

Environmental Learning Approaches that Promotes Positive Action in Learners

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Abstract

This article focuses on environmental learning approaches that promotes positive action. It uses desk research and document analysis to capture and understand environmental learning and environmental learning approaches that promote positive action. There was an agreement in the literature that learning was a complicated process and thus different definitions of it. It was revealed in this desk research that people going to national parks and other natural wonders for relaxation, pleasure or even when persons join an environmental organization to support policy efforts of that organization constitutes environmental learning. However, the researcher argues that environmental learning is learning about, for and in the environment. Further, there was consensus in the literature that not all learning approaches are appropriate for environmental learning. The researcher posts that appropriate environmental learning approaches should ultimately lead to positive actions.

Introduction

The existence of humans is mired with numerous environmental issues such as famine, land degradation and climate change. In order to manage these environmental challenges, humans need an appropriate kind of learning which can help them to be empowered with relevant knowledge and skills for the good of the planet and ultimately the good of humans. There are various learning approaches but not all are appropriate for action taking. Environmental learning approaches should ultimately lead to positive actions. The aim of this study was to establish environmental learning approaches that

promote positive action. To do achieve this, a review of literature on learning and environmental learning was done. Essentially, the review gazes at how scholars have tackled environmental learning approaches. It is envisioned that this work will contribute to the understanding of environmental learning approaches that can promote positive actions in learners. In this piece of work, action and agency will be used interchangeably. Further, positive actions in this study will mean taking specific steps to improve quality of the immediate surrounding or solving environmental issues.

Key words: learning, environmental learning, environmental approaches.

Concept of Learning

Learning is a complicated activity that involves various parts of the brain, parts of the body and multiple biochemical, bioelectrical, biomechanical processes (Falk, 2011) and immediate environment or surrounding. Thus the process of learning may result in different reactions by different persons as each person's body mechanism is inimitable and thus may responds in view of that. In view of the above, it is expected that scholars may have different conceptions of what learning is. According to Falk and Dierking (2000), people learn through a continuous process of connecting past experiences to the current, relating what is happening in the present to what has happened previously. It is contextually driven and entails some form of negotiation between the individual and his or her social/cultural and physical environment (Falk, 2011). Change in behavior, knowledge construction and social practice are also a result of learning (Falk, 2011). Thus all learning can be said to be a broad term that brings about not only changes related to facts and concepts, but also to feelings, attitudes and behaviors (Damasio, 1994; Falk, 2011). However, learning remains a concealed clout as long as the empowered person does not use the knowledge to do something to perform some task, understand something, make a decision or solve a problem (Cegarra-Navarro, Martinez-Martinez, Ortega Gutiérrez, Antonio Luis, Leal Rodríguez, 2013). In this subjective and socially

constructed world, the above conceptions of what learning is, may prove to be limited in some sense. However, I found the above conceptions appropriate for this discourse. Thus, learning should lead to modification of behavior in a positive way; behavior that is modified could be knowledge, attitude or practice of a person or group of people.

Concept of Environmental Learning

Since ‘environment’ as a topic is not confined to formal education as both the issues related to the environment and our knowledge and understanding of environmental processes are ever-changing, most environmental learning is acquired outside of the formal school (Falk, 2011). However, this is not to say that environmental learning does not take place in formal education systems. For example, the University of Zambia has been leading other institutions in Zambia by making sure that the Zambian population acquires environmental learning through programmes such as environmental education and outreach programmes. Environmental education programme at the University of Zambia is offered both at undergraduate and postgraduate levels.

In terms of environmental learning that takes place out of school, people may go to national parks and other natural phenomena to satisfy their inquisitiveness and to fulfill their needs for relaxation, pleasure, intellectual stimulation and even spiritual fulfillment (Brody *et al.*, 2002; Heimlich *et al.*, 2004). Even when persons join an environmental organization to support policy efforts of that organization, learning happens (Falk, 2011). In Zambia, out of school learning happens by visits to game parks, Munda Wanga Botanic garden, natural wonders like the Victoria Falls or being part of environmental clubs. Further still, radio programmes like the Chingololo club of the air, television programme such as Lima and television channels such as national geographical channel are instrumental as far as environmental learning is concerned. However, this kind of learning may not reflect the principles of environmental education or education for sustainable development satisfactorily as it may not foster agency in people, especially in situations where

people go to view nature for leisure and relaxation.

