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**Adult Learners and the Environment in Last Century: An Historical Analysis of
Environmental Adult Education**

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Abstract

Environmental adult education (EAE) combines environmental education and adult learning theory to provide meaningful educative experiences to learners with the purpose of bringing about genuine environmental change. The field is relatively new, but its body of literature is growing in the twenty-first century. This paper conducts an historical analysis of EAE literature to date. The resulting summary provides scholars and practitioners in the fields of environmental adult education, environmental education, and adult education a platform to engage in dialogue about future directions for the field based on historical trends and lessons.

Introduction

Environmental adult education (EAE) is a relatively new and unique field of practice and study (Clover, 1997; Karlovic and Patrick, 2003), recognized as “a hybrid outgrowth of the environmental movement and adult education, combining an ecological orientation with a learning paradigm to provide a vigorous educational approach to environmental concerns” (Sumner, 2003, p. 41). EAE first appeared in the literature as a distinct field of study in the mid-1970s (Emmelin, 1976). In the one hundred years prior, EAE scholars assert that environmental educators often taught factual information and focused on individual behavior change to stop environmental degradation, and made few efforts to reach diverse adult learners. Instructors’ messages were received over and over by the same students from the same socio-economic classes. Educators rarely reached new audiences resulting in little genuine change and learners feeling hopeless about their ability to impact environmental degradation (Clover, 1995a; Jansen, 1995).

The EAE movement was born when environmental educators paired environmental education with adult education in order to reach new populations and to facilitate broader, more genuine change. Since it was first conceptualized in the 1970s the study of environmental adult education has seen certain trends. In the late 1980s EAE focused mostly on learner experience. In the late 1990s and early 2000s the focus shifted more toward how to teach EAE. More recent EAE articles reveal a desire to better conceptualize environmental adult education theory, and how to best implement EAE practices. Additionally, later work in the field stresses activism and social change as a by-product of EAE, an element not emphasized in earlier literature.

This paper conducts a historical analysis of relevant research in the field of environmental adult education, including extensive document review and text analysis. According to Lang and Heiss (1998), the purpose of historical research is to create an “integrative narrative...based on a

critical analysis and synthesis of sources” (p. 66). This analysis will attempt to create such a narrative for environmental adult education by identifying concepts, trends, and themes of EAE. The text is based on an extensive literature review process where the following questions served as a framework when examining each environmental adult education text:

- How is environmental adult education conceptualized or defined by the author?
- What other philosophies, educational models, practices, or principles does the researcher cite as contributions to EAE study and practice?
- How does the piece outline or contribute to the history of the EAE movement?

The following report is a chronological synthesis of the textual analysis. This narrative offers a platform for both scholars and practitioners to engage in dialogue about future directions for the field based on historical trends and lessons.

The Foundations of Environmental Adult Education

Environmental adult education literature is almost nonexistent until the mid-1970s. In 1976, Emmelin published an article titled, “The Need for Environmental Education for Adults”. This is one of the first works that makes a distinction between environmental education and environmental adult education. The text examines the strengths and limitations of two types of environmental education for adults commonly practiced in the 1970s – the media and environmental action. The author argues that media such as television, radio, and print media are an effective form of environmental education, because they impart knowledge by providing basic information about environmental problems. He also argues that the focus on emotional as opposed to factual information is a major downside to mass media, as citizens are less informed and instead driven by emotional messages.

Emmelin (1976) further asserts that environmental action, or direct participation in issues to enhance learning, leads to environmental change but has limited educational value. Time constraints at events such as sit-ins makes detailed analysis of issues difficult, and Emmelin argues that this type of learning is not an effective substitute for classes, workshops, trainings, and seminars. Short term, one-day events such as Earth Day and Forest Week are other forms of environmental action, but they do not focus on continuous citizen involvement and therefore have limited impact over time.

Emmelin (1976) recognizes environmental adult education as a more effective way to solve environmental problems. He identifies the formal, financially supported university environment as a good venue for environmental adult education, but also argues that non-formal programs are possible within organizations. This early work stresses that environmental adult education must be taught effectively to make a true impact. Also, the author notes that EAE can be both non-formal and formal. He also explains the limitations of the solely action-based, behavior change model used by environmental educators. This article sets the tone for further discussions in EAE literature, and many of the issues Emmelin highlights are carried through to modern literature.

