.24
39	0.07	0.84*	0.01	−0.27	−0.03
40	0.13	0.64*	−0.01	0.16	−0.12
41	0.63*	0.09	0.02	0.55	0.12
% Expl. Var.	16	11	17	14	6

*Represents a defining sort.

We compiled the data again and conducted a second analysis following the same procedures as the first. Once again, five factors emerged after the varimax rotation (following a series of six manual rotations), with the first four identical to those obtained in the initial analysis and percentage of variance explained by the five factors remaining identical. The fifth perspective now varied with relatively greater emphasis on youth development as a primary outcome for community education.

Table 3. Top ranked statement scores by factor.

No.	Statements	*Z* Score	Rank
Factor 1. Fundamental coexistence			
1	Primarily to teach people how to live sustainably	2.18	1
20	Nature teaches that we're all in it together, geographically, socially, and financially	1.38	2
32	Fostering the commitment to solve environmental problems	1.35	4
28	Getting our children to be the next environmental stewards	1.33	3
2	Primarily to teach people they must protect ecosystems	1.11	5
Factor 2. Spiritual instrumentalism			
9	Promotes the understanding that everything is connected to everything in nature	1.92	1
7	It's using nature to reconnect people to their spiritual center	1.86	2
10	Nature education is the path to help us appreciate God through His work	1.36	3
14	It's about helping develop good thinking skills	1.21	4
34	Nature learning teaches basic life skills	1.14	5
Factor 3. Moral stewardship			
9	Promotes the understanding that everything is connected to everything in nature	2.20	1
32	Fostering the commitment to solve environmental problems	1.70	2
31	Nature learning is the best way to teach about protection of wild things, even if they aren't cute	1.60	3
28	Getting our children to be the next environmental stewards	1.57	4
6	It's getting kids outside to discover nature at their doorstep	1.25	5
Factor 4. Skilled community activism			
21	Promotes active citizenry, motivating people to solve complex environmental problems	2.05	1
32	Fostering the commitment to solve environmental problems	1.78	2
30	Motivating people to take local actions to solve global problems	1.73	3
14	It's about helping develop good thinking skills	1.42	4
28	Getting our children to be the next environmental stewards	1.19	5
Factor 5. Social-ecological ethicists			
8	Teaching that nature has the same rights as people	1.93	1
9	Promotes the understanding that everything is connected to everything in nature	1.93	2
11	Once you know how the natural world works, you understand systems better	1.29	3
17	Nature helps bring all of society together to solve the problems we share	1.29	4
20	Nature teaches that we're all in it together, geographically, socially, and financially	1.29	5

Note: All statements are significant at $p < 0.05$.

Though this may be due to the changed condition of instruction, it nevertheless offered insight into the consistency of the original results. Moreover, despite using a different condition of instruction, the similarity between four of the five factors and only slight variation in the fifth factor demonstrated coherence and face validity of the original results. Examining sorters' narratives revealed that these perspectives were not explained by location, work history, or career interest.

Table 4. Distinguishing statements by factor.

No.	Statement	Z Score
Distinguishing Statements for Factor 1		
1	Primarily to teach people how to live sustainably	2.18
13	It's the best way to teach about how the scientific process works	−1.61
12	The best way to produce a scientifically- literate society	−1.93
Distinguishing Statements for Factor 2		
7	It's using nature to reconnect people to their spiritual center	1.86
10	Nature education is the path to help us appreciate God through His work	1.36
22	Motivating people to fight for their rights to clean and healthy places to live	−1.04
17	Nature helps bring all of society together to solve the problems we share	−1.69
3	It's more important to save endangered wildlife than to worry about a few more people	−2.41
Distinguishing Statements for Factor 3		
31	Nature learning is the best way to teach about protection of wild things, even if they aren't cute	1.60
Distinguishing Statements for Factor 4		
21	Promotes active citizenry, motivating people to solve complex environmental problems	2.05
30	Motivating people to take local actions to solve global problems	1.73
Distinguishing Statements for Factor 5		
8	Teaching that nature has the same rights as people	1.92
30	Motivating people to take local actions to solve global problems	−1.93

Note: All statements are significant at $p < 0.01$.