Environmental learning in general entails continuous acquisition of new knowledge, as well as developing the ability to engage in new environmental behavior and practice (Hein, 1991). On the other hand, environmental learning should not only end at acquisition of new knowledge and engaging in new behavior and practices. It should also help learners to interrogate, reflect and critic their own values. This is important because values influence individual's actions.

All environmental learning (whether it be in the form of Environmental Education, Ecological Education or Education for Sustainable Development) aims to incorporate environmental thinking and ideas into learner's everyday lives (Ministry of Education British Columbia (MOE), 2000). In order to foster positive action however, environmental learning should not only incorporate environmental thinking in the learners. It should incorporate approaches that promote value clarifications as it is a well-known fact that values influence decisions and behavior. Values clarification may encourage learners to tap on their inner reservoirs of resources and strengths and ultimately help them to take positive actions.

Environmental learning promotes a trans disciplinary and multi-disciplinary approach to the understanding of environmental problems. It calls for the use of multiple models of teaching and learning, as well as teachers' own pedagogical content knowledge to form a unique blend of disciplinary knowledge combined with teachers' knowledge about specific learning contexts (MOE, 2000). Environmental Learning should be collaborative (ready to execute social capabilities), empowering (unravel innovativeness and potential contribution that lies in every human), emancipation (critiquing, construct and act with autonomy) and transformational (embracing and adapting to new situations) (GPA, SADC and SWEDES, 2012; SWEDES and SADC REEP, 2013). Yet still, it should also be interrogative whereby learners should interrogate their values and actions in order for them to take positive actions thereafter.

Since environmental learning is a component of environmental education, environmental learning should be learning about environment (environmental issue), in the environment (experiential) and eventually for the environment (agency). Environmental learning should foster the acquisition (through direct experience) and sharing of knowledge, skills, values; interrogation of values and practices, developing empathy, unlearning of bad behaviour and taking positive action.

Unlearning is one concept that has attracted academic attention for a long time (De Holan and Phillips, 2004; Becker, 2005, 2008, 2010; Cegarra and Sanchez, 2008) and cannot be left out when discussing environmental learning. Because environmental issues are complex, there are misconceptions on what they really are, their causes and effects and how to manage them. Misconceptions are common especially among the rural communities. In a study conducted by Muchanga (2013) on the causes of climate change in Lusaka province of Zambia, he discovered that respondents associated climate change with witchcraft and indicated that their ancestors were frustrated by the moral decay in communities. It is such misconceptions that need to be unlearned and be replaced by new knowledge, values and positive actions for the good of the environment.

Appropriate Learning Approaches

There are various learning approaches but some are more suitable for positive action. This is because simply learning about the environment does not automatically lead to action needed for the good of the planet earth. Appropriate approaches should be those that promote experiential and hands-on activities where learners are actively engaged and focused on environmental problems and challenges (EETAP 1998; 2001). All things being equal, if an approach is used where learners are actively engaged and focused on problem solving but then a positive action does not follow after learning, that approach should not be considered as appropriate. Environmental issues should not just be about facts but a matter of concern and therefore demands for positive actions. The following

are some of environmental learning approaches that may lead to appropriate action for environmental learning:

Experiential Learning

Experiential learning is a process of making meaning from direct experience. It is some form of learning that incorporates direct experience, critical reflection and negotiation as a foundation for the learning process (MOE, 2000). Experiential learning is closely associated with constructivist theories. According to these theories, learning experiences should be designed to enhance exploration, extrapolation and elaborations based on experiences and mental constructions where prior knowledge forms a foundation for mental construction (Elliott et al., 2000). This in itself limits the importance of an educator in the learning process. However, the role of an educator can never be over emphasised. In whatever way, he / she stands out to be an indispensable entity in the process of learning. In experiential learning, learners are powerful active participants in the learning situation (Schulze, 2005). They are given a chance to discover things and hence promote creative and critical thinking (Hmelo-Silver, 2004). The purpose of the learning process is to enable learners develop as individuals and acquire knowledge, understanding, skills, attitudes and values that will help them to contribute and benefit from a sustainable future (OECD, 2018). In the experiential learning approach, learners should develop real world skills through hands on (Robert, 2018) in finding solutions to environmental problems.