A Call for Sustainable Development

The next body of literature about EAE did not appear until the late 1980s, and it is limited. Some practitioners attributed the wave of literature during this time to the publication of two major documents in 1987. The United Nations (UN) published a report titled *Our Common Future*, also referred to as the *Brundtland Report* (Brundtland, 1987). This document is credited for inspiring the first Earth Summit, an international conference on the environment and development, in 1992 (UNSD, 2005). The UN’s Environment Program released another major

report titled *Environmental Perspective to the Year 2000 and Beyond* (UNEP, 1987; Yarmol-Franko, 1989). These documents brought environmental problems to the forefront of world issues at that time.

In the wave of EAE literature that followed the two UN reports in the 1980s, authors first recognize the importance of focusing on strategies for achieving sustainable development in environmental adult education; the only consistently cited goal of EAE in this body of literature (Ibinkule-Johnson, 1989; Sutton, 1989; Yarmol-Franko, 1989). The literature focuses primarily on developing countries, and how to improve the quality of life for EAE participants. For the first time, some practitioners briefly suggest political action as a goal of EAE. Finger (1989) notes educative practices depend on commitment and action.

Researchers do not discuss specific strategies for initiating or encouraging action. Articles focus primarily on programming, rather than developing theory. Most works review specific programs and assess work done from an environmental education perspective, rather than an EAE perspective. Reports are primarily results-oriented, and focused on quantitative data as opposed to the qualitative focus of later works. Yarmol-Franko (1989) also notes for the first time that ordinary decision makers should be involved in the environmental decision-making process, as opposed to only the highly educated. It is important to note, however, that few concrete suggestions are given during this period of study on *how* to involve those decision makers. Most of the literature during this time offers little specific information about EAE theory, but rather approaches it with broad strokes. While EAE is recognized as a distinct area of study none of the literature during this period cites adult learning theory or teaching techniques.

A major contribution to environmental adult education research in the 1980s involved a case study of seven ecologically minded adults. Finger (1989) revealed that environmental adult education must be an adult transformation in order to have a true impact. Transformation is defined as “a total phenomenon including cognitive, emotional, as well as action dimensions” (p. 27). The study reveals four major themes within the subjects’ lives that contributed to their environmental adult transformation: fundamental motivations, particular contexts of motivation, personal experiences, and experiences inside institutions. Finger concludes that environmental adult transformation is necessary in environmental adult education, and that environmental or ecological knowledge does not contribute as significantly as transformation. He regards knowledge acquisition as a less-meaningful form of learning. Similarly, Yarmol-Franko (1989) asserts:

[W]e are reminded that the key to achieving sustainable development is the transformation in the way we think and live, both individually and collectively. We must break habits and throw away norms as the environment becomes a running theme throughout our lives. Environmental adult education works to achieve this transformation (p. 4).

This lays a framework for many later writings that argue EAE should be an experiential and dialogical process – a theme explored at length in later literature.

Learners as Participants

From the early 1990s on, a fairly steady stream of literature emerged in the field of environmental adult education. Yet as a discipline EAE still has a relatively small body of knowledge to date. This body of literature has seen two major trends. In the early 1990s, authors continue to cite sustainable development as the overall goal of EAE (Mikkelson, 1992; Nickerson, 1992; Parker and Towner, 1993). Practitioners begin to discuss specifically how to involve citizens and every-day decision makers in the change process. Scholars also recognize the general population as active participants engaged through participatory processes when

provided relevant information, access to that information, educational opportunities, and an awareness of their rights (Mikkelsen, 1992; Viezzer, 1992). Environmental adult educators argue that the role of instructors is to guide participants to take appropriate action and to encourage them to take part in the learning process by truly acknowledging their input. Similarly, Welsh (1993) encourages EAE educators to take action in order to counteract participants' feelings of powerlessness. Parker and Towner (1993) express a need for communities to address their own environmental problems by engaging in "community environmental action through education, training and access to information" (p. 208).