Results

This study revealed five social perspectives on EE in relation to those statements most likely to represent that perspective (Table 3). The first perspective prioritizes attributes that are more generally supported by the other four but not as the superordinate priority.

(1) *Fundamental coexistence*

This perspective prioritizes EE to support sustainable lifestyles through pro-environmental behaviors for human and non-human nature. It is egalitarian for its focus on people across socioeconomic boundaries sharing responsibility for sustainability aligned with the Earth Charter (2001). It accords respect and strives for protection of all life forms. Environmental protection is for the greater good rather than for human-centric goals, placing lower emphasis on environmental justice despite acknowledging that socioeconomic survival is necessary. A distinguishing feature relative to other perspectives is concern for sustainable human lifestyles, downplaying instrumental uses like teaching scientific process (Statement 13) or scientific literacy (S12). Instead, it resonated with the Earth Charter describing 'interdependent principles for a sustainable way of life as a common standard,' for protection of environmental systems within a somewhat complex set of social assumptions. Beyond specific principles, we see overlap of the perspective with the Charter's emphasis on universal responsibility, recognizing kinship with all nature, humans and non-humans alike, for a better global future.

(2) *Spiritual instrumentalism*

The second perspective prioritizes EE to facilitate spiritual connections among living beings and appreciation of all life and connections among living organisms. Consistent with Cohen's (1990) idea of humans' relationship to nature, this sensualist approach emphasizes humans' connections with nature by engaging all senses to understand the symbolic relationship between them. The three highest ranked statements describing this perspective prioritize 'belongingness' in nature as a stepping stone to greater connections with a spiritual being (based on the high loading of statement 10 stating 'God's work' alongside the other less specific statements). Even though each statement has a slightly different focus, our interpretation looks beyond individual statements to understand the theme they convey. To check if these results were a function of participants' affiliation with faith-based organizations, we examined the sorts of those who loaded high on this perspective. We found that two of the three who worked in faith-based environmental organizations indicated their beliefs aligned most with statements (7 and 9) emphasizing belongingness but they did not dispute the importance of statement 10 to their general worldviews. However, others not affiliated with religious organizations also believed most in the spiritual goal of EE (Statement 7). Hence, this perspective seemed to be held across educators, irrespective of the faith-based emphasis of their work. Contrasting with perspectives focusing on metaphysical relationships with nature (e.g. Mathews 1991), it emphasizes critical thinking and life skills. Youth or future generations are a focus for learning similar to a stance valuing the phenomenological and practical equally (Bonnet 2002). An emotional connection with nature is a prerequisite to nurturing environmental concern and action with a distinct emphasis on valuing spiritual work.

(3) *Moral stewardship*

This perspective emphasizes the human capacity for a profound sense of connection with different aspects of nature (S9, Table 3) by prioritizing ethical responsibility to tackle environmental problems (S32) similar to how Iozzi (1987) discussed moral development in relation to EE. Consistent with Values/Beliefs/Norms theory (Dietz, Stern, and Guagnano 1998; Stern et al. 1999; Stern 2000), personal norms to act in morally appropriate ways link universal values and responsible environmental actions (such as consumer behavior and environmental citizenship). This is also consistent with Cohen's (1990) altruistic framing of people within nature as a prerequisite for actions to protect it. A humanist, ethical aspect of environmental stewardship and connection with nature is emphasized, whereby all nature is considered equal.

(4) *Skilled community activism*

This perspective emphasizes emancipating the civically active, where EE is a means to empower communities in addressing their local needs. It is more aligned with Bullard's (1990) arguments about organizing community activism for improving health and well-being, focusing on environmental justice. Critical thinking skills are also a focus towards motivating citizens towards environmental justice efforts. A long-term focus on community outcomes is evident, where children are prepared for future environmental action. It supports the environmental justice movement acknowledging sociocultural hierarchies that Cole (2007) claims are excluded from mainstream EE discourses. Unlike Cole's contention, however, this perspective does not explicitly focus on one's immediate community; rather, it inclusively considers

any group's collective actions, without being limited to specific disenfranchised communities.

