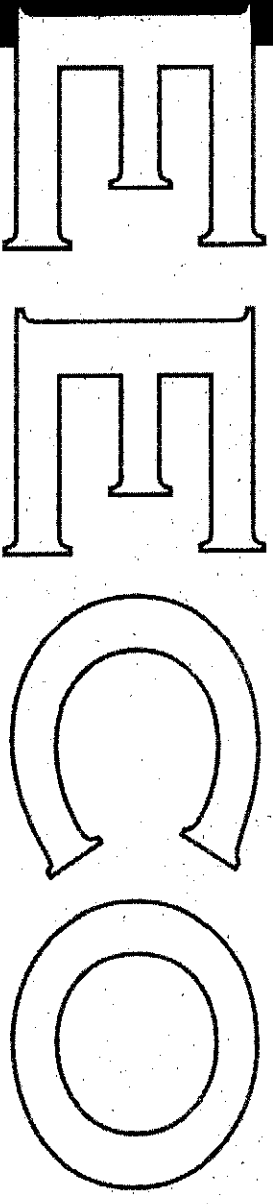


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Good Education and Environmental Education

John Hug

Environmental education has been around a long time in one form or another. As human society has evolved, so has the process of knowing the workings of the earth and its inhabitants. In aboriginal cultures in all parts of the world, humans learned of their environment by living in it and with it and by learning its mysteries from family or tribal members. For many centuries, starting with cave dwellers, environmental education was associated with survival. As time passed, with increasing human populations, the demands on the earth's resources increased to a point that some habitats could not support human activity, resulting in migrations to "new" lands or the importing of natural resources from other places.

As early forms of technology became available, humans began to believe that the use of increasingly sophisticated technology would make it possible to continually increase their daily comforts and make all their activities convenient and satisfying. As this "standard of living" increased, humans began to lose sight of the notion that the earth's resources were the ultimate ingredients necessary to sustain any human culture.

The illusion of inexhaustible resources became a concern to a few forward-looking thinkers. They began to worry and to communicate their concerns that such a belief would lead to catastrophe, not only for the human race but perhaps for all of the earth's living creatures. Consequently, environmental education was initiated. Early efforts concentrated on scientific inquiry to learn how the world's environment

worked. Scientists became more and more specialized and compartmentalized in order to uncover the secrets of the earth's environment. At the same time, the beauty of our earth was captured by artists, and more and more people became enamored with nature study. There was (and is) a belief that if you appreciated and loved nature, you would be a custodian of it.

As the industrial age progressed, as technology grew in complexity and scope, and as cultures

"The goal of education is not mastery of subject matter but mastery of one's person."

David Orr

demanding more and more goods and services, it became clear that the materialistic economy and the increasing human population were producing some alarming consequences for the environment. As concern grew, thoughtful people from many walks of life advocated many forms of education that would restore the connections between the natural resource base and human activity. Agricultural conservation practices were an early manifestation of these rising concerns. But soon other industries were targeted for reducing pollution. Some strong-willed people even took dangerous and often illegal actions to bring attention to the problem. These actions brought many more people to the table and solutions—both voluntary and required—were developed.

This paper reflects the views of the author and not necessarily those of the Environmental Education Council of Ohio, its members, or its board of directors. Each essay in this series is intended to encourage reasoned dialogue for the improvement of environmental education.

During this long history of environmental turmoil, elementary, secondary, and postsecondary educators struggled to find their proper role in the environmental education effort. Individuals and institutions outside formal education were also searching for their best courses of action. It seems clear now that in most cases both took the path of least resistance.

That path has been taken for 740 years. It has become a habit, a rut, a seemingly insurmountable obstacle to creative educational

"Democracy must begin at home, and its home is a neighborhoodly community."

John Dewey

programs. That "740 years" is not a misprint. It seems that the University of Paris (La Sorbonne) was established in 1257 for disciplinary studies. Since that time, literally thousands of disciplines or special subjects have been introduced and periodically redefined. The intervening 740 years has also seen the disciplinary curriculum format become common practice in universities, high schools, and even in kindergarten, with time set aside for science, mathematics, English language arts, and other study areas. This compartmentalized curriculum has led to a condition where the parts no longer add up to any kind of coherent whole. We must find a general education system that minimizes compartmentalized curriculum structures and concentrates on holistic approaches. The value of the knowledge-generating activity of the disciplines should not be diminished, but it should be clear that expanding the frontier of knowledge and providing general education for citizens are vastly different endeavors.

Environmental education has blamelessly followed suit. Courses, workshops, units, lessons, activities, and more have been created to fit into the existing piecemeal education curriculum. Educators outside the formal education structure have followed the same pattern by offering topical sessions for their special audiences. While the topical approach is sometimes appropriate, it certainly shouldn't be the only learning mode. There has been a visible effort to recombine topics or disciplines into larger pieces, resulting in topics such as ecology, bioregions, watersheds, habitats, and others. This is a step in the right direction.