Another trend during this period is that authors place environmental problems in a global context, and educators note that learners need tools to bring local issues to the global stage. Without that connection, practitioners assert, learning is far less comprehensive because it fails to communicate the urgency and scope of global environmental degradation. Scholars emphasize humans and their relationship to the Earth during the teaching and learning process in order to bring the global context into the process (Nickerson, 1992; Mische, 1992). The first mention of the environmental inequalities between wealthy and poor nations appears in the early 1990s, and environmental adult educators are encouraged to address those inequalities in their teaching (Mische, 1992; Viezzer, 1992). Usang (1993) notes dialogue education is a positive strategy for teaching environmental adult education, but this concept is not explored at length until later. Parker (1993) further asserts that learners must be guided to find their own moral and ethical beliefs about environmental issues as opposed to having them dictated by instructors. Parker and Towner (1993) also make a unique recommendation to develop training models for environmental adult educators (for more about training EAE educators see Haugen, 2006).

A significant contribution during this time is the concept that the environment can not be superimposed onto academic curricula, but rather must be interwoven into the human way of living and being. Miche (1992) looks to early human groups for insight about how to do so in modern societies. She notes that although ancient societies possessed varying beliefs, they shared two things in common with respect to the way they viewed the environment. First, they balanced the common good with individual needs. Groups lived in community living situations and relied on the cooperation of all members in order to stay alive. Second, early humans balanced relationships and activities in four spheres: (1) the biosphere, or the Earth's natural systems; (2) the technosphere, or human structures and activities that altered the natural world; (3) the sociosphere, or the systems humans had in place to ensure positive relations between humans and the first two spheres; and (4) the human mind and spirit sphere.

Miche (1992) argues that modern societies consider the environment as a separate subject to teach, but environmental adult education is more effective if it permeates participants' lives and ethical core. This ensures humans develop a sense of ecological responsibility and a deeper commitment to the Earth as a system that simultaneously supports and coexists with humans. Environmentalists should, she argues, see EAE not only a way of educating, but also a way of living and being. This is a concept that environmental adult educators still strive to instill in their learners.

EAE as A Unique Body of Knowledge

The mid to late 1990s brought further significant changes to environmental adult education theory. Educators continue to assert that the general population is aware of environmental problems, and teaching and learning models begin to note that knowledge building fails to include learner input in the teaching process. Authors recognize positive teaching and learning

practices as those that focus more on the knowledge, perceptions, and ideas of ordinary citizens, and less on environmental experts. They acknowledge that knowledge building contributes to an overall understanding of issues (Roy, 2000), but process is the recognized goal of learning. During this period environmental adult educators recognize that environmental education is not meeting the needs of adult learners (Clover, 1995a; Jansen, 1995; Lengwati, 1995; Papen, 1997; UNESCO, 1999). Practitioners also note the importance of all community members' input in the EAE process, regardless of their educational level or knowledge base. Environmental adult educators assert that a strong relationship between humans and nature is needed to strengthen the environmental ethic discussed earlier in the decade (Clover, 1995a; Lengwati, 1995; Clover 1996).

Two significant contributions appeared in the EAE field during the mid to late 1990s. First, in 1997 environmental adult education appeared as a session during the Fifth International Conference on Adult Education, sponsored by UNESCO. This is the first time at a UNESCO adult education conference that EAE is recognized as a separate body of knowledge. The session presents scholars and practitioners one of the first opportunities to focus on the challenges and opportunities in the field, as well as recommendations for further development (UNESCO, 1999).

The second major contribution in late 1990s is that environmental adult educators recognize that in order to truly address environmental issues, the underlying socio-political factors that contribute to environmental destruction have to be considered in teaching and learning practices. Clover (1995a) notes that environmental adult education initially moved away from environmental education, because it did not give a "holistic view of nature, politics, society, and culture" (p. 47). Many educators recognize that including oppressed groups that typically suffer most from environmental degradation and social injustice is a key component that distinguishes EAE from environmental education. As a result, scholars turn to the philosophies of other major education movements including feminist, indigenous, popular, and non-formal education as a way to best address the socio-political factors present in environmental issues.