(5) *Social-ecological ethicists*

The fifth perspective depicts nature as deserving of moral consideration similar to that accorded to humans. It draws on natural systems as a moral guide to think about the non-human world, downplaying an action-oriented stance to solve environmental problems. It acknowledges a fundamental bond between all life forms, with non-human nature accorded justice and extending moral consideration to the environment consistent with Clayton's (2000, 2003) environmental identity research. This perspective values cognitive processes to facilitate understanding natural systems, collectivist approaches upholding unity among people working towards shared goals, and commonalities across demographic boundaries. Unlike the other perspectives, this emphasizes a psychological bond across disparate groups of people, fortifying what is considered an inherent affiliation based on Wilson's (1984) biophilia hypothesis and Clayton and Opotow's (2003) idea of environmental identity as a negotiation to expand scope of justice.

Positive youth development through the lens of EE

While not part of a traditional Q-methodology study, the secondary validity experiment explored whether or not the fifth perspective surfaced unique community education perspectives. We found that the seven additional sorts and different condition of instruction clarified the fifth perspective without altering the other four perspectives. This second version of the fifth perspective offered more evidence for its focus on skill development through place-based learning, especially in local contexts (see Table 5). These results suggest that some working in EE place emphasis on skill development that can be achieved through outdoor learning irrespective of the natural ecological systems. Engaging youth in skill development, community betterment, and civic responsibility are central to outcomes for urban, multi-generational environmental learning through community gardening and other civic ecology programs (Krasny and Tidball 2009a, 2009b, in press; Krasny et al. 2013). This perspective emphasizes local environmental action among youth, considered to instill deeper

Table 5. Youth development in analysis with community educators.

No.	Statements	Z Score	Rank
Top ranked statements for factor 5			
8	Teaching that nature has the same rights as people	1.93	1
9	Promotes the understanding that everything is connected to everything in nature	1.93	2
11	Once you know how the natural world works, you understand systems better	1.29	3
17	Nature helps bring all of society together to solve the problems we share	1.29	4
20	Nature teaches that we're all in it together, geographically, socially, and financially	1.29	5
Distinguishing statements for factor 5			
8	Teaching that nature has the same rights as people	1.92	
30	Motivating people to take local actions to solve global problems	−1.93	

appreciation of nature (S30). EE serves an instrumental purpose with lower priority on spiritual, moral connections with nature similar to participatory approaches to education (Læssøe and Krasny 2013). Unlike Mayer-Smith, Bartosh, and Peterat (2009) who documented local farms as settings for positive youth development, this perspective suggests that EE might have community emancipatory value, fostering political action to improve the local environment.

Critical to contemporary urban EE trends, this perspective subsumes youth development as integral to EE (Schusler and Krasny 2010). By clarifying this last factor when shifted from 'environmental' to 'community' suggests that further exploration with community educators is needed to fully represent the definition of the term 'environment.'

Discussion

This study uncovered five perspectives among environmental educators – one broadly encompassing elements that seemed supported more universally by all participants, three focusing on distinct outcomes to improve environments, and a fifth emphasizing community outcomes. These perspectives, while drawing on a wide range of worldviews, appear to have an underlying narrative that reflects a coexistence principle of humans with other life forms. Interestingly, the five perspectives seem to cross dominant discourses in EE, including the emancipatory versus instrumental divide, integrating seemingly unrelated ideologies into a single perspective. One explanation of this unexpected result is that the debates in the EE literature pitting EE as a means toward an environmental quality end, vs. EE as part of a tradition of liberal education, stem from the work of scholars, rather than from empirical studies of practitioners such as this one. In this regard, it is important to note that a paper by Wals et al. (2008) describe four actual EE programs that integrate both orientations.

We do not suggest that the perspectives uncovered in this study resolve the debate among EE scholars about the purpose of the field, but rather, contend that there are common values held by all practitioners of both EE and community-based EE.