What we need, however, is something more than a recombining of existing subjects into larger ones, although that in itself is encouraging. We need to step back and look at the big picture—at the many facets of our culture that impinge on a full and complete education. That type of education is lifelong and occurs in all aspects of our lives. Education is going on in our families, in recreational pursuits, in economic decision making, in governance, in volunteerism, and in elementary, secondary, and

postsecondary educational institutions. All of these segments of our culture must continue to study and reflect on how we can work together to provide an education for everyone that is creative, intriguing, adventuresome, and appropriate for today and for an emerging future.

John P. Miller¹ has proposed that there are three types of education—transmission, transaction, and transformation. Briefly, *transmission* is the transfer of information or procedures through human or technological means. This form of education has consistently dominated both formal and informal education. Now human transmission is in danger of losing its prominent place in education because information storage and retrieval have become so efficient with ever improving computer technology. *Transaction* is the use of the strategies of inquiry, problem solving, and active hands-on/minds-on learning. The surge of interest in this type of learning is widespread and learners have shown renewed interest in learning when these strategies are employed by leaders or teachers. *Transformation* is that type of education that takes into account the wholeness of the individual. It clearly does not treat the mind as a stand-alone entity, but rather, assumes that every aspect of the human being is involved in the learning process. Thus, such ideas as emotion, intuition, common sense, freedom, self esteem, dignity, mental and physical health, aesthetic appreciation, spirituality, ecological consistency, and others have

"Being an effective teacher may be the most difficult job of all in our society."

William Glasser

significant impacts on learning. Renate and Geoffrey Caine's book, *Making Connections: Teaching and the Human Brain*,² carefully summarizes and synthesizes recent brain research to demonstrate the significant relationships that exist among the cognitive and affective functions of the human brain and, further, how this relatively new knowledge should have an important impact on how elementary, secondary, and postsecondary education should be designed.

A new mission for environmental education is emerging. It is based on the insights of and the evidence collected by many competent and thoughtful people. The new mission is to join forces with education theoreticians and practitioners to design learning programs that have universal characteristics applicable to both formal education and to all other educational ventures in our society. Whether you're in formal education or parallel to it, practitioners need to use the same philosophies, assumptions, and strategies in designing learning programs. A set of universal characteristics required for quality learning experiences would be helpful.

Universal Characteristics for Quality Learning Experiences

Quality learning experiences have four essential characteristics.

John deserves a full-length essay or book to adequately describe it. In fact, many authors have carried out research and/or written extensively about these characteristics. The footnotes and bibliography provide numerous sources for further reading. The four essential characteristics are:

Learner-centered

Learners must have almost total control of the decisions that determine: 1) what they will learn; 2) the target outcomes expected (goal setting); 3) the plan of action, including the human and material resources needed and the learning processes and procedures to be employed; and 4) the analysis, summary, evaluation, and presentation of results. This learner-centered characteristic is the most difficult one to comprehend because almost all

"The function of education is to place the signs, build the roads, direct the traffic, and teach good driving — but not to drive the car."

William Purkey, John Novak

learning has been designed and carried out through authoritarian decision making by adults. It is difficult to fathom how learners of all ages could handle all of these responsibilities. Some authors have been clear in stating that young learners are not capable of such responsibility, while others believe even very young children should be given increasing responsibility to decide and plan wide-ranging learning episodes. When literally thousands of these learner-centered experiences—starting with simple, short ones and proceeding to complex, time-consuming ones—have been successfully completed over a span of thirteen or fourteen years (preschool to graduation) both in school and in other settings, the learner will be a self-confident, independent, self-initiating, lifelong learner.

Even when directed teaching is appropriate, the learner should have significant input or control over the learning process. Only in this way will the learning be appropriate to the learner's uniqueness and contribute to the learner's growth. It is increasingly evident that learners are far more capable of directing their own learning than we have been willing to admit.

Wisely Mentored

A person pursues his learning, he needs the wise counsel of others. The job of a mentor is to prompt the learner or facilitate the learning process, not to "direct" the learning process. This distinction is crucially important. The usual interpretation given

to the activity of a coach, teacher, leader, or mentor is one that suggests control—in some cases even total control. Even the word *facilitate* can be misconstrued to mean control of the learning process. Whatever the helper(s) may be called, the key idea is that their actions are deemed supportive of the learner's learning, not a domination of it.

The job of a wise mentor is extremely difficult in our culture because the prevailing perception of a teacher or leader is that he or she is an "expert" and has a "take charge" persona. Learning how to become a wise mentor will be a difficult transition for many people who have spent the major portion of their lives as passive-learners in the company of parents, teachers, professors, and others who have been largely "directive" in their actions, even though many of these people were, in a general way, caring and gentle people.