Theoretical Models as Guides

The contributing theoretical frameworks that helped form environmental adult education theory in the late 1990s are outlined here. The synopsis offered here is by no means comprehensive, but rather sheds light on some primary thinkers, and their contributions to the field. The purpose is not to explore each of these educational theories in depth, but rather to define and discuss them briefly, especially as they relate to environmental adult education theory during this period.

Feminist education, also referred to as feminist pedagogy:

[B]egins with the premise that men and women are unequal and have differential access to power structures. This has led to a distortion in the construction of knowledge itself, so that what counts as knowledge as much of what we learn in the formal educational process are one-sided and biased (Ng, 1995, p. 131).

In traditional education women are marginalized and considered less effective or important contributors to the teaching and learning process. Conversely, in feminist education women are included in the decision-making process and considered equal contributors. In feminist education learners treat everyone with equal respect, and question the underlying factors in society that causes inequalities in education, in order to break the traditional power structures from within the learning process (Gore, 1993). Feminist educators factor gender and power

issues into educational practices and assert that women should be included in social action to make change happen, but argue that both men and women have important contributions to make.

Environmental adult education literature asserts that environmental adult educators engage the feminist education model and give females a voice by taking their perspectives into account in the EAE teaching and learning process. Environmental adult educators draw feminist education theory into EAE theory, and assert that true social transformation and genuine solutions to environmental issues surface only when women's perspectives are taken into account (Clover, 1995a).

Indigenous education, also referred to as native education or aboriginal education, is based on the notion that indigenous students learn differently based on their cultural backgrounds. They struggle more in traditional classroom settings because of their "diversity in culture, thinking, experience, and learning", and "students are... marginalized in the public school and university systems through Westernized curricula and pedagogy" (Doige, 2003, p. 145), because they do not learn the same as mainstream students. Indigenous students have been disenfranchised for centuries, and until relatively recently educators did not acknowledge that their lower academic performance was attributed to lack of cultural understanding. Failing to meet needs and connect with learners leads to high drop out rates among indigenous learners because students feel their education is irrelevant to their daily lives and rich history. Non-indigenous teachers do not relate to their students, which causes serious cultural clashes (Magga, 2005). Educators who focus on traditional indigenous teaching and learning methodologies are better able to meet students' needs (Archibald, 2002).

"Indigenous education is intrinsically connected with culture, language, land and knowledgeable elders and teachers" (Lambe, 2002, p. 308). Indigenous learning is life-long, and extends beyond the formal classroom setting (Hill and Stairs, 2002). Researchers promote teaching and learning practices that focus on traditional indigenous educational methods including spiritually based models and the involvement of tribal leaders and indigenous people at all level of planning, programming, and administration. Such methods, which are key to best meet the needs of indigenous learners, also include training opportunities for non-indigenous teachers, the encouragement of high quality educational opportunities at all levels, and the communication of a high level of respect of native cultures (Archibald, 2002; Hill and Stairs, 2002; Lambe, 2002; Doige, 2003; Magga, 2005).

Environmental adult educators use indigenous education theory as a foundation for EAE because it emphasizes connections to the Earth as a framework for pedagogy. Indigenous theory stresses a deep connection to the Earth, and considers nature a teacher and spiritual guide. The model of a more peaceful, sustainable relationship with nature is an important guide for environmental adult educators. Also, indigenous populations worldwide have often been the subjects of massive, institutional oppression, and so listening to their voices is important in EAE practices. Environmental adult education draws on feminist and indigenous theories, and incorporates those theories into its practices by including women and indigenous people in decision-making processes. EAE also "provides community members with a framework of analytical constructs to help them to summarize, explain, systematize and support their own experiences. It also challenges them to think critically and make links they may not otherwise make" (Clover, 1995a, p. 48).

Popular education has a rich history. Antonio Gramsci, an Italian Marxist imprisoned because of his radical socialist views, started the popular education movement (Burke, 1996). The

current theoretical base was established in Latin America in the 1960s (Foley, 1998). Gramsci examined the power struggles between the ruling and working classes, and argued that the dominant class maintained its power because the working, or subordinate, classes accepted their positions in life, and instead needed to rise up to fight oppressions (Burke, 1996).