Q methodology does not suggest the representativeness of any perspective, but rather, describes dominant perspectives that characterize the discourse surrounding a topic. The perspectives that emerged from this study are more nuanced, bearing little resemblance to the single-dimensional constructs relevant to curriculum development (e.g. environmental management, interdependence, population, and quality of life) described in Chou and Roth's (1995) Q methodology study. Similarly, the perspectives from the current study go beyond the understanding of factors related to environmental problems as Bowman (1972) found, or the themes underlying EE programs (Townsend 1982; the results from this study are not available). Rather, our results indicate what our sample thinks of EE, surfacing ways in which the criticality of environmental problems and the foci of EE programs may be encompassed. Moreover, the range of perspectives we found may have surfaced through a more diverse group of practicing educators, compared to participants holding scholarly opinions in the other Q sort studies; the two decades between the studies, witnessing numerous social and scholarly changes may also have been a factor.

Nonetheless, inspection of the results demonstrates a deeply philosophical continuity across perspectives that may be less apparent when priorities are contested

passionately. Despite revealing five distinct perspectives, the secondary and tertiary loadings on these perspectives suggest most people hold rather mutable perspectives that are more nuanced by personal values rather than any philosophical contrasts.

The academic focus on defining purposes or challenging whose purpose EE serves may be indiscernible to the average practitioner unless pressed to choose. Consistent with the assertion that a cross-disciplinary, multifaceted, and socially diverse approach to EE is necessary for environmental learning (Scott and Oulton 1999; Krasny 2012; Krasny and Dillon 2013) is awareness and appreciation of the nuanced different perspectives. Recognizing that these perspectives share many common attributes may help educators prioritize their own personal goals as slightly different from those of their colleagues and to come to agreement on shared outcomes in any collaborative project.

Practitioners' perspectives in EE

Coexistence of humans and other aspects of nature constituted the single, strongest unifying thread linking EE views, but was superordinate only in the first perspective. The second thread recognizes the centrality of spirituality with promoting individual thinking skills. This was intriguing because spiritual purpose rarely appears in the EE academic literature, appearing instead in deep ecology or ecopsychology movements (e.g.: Macy 1983; Kinsley 1995; Rozak, Gomez, and Kanner 1995; Macy and Johnson 2012) and in how communities of faith approach environmental concerns. The third thread, inculcating moral responsibility towards environmental protection, may reflect a more behaviorist or problem-solving trend (Stapp 1969; Hungerford and Volk 1990) whereas the fourth, effecting community outcomes through skill development and activism, appears loosely consistent with Jensen and Schnack's (1997) work. Alternatively, given that Hungerford, Stapp, and others advocate a problem-solving approach incorporating skill development into EE, the primarily moral/behaviorist perspective found in the third thread might manifest in a practical way, by taking concrete steps to protect the environment. Finally, the fifth thread integrates environment as key to positive youth and community development (Krasny and Tidball 2009a; Schusler and Krasny in press). It should be noted that the common goal of sustaining human and non-human nature, alongside the four specific foci differing on substantive measurable outcomes (spirituality, moral responsibility, emancipation, and ethical connections/positive youth and community development), do not necessarily preclude other outcomes because the activities involved in achieving them may be similar.

These perspectives allow drawing a number of inferences. Table 6 indicates that for three of the five perspectives, promoting the understanding that everything in nature is connected was considered important to EE (see S9); whether to serve spiritual needs (second perspective), or to acknowledge the bonds across human and non-human nature (third and fifth perspectives), these ideas about EE emphasize the larger world in which humans are embedded.

Table 6 also highlights that many participants view pro-environmental behavior as a moral imperative, articulating EE's role as fostering an ethical stance to environmental action (S32). Whether inculcating pro-environmental behaviors on a general level (first perspective), or fostering a personal commitment to be environmentally responsible (third perspective), or through community action (fourth perspective), an emphasis on the behavioral outcomes of EE is evident. An

Table 6. Factor scores with corresponding ranks of statements grouped by category.