Experiential learning requires learners to act on information by transforming it into new, personal meaning. Learners need certain abilities to gain factual knowledge from an experience. These capabilities are use of analytical skill to intellectualize the experience, active involvement in the experience, reflection on the experience and possessing decision making and problem solving skill in order to use new ideas gained from experience (SWEDES and SADC REEP, 2013). Even though direct experience, critical reflection, decision making and problem solving skill are enhanced through

experiential learning approach, intellectual engagement (reading and sharing reading materials) that can be done in class or outside class is equally critical for positive actions in the learning process. This is because not all learners learn through tactile approaches. Experiential learning combined with intellectual engagement can lead to positive actions.

Authentic Learning

Learning in environmental education should be focused and authentic. This means that learning should be about real threats/problems and solutions to these challenges in the local environment. In authentic learning, learners should be able to make linkages between their learning experiences and the real world and have a sense of purpose in their learning (OECD, 2018). Since the basis of authentic learning is about real life activities (authentic tasks) in real-world settings, authentic learning for the people of Mufulira District in the Copperbelt province of Zambia for example could include learning about pollution and finding solutions to the problem. Pollution from the Mopane Copper Mine had been a challenge and a serious health risk to the people of Mufulira District (Chipatu, 2010). Morris and Stoney, (2007) articulate that the environment presents educators with wide range of learning context which could make learning interesting and enjoyable. Educators are thus expected to use community sources of information like newspapers, community groups such as clubs and indigenous knowledge available in the community (Dreyer and Loubser, 2005) to foster authentic learning among the learners. Authentic learning is helpful in making learners understand interconnections and interactions among the ecological, social, political and economic processes and to cope better with the complexity of the environment (Gurevitz, 1988). Although this approach promotes learning and taking action about real threats in the local environment, positive actions should not be limited to the local environments. Learners are part of the global village and therefore should be empowered to take positive actions in their local environments/context and outside their local environments.

Problem Solving

This is about investigating environmental issues with a focus on specific problems in the local community (Evans, 2000). Problem solving promotes effective collaboration skills and intrinsic motivation in learners, effective problem skills and development of supple knowledge (Bilgin, Senocak and Sozbilir, 2009; Dochy et al., 2003; Norman and Schmidt; 2000; Woods, 2000). Problem solving as an approach entails self-directed learning on the part of the learners. Self-directed learning requires that learners take on responsibility for their own learning by diagnosing their own personal learning needs, setting goals, identifying resources, implementing strategies and evaluating the outcomes (Knowles, 1975). However, self-directed learning does not mean learning in isolation but assistance can be sought from friends, an educator and acquaintances in both the planning and execution of the learning activity (Merriam and Caffarella, 1991). Since problem solving promotes collaborative skills, it is not unusual for learners to work in teams. Conversely, team working has the potential of hindering a person's individual effort by way of being ignored by others and therefore defeating the sole purpose of taking collective positive actions.

Inquiry- Based Learning

Inquiry based learning entails that learners acquire thinking and analytical skills (Sanjaya, 2006) rather than memorization of the subject matter. Inquiry learning involves learners raising questions about pertinent issues, analyzing real issues and making effort to respond to the raised questions which ultimately may lead to possible actions (SWEDISH and SADC REEP, 2013). Inquiry based learning calls for use of higher thought processes and requires learners to gather comprehensive amount of information on an environmental problem, issue or risk if their learning is to be meaningful. It is argued that critical thinking skills towards resolution of environmental issues are a key trait of an environmentally literate citizenry (Loubser, 2005). Inquiry based learning can help learners to become critical thinkers with attributes of logical reasoning, creative

thinking and problem solving abilities. It embraces knowledge, the ability to use and control thinking skills, and a positive attitude to using the knowledge and thinking skills required. Further, inquiry based learning help students to express opinions and find their own knowledge that is useful for solving problems (Andrini, 2016). Inquiry based learning is a form self-directed learning. Learners are expected to take responsibility of their own learning without depending on someone to tell them what to do. However, it is not always possible for learners to inquiry and make decisions that would translate in positive actions. Therefore, this approach may not be appropriate for positive actions thus need to combine it with other approaches.