Many theorists consider Paulo Freire the father of popular education. During his revolutionary work with poor, illiterate farmers in Brazil he made several discoveries about the power structures that contributed to low education levels among the disenfranchised. Exiled for his work in the mid-1960s, Freire wrote several works that continue to influence educational thought today, and are still considered controversial. He challenged traditional schooling, and argued that it was a system that cast teachers in the role of oppressors and learners in the role of oppressed. The culturally accepted model of the teacher as an all knowing being and the student as a vessel waiting to be filled with knowledge from the teacher, commonly referred to as the “banking model”, perpetuated the predetermined, class-based system of success and failure. He challenged educators to examine traditional roles and the underlying social factors that created them so that the learners could truly learn (Freire, 1970).

Freire developed the dialogue education model where learners and educators learn from each other in a dialogue that flows two ways, as opposed to the conventional monological, one-way banking model system (Srinivasan, 1977; Smith, 1998; McLaren, 2000). Foley (1998) offers a modern definition of popular education as: “forms of education which involve people in critical processes of critical analysis so that they can act collectively to address inequalities and injustices. It [is]... education and learning which expands public knowledge of important social issues, extends democratic participation in all spheres of life and furthers social justice goals” (p. 140). Learners are empowered to fight issues through meaningful, legitimate educational opportunities.

Environmental adult educators draw on popular education’s examination of the socio-political factors that lie at the root of environmental problems, just as popular educators look to those factors and how they affect educational opportunity (Clover, 1995; Beveridge, 1996). EAE theorists argue that educators who do not examine those factors fail to lead meaningful learning experiences. Environmental adult educators empower learners to fight underlying factors that contribute to environmental problems (Lengwati, 1995; Villarosa-Tanchiling, 1997), and use popular education as a model.

Freire also influenced non-formal education theory. It is important to distinguish non-formal education (NFE), which is organized learning that occurs outside the formal system as a feature of broader activities, from informal education, which is:

[T]he truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment –from family and neighbours, from work and play, from the market place, the library and the mass media (Smith, 1996, second section).

Non-formal education takes on many forms from vocational education to literacy education to on the job training in all age groups (Torres, 2001). Four features distinguish NFE from other forms of education: (1) learning is relevant to students who did not learn well in the formal system; (2) learning has a clear purpose and goals; (3) curriculum is flexible to accommodate learners and educational systems; and (4) it is concerned with a certain clientele (Smith, 1996). NFE is often non-credential based, and seeks to solve problems in communities that are “not only education such as illiteracy and functional literacy...[i]n many cases they are more basic such as poverty, deterioration of the environment, lack of water, [and] poor health status” (Mueller, Consuegra and Maruzi, 1996, first paragraph).

Non-formal education, like environmental adult education, emphasizes examining root causes of social problems in order to find viable solutions. Early EAE theorist Emmelin asserts that environmental adult education is both formal and non-formal, and Clover (1997) argues that governments should rely more on adult non-formal educational opportunities to teach EAE. She also asserts that environmental education should take place within the learners' communities in non-formal settings (Clover, 1995b). For these reasons, the principles of NFE are an important contributing factor to EAE teaching and learning theory.

During the late 1990s, EAE practitioners examined feminist, indigenous, popular, and non-formal education theory to determine how each philosophy built the theoretical base of environmental adult education. Conceptualizing how each body of knowledge contributed to EAE enabled environmental adult educators to determine how the principles and practices in the field were influenced by other disciplines. This was the most significant contribution to the field during this period, and a review of each discipline illustrates those influences and lays the groundwork for research in the 2000s.

Articulating a Coherent EAE Theory

Scholars in the 2000s move away from anchoring EAE to other theoretical frames, and focus on better articulating EAE theory and how it distinguishes itself from other philosophies. Scholars start to break away from those connections to establish EAE as a unique field of study, as illustrated by Clover and Hill (2003):

The fundamental challenge for environmental adult education worldwide has been to articulate a theory and practice that adequately addresses contemporary social and environmental problems, encapsulates the complexity of human-earth relations, and provides new ways of learning to live with the earth on just and equitable terms (p. 89-90).