No.	Statement	Factors F1	F2	F3	F4	F5
Environmental sustainability						
1	Primarily to teach people how to live sustainably	1	15	13	10	13
2	Primarily to teach people they must protect ecosystems	5	29	11	15	22
3	It's more important to save endangered wildlife than to worry about a few more people	29	35	31	34	22
Place-based						
4	Making school curriculum relevant connecting to where youth live	13	14	21	6	29
5	You can only learn about nature by seeing it change over time in your neighborhood	30	25	33	21	13
6	It's getting kids outside to discover nature at their doorstep*	16	6*	5*	23	22
Spirituality						
7	It's using nature to reconnect people to their spiritual center	12	2	34	30	29
8	Teaching that nature has the same rights as people	20	33	25	29	2
9	Promotes the understanding that everything is connected to everything in nature*	6	1*	1*	14	2*
10	Nature education is the path to help us appreciate God through His work	34	3	35	35	35
Cognitive						
11	Once you know how the natural world works, you understand systems better	17	10	6	9	6
12	The best way to produce a scientifically- literate society	35	9	12	8	29
13	It's the best way to teach about how the scientific process works	33	18	18	11	22
14	It's about helping develop good thinking skills*	27	4*	23	4*	13
Collectivist						
15	Restoring nature is the best way to bring communities together	19	23	28	20	33
16	Learning about nature creates more positive, nurturing, emotionally healthy communities	7	13	14	24	13
17	Nature helps bring all of society together to solve the problems we share	9	32	22	13	6
18	Nature teaches us to love and respect one another like a good family	26	17	27	33	29
Agency						
19	Helps people with little or no access to nature become free thinkers	32	21	30	27	22
20	Nature teaches that we're all in it together, geographically, socially, and financially	2	16	17	17	6
21	Promotes active citizenry, motivating people to solve complex environmental problems	11	29	9	1	33
22	Motivating people to fight for their rights to clean and healthy places to live	10	31	20	7	13
Individualist						
23	Exposing students to the outdoors so they don't fear nature	14	24	10	19	33
24	It's teaching good clean healthy recreation	22	26	29	32	22

(*Continued*)

Table 6. (*Continued*).

No.	Statement	Factors				
		F1	F2	F3	F4	F5
25	Learning to protect the parts of the environment that nurture us as people	21	22	8	16	29
26	Outdoor learning helps build healthy families	25	7	26	26	13
Problem solvers						
27	It's the only way we're going to fix the problems created by people	28	34	24	12	22
28	Getting our children to be the next environmental stewards*	4*	11	4*	5*	6
29	We can use nature experiences to help people from cities tackle . . .	15	30	15	18	29
30	Motivating people to take local actions to solve global problems	8	12	7	3	35
Moral responsibility						
31	Nature learning is the best way to teach about protection of wild things, even if they aren't cute	18	20	3	31	33
32	Fostering the commitment to solve environmental problems*	3*	19	2*	2*	22
Life skills						
33	Nature is the best way to teach leadership	31	27	32	25	13
34	Nature learning teaches basic life skills	23	5	19	28	22
35	Putting students into challenging environments like the woods or mountains helps them develop good problem solving skills	24	8	16	22	29

*Statements that received high ranking across factors.
Statement numbers do not correspond to numbers used in the sorting exercise.

implicit acknowledgement of the Tbilisi Declaration (UNESCO 1977) is evident in its definition of an environmentally responsible citizen – someone aware of specific environmental conditions and motivated and capable of acting to ameliorate them.

Embedded in three of the five perspectives is an understanding that EE goals necessitate education for environmental stewardship to transition smoothly to future generations (S28). Whether educating youth about principles of sustainability (first perspective), fostering moral responsibility (third perspective), or developing future activists (fourth perspective), building children's competence and stewardship is important, reflecting a symbiotic relationship between youth competencies and their local communities' assets (Chawla and Heft 2002; Chawla and Cushing 2007). The youth-centric focus in this study is strong enough to suggest that lifelong adult education may be downplayed in EE. This perspective emerged when we included a group of community educators, most of whose work focused on youth and community development. Based on this, it appears that the fifth perspective reflected the emphasis they place on youth outcomes in their work.

Interpreting a specific set of statements in a perspective depends on their relationship with the other statements. In Table 6, the ranks for S6 in the second and third perspectives suggest that connections with local nature may promote spiritual ties and also develop youth's commitment to environmental protection. These two separate interpretations of a statement suggest an attempt to reconcile experiences with nature with those in the students' community, and that these two outcomes of nature connections may not be mutually exclusive as suggested (Gass 1999;

D'Amato and Krasny 2011). Thus, personal growth from experiencing spirituality in nature and from perceiving natural principles in everyday settings and the resulting cognitive development may occur concurrently.

