**Environmental Literacy**

**Literacy**

Literacy encompasses a complex set of abilities to understand. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines literacy as the "ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society.

**Environmental Literacy**

Environmental literacy is the capacity of an individual to act successfully in daily life on a broad understanding of how people and societies relate to each other and to natural systems, and how they might do so sustainably. It is an individual understands of how their actions and decisions affect the environment so they can act on that understanding in a responsible and effective manner.

**Need for environmental literacy**

Recognising the importance of aiming at widespread or universal environmental literacy has implications for both the content and the process of education. We need environmental literacy because

1. To understand the underlying science of our interaction with natural systems
2. Limits of our present knowledge mean that scientific knowledge could be described as islands of understanding in oceans of ignorance.
3. So agronomists have expert knowledge of pastures, but may not understand the implications for surrounding bush land of changes to the pattern of land use on farms.
4. Foresters have detailed knowledge of the managing of wooded land, but may not know about the effects on river systems of changes to the way we use our forests. Traditional education has often concentrated on the individual trees rather than the nature of the wood.
5. Transport experts may be able to build roads or even design overall systems of urban transport, but may not understand the effects of the resulting travel on the social dynamics of the city, on local air quality or on the global climate.

The key content of education for environmental literacy is probably the Four Laws of Ecology:

* Everything has to go somewhere,
* Everything is connected to everything else,
* There is no such thing as a free lunch, and
* Nature knows best.

Most of our serious environmental problems arise directly from a failure to understand those basic ideas. This is an important warning. When we change the conditions applying to complex systems, we produce changes which will not be expected; some of these will be counter-intuitive. We can now see some of the consequences of past actions.

**Three Levels of Learning - Environmental Awareness and Learning**

1. **Level One: Environmental Awareness:** Simple awareness is the knowing that a topic exists and is important but unfamiliar with its complexities and little relationship to personal change or action. The main advantage of widespread environmental awareness is its contribution to public support for government action in environmental policy and management. The most important tool for creating such awareness, by far, is the public media. Advocates for changes to environmental policy often see the creation of public environmental awareness as a primary objective.
2. **Level Two: Personal Conduct Knowledge:** It involves a combination of awareness and action. Personal conduct knowledge is similar to awareness in that it does not require much knowledge of the detailed workings of a subject. Most of what is grasped is fairly simple and most often requires just one action step on the part of an individual – like the activities as saving electricity, gasoline, and water, buying "green" products, and reducing solid waste and individually-caused run-off pollution (for example, refraining from washing one's car in the driveway). Unlike general environmental awareness, people at this level willingly go a step further by taking action. Moreover, they make a connection between the environment and their own conduct.
3. **Level Three: Environmental Literacy:** The third and final level, "environmental literacy," is distinct from simple awareness or personal conduct knowledge because of its depth of information and the actual skills (thinking and doing) that are imparted. It starts out with framed information but it also imparts underlying principles, the skills needed to investigate the subject, and an understanding of how to apply the information. Most real environmental education involves hands-on experience either in a lab or the field. In this the learner progresses from deep knowledge, to skill, to actual field application.
   1. **Building a foundation in youth**–We need to offer students a sufficient amount of sequenced environmental education to let them absorb and retain the basic definitions and principles of environmental science and systems, and to learn how to actually apply those principles.
   2. **Adult leadership literacy**– All people impact the environment in their homes, workplaces, and communities. Leaders in business, government, and civic affairs lack basic environmental literacy and often either ignore environmental impacts and opportunities or address them solely through intuition. Community leaders, in particular, need to be environmentally literate. They number in the tens of millions and are constantly making decisions on every aspect of community life, from land development policy to education to waste removal.

**Components of Environmental Literacy**

There are five essential components of environmental literacy. It is designed to be a loose hierarchy from the simple to the more complex, each building on the step below. Most important to appreciate is that environmental literacy cannot be achieved without all steps of the ladder; achieving any one step alone is inadequate and will not result in literacy.

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| Capacity for personal and **collective action** and civic participation  Problem solving and critical thinking **skills**  **Attitudes** of appreciation and concern for the environment  **Knowledge** and understanding of human and natural systems and processes  General **awareness** of the relationship between the environment and human life |

**Strategies for environmental literacy**

1. Increase collaboration and communication between formal and informal environmental educators to support classroom learning related to the environment.
2. Reduce or eliminate greenhouse gas emissions through training and support for energy audits or emissions inventories and, cost-effective energy efficiency improvements, conservation measures, and/or renewable energy.
3. Improve water quality and conservation and other water pollution prevention strategies.
4. Reduce solid and hazardous waste production through increased recycling, reduced consumption, and improved management, reduction, or elimination of hazardous waste streams.
5. Actively promote the use of alternative transportation, including safe routes for walking or biking
6. Encourage and support the development of plans and installation of Wetlands, forests, gardens, and other habitat that promote teaching and learning about the environment.
7. Promote resources to assess and manage indoor air quality, moisture and mold, contaminants
8. Support the availability of healthy food options through onsite food gardens, environmentally preferable foods (organic, fair trade)

**Results of environmental literacy**

* Environmentally literate persons know how daily choices can help or harm the environment and what they need to do.
* Results in a citizenry empowered to meet their future responsibilities regarding the environment
* Teaches children and adults how to learn and investigate their environment and make informed decisions.
* An environmentally literate citizen has the knowledge, tools, and sensitivity to weigh various sides of environmental issues to make responsible decisions as individuals and as members of their community.