Overwhelmingly, EAE theorists strive to better define and conceptualize environmental adult education during this period. Environmental adult educators also examine environmental education programs, a practice popular in the 1980s that waned in the 1990s (Clover, 2000; Ellis, 2000; Oliver, 2000; Roy, 2000; Wittmer and Johnson, 2000; Barndt, 2002; Guevara, 2002; Kapoor, 2003).

During the 2000s, environmental adult educators encourage learners to engage in dialogue to find answers to their problems, and identify the causes of those problems. EAE is defined not as top-down, monological learning, but rather as a dialogical, community based approach to finding answers for environmental problems (Butterworth and Fisher, 2002; Clover, 2002b; Bélanger, 2003; Kapoor, 2003; Sumner, 2003). Environmental adult educators recognize all learners have a contribution to make, regardless of their educational, racial, or social background (UNESCO, 1999; Clover, 2002a). Literature during this period considers environmental problems as an outgrowth of social, political, economic, and cultural issues (UNESCO, 1999), and ignoring these issues in environmental teaching and learning is irresponsible.

Additionally, in this period environmental adult educators recognize the factors that interfere with learners' ability to engage in social action, especially across political borders, and stress that taking action against those issues is a necessary step for environmental change (Chatterjee, 1999; Barndt, 2002; Butterworth and Fisher, 2002; Clover, 2002b; Clover and Hill, 2003; Hill and Johnston, 2003). Rather than fixating on limiting factors, however, Clover (2002a) asserts that learners possess the capacity to bring on change. Hill (2003) notes that environmental adult education encourages participants to engage in activism in order to fight environmental

degradation and “reverse the hazardous impacts” of oppression (p. 28). New environmental knowledge serves the purpose of empowering learners to make change happen.

Significant contributions during this period identify EAE as transformation, and link EAE to experiential learning and social movements. In the early twenty-first century, environmental adult educators enforce the notion that EAE should move away from the knowledge acquisition model, and suggest including transformation as a key element. For example, Kovan and Dirkx (2003) argue that transformative learning theorists believe a sense of calling or spiritual dimension must be present during the knowledge acquisition process in order for it to be meaningful for learners. Similarly, Clover (2000) states teaching ecological knowledge happens and must be acknowledged, but is limited because it simply addresses lack of awareness and is not transformational; she specifies EAE is a transformational process. Further, Kovan and Dirkx (2003) acknowledge that transformative experiences counteract feelings of hopelessness often felt by environmentalists under previous models. Researchers connect two formerly explored notions about EAE that had not been previously linked, and conclude that transformation is not possible under the traditional knowledge acquisition model.

Whittmer and Johnson (2000) argue that the use of experiential education is an effective way to teach EAE. David Kolb (1984) developed a theory of experiential education to explain how people learn best. His cycle of learning consists of four domains: concrete experience, observation and reflection, forming abstract concepts, and testing in new situations (Smith, 2001). Kolb argues people learn best within certain domains due to experience and personal preference. Transformation occurs during the final stage (Kolb, 1984). Learning during other stages of the cycle challenges participants to see information in new ways.

Whittmer and Johnson (2000) illustrate the use of experiential education in EAE in their account of the Audubon Expedition Institute (AEI). The program had three faculty members and eighteen graduate students in environmental studies or environmental education around the world learning about environmental issues first hand. The AEI teaching mode is based on Kolb’s theories of experiential education, and the instructors argue it leads to an effective form of EAE. AEI developed its own model of experiential education: preparation, direct experience, reflection, and transformation. Unlike Kolb’s model, however, the AEI model emphasized transformation in the third step, with action being the focus of the final step. The combination of respecting learners’ experience and emphasis on action led to effective EAE during the program. For the same reasons, experiential learning is considered an effective model for teaching environmental adult education in all contexts. The authors emphasize respect for participant experience in order to make learning more meaningful.