The intent here is not to enumerate the many abilities and characteristics of a wise mentor. Yet, one should be emphasized in this context: authenticity. Over the years we have developed an image of how teachers or leaders should act. Rightly or wrongly, we have come to describe them as if they were not real people, but actors playing fabricated characters in a play. In fact, we often refer to the "role" of the teacher as if it was an unvaried pattern of behavior. Some of the characterizations were meant to be tongue-in-cheek, but they have nevertheless become acceptable perceptions of leaders and teachers: no nonsense, stern, knowledgeable,

"It is absolutely essential that young people learn early in life to consider complex problems, to recognize the pros and cons of each solution, and to choose the stand they will take on an issue. They must learn this process of intelligent choice, the weighing of the available data, and arriving at an informed decision. Learning to solve complex problems, social and scientific, is a primary objective for education."

Carl Rogers

equitable (assuming learners are all the same), doesn't smile until Christmas, humorless, devoid of a personal life, taskmaster, emotionless, mistake free, always knows what to do, and many others.

What we need are wise mentors who are authentic people, not role players. Clark Moustakas wrote a book called *The Authentic Teacher*² in which he advocates that leaders of learners need to be first and foremost authentic human beings. Nel Noddings, in her book *The Challenge to Care in Schools*,⁴ speaks passionately about the necessity for gentleness and caring in leader-learner relationships. Learners need to connect with the person with

whom they are working, someone they can respect and care about. Someone who is a friend and confidant. Someone who is wise.

Cooperative

Learners for too long have been pitted against one another in competition for grades or test scores. Teachers generally have used some form of grade allocation or some stated standard to distribute grades among the five common groupings—A, B, C, D, F. This has always produced winners and losers. An excellent book that describes this phenomena and its implications is *Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes*, by Alfie Kohn.⁵ Many new means of conveying to others the progress of a learner have been advocated and instituted. Yet, many still end up conveying some statement of success or failure, and the evaluation is done by the teacher or leader.

"A leader is best

When people barely know he exists,

Not so good when people obey and acclaim him,

Worst when they despise him.

But of a good leader, who talks little,

When his work is done, his aim fulfilled,

They will all say 'We did this ourselves.'"

Lao-Tse (Chinese philosopher, 500 BC)

Learners ought to be engaged in self-evaluation in relation to the goals they themselves have set. This process helps the learners recognize their own progress and, over the long term, makes it possible for them to improve their goal-setting skills. This combination of goal-setting and self-evaluation eventually results in learners who can set reasonable yet challenging goals that provide successful, satisfying learning experiences.

In addition to individual goal-setting and self-evaluation, learners ought to be engaged in cooperative learning experiences that are characterized by cooperative goal-setting, cooperative planning, and cooperative evaluation. These opportunities should begin in preschool or kindergarten (even within the family at younger ages) and continue to expand in duration and complexity throughout the thirteen or fourteen years of elementary and secondary education.

When such an education is available to learners they become independent, self-initiating, confident learners. They also will have acquired the skills which are deemed extremely important by people who are responsible for hiring workers for literally thousands and thousands of occupations. On-the-job initiative and problem-solving abilities are highly valued worker characteristics.

Another aspect of the cooperative characteristic is that it has come about through practice in democratic functioning. All during cooperative learning experiences the skills of conflict resolution, consensus building, cooperative task completion, leadership-followship role assumption and many other skills have been improved. The responsibilities of group membership come into sharp focus as the learning experiences unfold. Learners come to understand the concepts of egocentrism and sociocentrism resulting in learners who can meaningfully participate in family, neighborhood and community governance, and other citizenship activities.

The best way to learn how to be a democratically functioning member of a group is to participate in literally hundreds of increasingly complex cooperative learning experiences under the tutelage or mentorship of a wise and caring teacher or leader. Our society needs to have as many citizens as possible who have developed and competently use these critically important cooperative skills.

Theme-Based

As was mentioned earlier, disciplinary education has been around for many centuries. Most elementary and secondary education is still governed by that form of curricular structure. Thus, the four major curriculum areas—mathematics, science, social studies, and English language arts—make up the major portion of the curriculum, with the arts, health, physical, and leisure education receiving prominent attention. Over the years, as critically important societal needs arose, elementary and secondary education was given, and continues to receive, numerous additional educational responsibilities. As each one is added, there is a struggle to find the time and resources to adequately accomplish the new responsibility while not diminishing the importance of "the basics." These struggles, at times, have become heated, and often there have been winners and losers. Sometimes, however, reversals take place.

Societal needs are often advocated by a special interest group. These groups are well aware that the curriculum is already full, and consequently devise various strategies to try to convince educators that they should insert, infuse, integrate, inject, blend, or merge the new material into the curriculum. They are not above predicting massive negative consequences if the new topic is not included in the curriculum. Figure 1 is a partial list of the type of injections that have been advocated and have found success to a greater or lesser extent. There are certainly others that deserve mention, but space does not permit an exhaustive list.

Figure 1 brings into sharp focus the dilemma faced by elementary and secondary educators. Some educators have recognized this dilemma and have sought to find alternatives. These alternatives have surfaced as multidisciplinary, interdisciplinary, and even