Co-operative Learning

Cooperative learning is an approach to group work that makes best use of the learning and contentment that result from working in groups (Felder and Brent 2007). Cooperative learning involves the use of small groups so that students work together to maximize their own and each other's learning. Co-operatively taught students tend to demonstrate high-level reasoning and critical thinking skills as well as a deeper understanding of learned material which is critical to solving environmental issues (Felder and Brent, 2007). An educator guides and facilitates the learning to develop a sense of collective responsibility for the well-being of the group, the wider community and the environment (SWEDESD and SADC REEP, 2013). Learning that aims to benefit all can strengthen and inform actions for a sustainable future. Learners must work in teams to complete tasks collectively towards academic goals (SWEDESD and SADC REEP, 2013).As much as co-operative learning can strengthen and inform actions, it may not do so in all categories of learners. This is true in the younger learners who may have to depend on an educator for conflict-resolution and other issues that come with group dynamics.

Conclusion

This paper focused on environmental learning approaches that can promote action in the learners. There was an agreement in the literature that learning was a complicated process and thus different definitions of it. It was revealed in this desk research that people going to national parks and other natural wonders for relaxation, pleasure or even when persons join an environmental organization to support policy efforts of that organization constitutes environmental learning. Further, there was consensus in the literature that not all learning approaches are appropriate for environmental learning. It was also discovered that even those approaches that were appropriate for environmental learning, not all fostered positive action and this stood to be of some significant. Appropriate environmental learning approaches are those that can help humans develop the capacity to modify their ways of life, take action for the good of the environment and, ultimately, live in harmony with nature.

References

- Andrini, V. S. (2016). The Effectiveness of Inquiry Learning Method to Enhance Students' Learning Outcome: A Theoretical and Empirical Review, *Journal of Education and Practice* Vol.7, No.3, pp38-42
- Becker, K. (2005). *Individual and organizational unlearning: directions for future research*, *International Journal of Organizational Behavior*, Vol. 9 No. 7, pp. 659-70.
- Bilgin, I., Senocak, E. & Sozibilir, M. (2009). The effect of problem based learning instruction on university students' performance of conceptual and quantitative problem in gas concepts. *Eurasia Journal of Mathematics, Science and Technology Education*, 5(2), pp. 153-164.
- Boiral, O. (2002). "*Tacit knowledge and environmental management*", *Long Range Planning*,

- Brody, M., Tomkiewicz, W. and Graves, J. (2002). *Park visitors' understandings, values and beliefs related to their experience at Midway Geyser Basin, Yellowstone National Park, USA*, International Journal of Science Education, Vol 24(11), 1119–1141.
- Cegarra, J.G. and Sanchez, M. (2008). *Linking the individual forgetting context with Customer capital from a seller's perspective*, Journal of the Operational Research Society, Vol. 59 No. 12, pp. 1614-23. Vol. 35 No. 3, pp. 291-317.
- Chipatu, L. (2010). *Environmental Education to Address the Negative Impacts of Copper Mining in Kankoyo Township of Copperbelt Province of Zambia*. Unpublishedbthesis.
- Damasio, A. R. (1994). *Descartes' error: emotion, reason and the human brain*, New York: Avon Books.
- De Holan, P.M. and Phillips, N. (2004). *The remembrance of things past? The dynamics of Organizational forgetting*, Management Science, Vol. 50 No. 11, pp. 1603-13.
- Dochy, F., Segers, M., Ven den Bossche, P. & Gijbels, D. (2003). *Effect of problem based learning: a meta analysis*. Learning and Instruction, 13, pp. 553-568.
- Dreyer, J and Loubser, C.. (2005). *Curriculum development, teaching and learning for the environment*. In C.P Loubser (Ed.), *Environmental education; some South African perspectives* (pp 127-153).Pretoria: Van Schaik Publisher.
- EETAP (1998). *Project learning tree (PLT):Hands- on learning in environmental education*. *Environmental Education and Training Partnership*, September 1998 (23).www.ag.ohio-state.edu/~cetap/pdf/info23.pdf
- EETAP.(2000). *Fusing multiculturalism and environmental education*. *Environmental Education and Training Partnership*, December 2000 (97). www.ag.ohio-state.edu/~cetap/pdf/info97.pdf.
- Elliott, S.N., Kratochwill, T.R., Littlefield Cook, J. & Travers, J. (2000). *Educational psychology: Effective teaching, effective learning (3rd ed.)*. Boston, MA: McGraw-Hill College.