It should be noted, however, that the voices of oppressed populations are considered neither in Kolb’s nor AEI’s model. Since their experiences are significantly different than those of individuals from dominant, mainstream society, it is important to take underlying causes of that oppression into consideration when contemplating experience. Environmental adult educators stress the importance of listening to these long silenced voices, so it is important to highlight the omission. This example, however, still effectively illustrated how learner experience is important in EAE, and how the experiential education model is useful to EAE practitioners.

Social movements have long been characterized as groups that engage in social action to fight oppression. In the twenty-first century, practitioners examine the relationship between EAE and social movements for the first time. This allows environmental adult educators to examine the root causes of, and solutions for, environmental problems, and encourages them to become activists like their colleagues engaged in social movements. By employing the same techniques

social action groups used to eliminate racial, class, and gender oppression, environmental adult education practitioners have dynamic, effective participation with diverse audiences. Scholars during this period note EAE and social movements share common goals of eradicating certain social injustices, a strong partnership first illuminated in this body of literature (Clover, 2003; Hill, 2003; Hill and Johnston, 2003). Likewise, Hill (2002) recognizes the role of social movements and examines the relationships between oppressors and the oppressed, and considers this an important exercise for environmental adult educators. This combined with listening to voices of the oppressed leads to the participation of more diverse audiences.

DISCUSSION AND CONCLUSION

A comprehensive review of environmental adult education literature illustrates its complexity. Scholars recognize EAE as a distinct body of knowledge in the 1970s, and note it is an informal or formal process that grew out of a response to limited one-day action campaigns and media outlets that sent overly emotional and ineffective messages. Significant contributions in the 1980s illustrate a trend of steering away from the traditional knowledge-based approach of environmental education as vital for EAE. Authors consider transformative environmental adult education more effective.

The environmental adult education literature of the early 1990s indicates environmentalism should permeate every aspect of learners' lives by learning to create a lasting environmental ethic in order to facilitate change. During the late 1990s, EAE enters the international realm when it is recognized at a conference on adult education sponsored by UNESCO, and practitioners attempt to bring more meaning to theory and practice by aligning EAE with other disciplines. In this century, environmental adult educators commit themselves to clarifying the goals of EAE.

Combining the principles and theory of EAE explored through this literature review reveals several concepts that, when woven together, reveal overarching themes that lead to a better understanding of the field. Environmental adult education is a unique field of practice, but draws on the theories of several other fields to better articulate a rapidly developing body of knowledge. Popular education seeks to empower participants and encourages them to be activists, as does EAE. By including women and indigenous people in the teaching and learning process, environmental adult educators also bring in the principles of feminist and indigenous knowledge (Clover, 1995a). EAE practices can be formal or non-formal (Emmelin, 1976), and non-formal education principles influence EAE theory.

EAE is a dialogical process, and environmental adult educators go to great lengths to ensure the learning environment is conducive to effective learning (Butterworth and Fisher, 2002; Clover, 2002b; Bélanger, 2003; Kapoor, 2003; Sumner, 2003). EAE challenges the traditional role of teacher and student, involving learners in the planning and implementation process in order to empower participants to make change happen. Environmental adult educators stress the importance of activism to fight the root causes of environmental problems such as racism and sexism, strive to involve learners from all positions in society, and recognize that all stakeholders have a contribution to make and a role to play (Barndt, 2002; Butterworth and Fisher, 2002; Clover, 2002b; Clover and Hill, 2003; Hill and Johnston, 2003; Hill, 2003).

While environmental knowledge contributes to EAE, it must be a transformative, inclusive process to be truly effective (Finger, 1989; Clover, 2002b). Further, environmentalism is not just taught or learned, but is a way of living and being (Mische, 1992). Teachers use nature to remind learners of their connections to the Earth and to help them appreciate natural wonders through experience with them (Clover, 1997).

Environmental adult education is an engaging, inclusive, active educational approach drawn from multiple disciplines that informs and empowers learners to become activists. EAE transforms learning into action by addressing the root causes of environmental problems. Environmental adult educators hope learners will come away with knowledge of environmental problems and the causes of those problems, the skills to engage in social activism and to combat environmental problems, and attitudes of respect and reverence for the natural environment. This comprehensive understanding, formulated through a historical review, serves as a foundation for future dialogue about EAE theory and practice.

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