An explicit focus on cognitive outcomes, like critical thinking skills, is also evident in the ranks for S14, in the second and fourth perspectives. They are distinguished in that the former focused on meta-cognitive outcomes of connecting with nature, while the latter specified a concrete goal (community empowerment) toward which critical thinking skills are aimed. EE then provides the means for a community to grow intellectually and positively impact its well-being (cf. Strife 2010).

We commenced this effort with recognition that EE scholars have framed EE roughly around instrumental and emancipatory perspectives. We feel this study suggests that this debate is more useful for rhetorical purposes than the more focused purposes that our participants – EE practitioners – are concerned about in their work. None of the perspectives represented a solely emancipatory or instrument purpose but rather, reflected an underlying moral code that respects principles of coexistence as central to any selected outcome. We suggest that academics may offer clarity to the moral arguments put forward by various EE practitioners by using their emancipatory/instrumental dichotomies, but we believe that most practitioners will benefit by considering the shared values they all hold toward the diverse communities and natural environments where they work. That is, that EE practitioners recognize the value of integrated social and ecological thinking and goals, rather than engage in the debate about the superordinate purpose for the field.

Future research and limitations

The study participants' backgrounds were linked to EE in some way, even though some may identify as community rather than environmental educators. Based on the emergent emancipatory positive youth development narrative, further exploration with community educators who use environmental learning as a means toward youth development, but work under different conditions of instruction than most environmental educators, may clarify its relevance. We speculate that a more controlled study of 'community education' narratives might challenge the use of the 'environmental' label as a catch-all for the field, given its potential to mislead those less focused on the word's ecological interpretation.

We also caution that although these results emerged with a moderately heterogeneous, ethnically diverse group, it comprised primarily English-speaking Americans from the Midwest and East and may not represent all possible perspectives. Replication of this study with a more regionally representative group will help clarify the universality of these and other perspectives. While the debate that spurred this research encompassed international perspectives on EE, we also focused on a North American sample rather than a cross-cultural group since it was part of an effort striving to expand capacity within EE in North America. For replication in other international settings, we recommend a process similar to that described in the paper, but that which aligns with EE priorities in the countries where the study will be conducted.

Conclusions

According to Sauve (1999, 15–16), the problem 'is not the existence of a wide range of conceptions of EE. Rather, it is the fact that there is often a wide gap between

discourse and practice (rarely clarified), and this leads to confusion and a loss of effectiveness …' We suggest that divisive attempts to define the field among scholars and practitioners have derailed the debate from focusing on critical social and environmental issues that practitioners believe can be addressed, sometimes with very similar tools. We also speculate that divisiveness may in fact perpetuate existing perceptions of scholars' worldviews and consequently negatively impact motivations toward collaborative efforts. This study provides evidence for the gap between academic discourse and practice in showing that field practitioners' views integrate multiple sides of debates from EE academic scholarship. In the contemporary world of burgeoning environmental concerns in urban and other communities, the need for a shared language to appreciate different points of view and work together to achieve mutually benefiting goals becomes critical. In such a climate, our results highlighting the overlapping core of apparently conflicting scholarly perspectives, and of a shared value among diverse practitioners about the importance of coexistence of humans with other life forms, can offer a starting point for a conversation. We hope that the multiple and perhaps counter-intuitive worldviews revealed through this work will help further discussions to link scholarship and practice among researchers and educators.

At times when EE comes under scrutiny and even attack, one response has been to corral the forces and redefine ourselves more narrowly and purposefully. While this boundary defining may be helpful in explaining to the outside world what EE is and is not, creating such boundaries also creates divisions – for example, community educators who use environmental learning as a means for addressing multiple social and environmental stresses facing urban communities may feel excluded from EE. At the same time, multiple viewpoints lead to innovations, which are desperately needed if EE is to help address ever-changing and more challenging environmental and social problems. With this in mind, we suggest open-mindedness to a diversity of perspectives on EE, and hope that this study will help spur exchange about ideas and innovations among the EE and closely aligned communities.

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