- Evans, M.M.2002. Children can make a difference using problem solving,action oriented approach to environmental education. Seattle: New Horizon for Learning.
- Falk, (2011). *Free-choice environmental learning: framing the discussion*. London: Routledge.
- Falk, J. H. and Dierking, L. D. (2000). *Learning from museums: visitor experiences and the making of meaning*. Walnut Creek, CA: Altamira Press.
- Felder, R.M and Brent, R, Co-operative Learning chapter 4 of P.A. Mabrouk, ed., *Active Learning: Models from the Analytical Sciences*, ACS symposium Series 970. Washington, DC: American Chemical Society, 2007, pp. 34-53. A general overview of definitions and methods and methods of co-operative learning and a review of CL applications in Chemistry
- GAP, SW EDES and SADC REEP. (2012). *Learning for Change Facilitators Work Pack*. Howick
- Guarevitz, R.1988.Childrens' awareness and understanding of nature and environmentalism. PhD Thesis. London: University College.
- Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review*, 16, pp. 235–266.
- Hein, G.E. (1991). *Constructivist learning theory*. Massachusetts: Lesley College. New York: NY, pp. 3-27.
- Heimlich, J. E., Falk, J. H., Bronnenkant, K. and Barlage, J. (2004). *Measuring the learning outcomes of adult visitors to zoos and aquariums: phase I technical report* (Annapolis, MD, Institute for Learning Innovation).
- Klugman, J. (2010). *Human development report 2010*. New York: United Nations Development Programme.
- Knowles, M. (1975) *Self-directed learning: A guide for learners and teachers*, New York: Cambridge Books.
- Lieberman, G. A. & Hoody, L. L. (1998) Closing the achievement gap: using the environment as an integrating context for learning. Results of a nationwide study (San Diego, CA, State Education and Environment Roundtable).

- Merriam, S. and Caffarella, R. (1991). *Learning in Adulthood*. San Francisco: Jossey-Bass, 159-180.
- Ministry of Education (MOE) (British Columbia), (2000). *Environmental Learning: An interdisciplinary guide for teachers*, www.bctf.ca/eepsa (accessed in 14/07/2015).
- Morris, M and Stoney, S. 1997. Effective schools; active students? Slough: National Foundation for Educational Research.
- Muchanga, M. (2013). *Learning For Climate Change Adaptation among Selected Communities of Lusaka Province*, Vol 29:94-114.
- Ndaruga, M.A, (2013). *Innovative Environmental Methodologies: Case Study Analysis on Practice*. Nairobi: Manilla Publisher,
- Norman, G.R. & Schmidt, H.G. (2000). Effectiveness of problem based learning curricula: Theory, practice and paper darts. *Medical Education*, 34, pp. 721-728.
- Organisation for Economic Co-operation and Development (OECD) (2018) *The future of education and skills 2030: The future we want*, OECD.
- Robert, J (2018). *The Possibilities and Limitations of Experiential Learning in Higher Education*. *Journal of Experiential Education* 2018, Vol. 41(1) 3–7.
- Sanjaya, W. (2006). *Strategi Pembelajaran*. Jakarta: Kencana Prenada Media Group.
- Schulze, S. (2005). *Paradigms, ethics and religion in environmental education*. In C.P Loubser (Ed.), *Environmental education; some South African perspectives* (pp 57-71). Pretoria: Van Schaik Publisher.
- SWEDES and SADCREEP. (2013). *Mainstreaming Education for Sustainable Development (ESD) in Teacher Education*. Gaborone.
- SWEDES and SADCREEP. (2013). *Pedagogy Dialogue*.
- Unterhalter, E. (2009). *Education*. In Deneulin and Shahani (Ed), *An Introduction to Human Development and Capacity Approach: Freedom and Agency*. London: Earth scan Woods, D.R. (2000). *Helping your student gain the most from PBL*. Proceeding of Second Asia-Pacific Conference on PBL. Singapore: Tematik Polytechnic. pp. 1- 22.