Educated Decision Making For Sustainability Using Value Analysis Model

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Abstract

The basic aim of the education system for sustainable development is ‘education of a new man', ‘a human of a sustainable type of thinking’ a human of Cosmo-planetary consciousness with a holistic world outlook, who have a culture of sustainability, high socio-cultural needs and deep moral ethical values, who are capable to solve global tasks faced by the mankind and to promote the forming of sustainable society.

Education in its contemporary development should be aimed at the future, should “foresee” and form in a certain way and satisfy needs of future generations of people. That means that education should be anticipatory to social, economic and cultural life, it should form desirable sustainable future.

ESD must give people practical skills that will enable them to continue learning after they leave school, to have a sustainable livelihood, and to live sustainable lives. These skills will differ with community conditions.

The ability to consider an issue from the view of different stakeholders is essential to ESD. Considering an issue from another viewpoint besides your own leads to intra-national and international understanding. This understanding is essential for creating the mood of cooperation that will underpin sustainable development.

Conflicting values lead to Dilemma, which further leads to value conflicts one is not clear what can one do in a given situation. Here one needs to analyze the problem at hand through many angles in order to reach to an amicable solution to a problem. How does this model function, is discussed in this paper. The authors would like to focus on value analysis model to take educated decisions towards sustainable development.

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Introduction

The basic aim of the education system for sustainable development is 'education of a new man', 'a human of a sustainable type of thinking' a human of Cosmo-planetary consciousness with a holistic world outlook, who have a culture of sustainability, high socio-cultural needs and deep moral ethical values, who are capable to solve global tasks faced by the mankind and to promote the forming of sustainable society.

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"Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues…It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behavior consistent with sustainable development and for effective public participation in decision making" (Chapter 36 of Agenda 21,Rio Declaration 1992).

A core principle behind sustainable development is the idea that economic, social and environmental conditions play a major role. ESD has five components; knowledge, skills, perspectives, values and teaching issues which are to be addressed in a formal curriculum for sustainable development.

Sustainability requires meeting the needs of the present population without compromising the ability of future generations to meet their own needs. To manage the environmental, economic, and social aspects of sustainability, decision makers will have to make decisions under highly complex and uncertain conditions. Models, methods, frameworks, and guidance for sustainability-based decision making are needed.

Principles of Sustainable Development

Many governments and individuals have pondered what sustainable development means beyond a simple one-sentence definition. The *Rio Declaration on Environment and Development* fleshes out the definition by listing 18 principles of sustainability.

- People are entitled to a healthy and productive life in harmony with nature.
- Development today must not undermine the development and environment needs of present and future generations.
- Nations have the sovereign right to exploit their own resources, but without causing environmental damage beyond their borders.
- Nations shall develop international laws to provide compensation for damage that activities under their control cause to areas beyond their borders.

- Nations shall use the precautionary approach to protect the environment. Where there are threats of serious or irreversible damage, scientific uncertainty shall not be used to postpone cost-effective measures to prevent environmental degradation.
- In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process, and cannot be considered in isolation from it. Eradicating poverty and reducing disparities in living standards in different parts of the world are essential to achieve sustainable development and meet the needs of the majority of people.
- Nations shall cooperate to conserve, protect and restore the health and integrity of the Earth's ecosystem. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.
- Nations should reduce and eliminate unsustainable patterns of production and consumption, and promote appropriate demographic policies.
- Environmental issues are best handled with the participation of all concerned citizens. Nations shall facilitate and encourage public awareness and participation by making environmental information widely available.
- Nations shall enact effective environmental laws, and develop national law regarding liability for the victims of pollution and other environmental damage. Where they have authority, nations shall assess the environmental impact of proposed activities that are likely to have a significant adverse impact.
- Nations should cooperate to promote an open international economic system that will lead to economic growth and sustainable development in all countries. Environmental policies should not be used as an unjustifiable means of restricting international trade.
- The polluter should, in principle, bear the cost of pollution.
- Nations shall warn one another of natural disasters or activities that may have harmful transboundary impacts.
- Sustainable development requires better scientific understanding of the problems. Nations should share knowledge and innovative technologies to achieve the goal of sustainability.
- The full participation of women is essential to achieve sustainable development. The creativity, ideals and courage of youth and the knowledge of indigenous people are needed too. Nations should recognize and support the identity, culture and interests of indigenous people.
- Warfare is inherently destructive of sustainable development, and Nations shall respect international laws protecting the environment in times of armed conflict, and shall cooperate in their further establishment.
- Peace, development and environmental protection are interdependent and indivisible.

Framework for Teaching or Analyzing Environmental Issues

Teachers should be equipped to help pupils identify and think about the complexities of issues from the perspectives of many stakeholders. Older pupils and university students need to acquire skills to analyze issues, analyze proposed solutions to those issues, understand the values underlying opposing positions on issues, and analyze conflicts arising from those issues and

proposed solutions. The following framework of 13 questions is for analyzing an environmental issue whether the issue confronts a local community or a country on the other side of the world.

1. What are the main historical and current causes (i.e., physical/biotic, social/cultural, or economic) of the issue?
2. What is the geographic scale, the spatial distribution, and the longevity of the issue?
3. What are the major risks and consequences to the natural environment?
4. What are the major risks and consequences to human systems?
5. What are the economic implications?
6. What are the major currently implemented or proposed solutions?
7. What are the obstacles to these solutions?
8. What major social values (e.g., economic, ecological, political, aesthetic) are involved in or infringed upon by these solutions?
9. What group(s) of people would be adversely impacted by or bear the costs of these solutions?
10. What is the political status of the problem and solutions?
11. How does this issue relate to other environmental issues?

    The next two questions help people integrate knowledge into daily living.

12. What is a change you can make in your daily life to lessen the problem or issue?
13. Beyond changes in your daily life, what is the next step you could take to address the issue?

* This framework for teaching, studying, and analyzing environmental issues was developed for North American university students through a research process by Rosalyn McKeown and Roger Dendinger.

Framework will guide in developing the insight into what needs to be done in the course of education for sustainable development. Perspective to look at the global issues and work at the local level needs to be developed in students. Perspectives alone will not be enough therefore there is need to develop skills required to deal with the problems efficiently and effectively. Values will also have to be developed so that the perspective developed and requisite skills when acquired would lead to a sustainable long term development.

Perspectives

ESD carries with it perspectives that are important for understanding global issues as well as local issues in a global context. Every issue has a history and a future. Looking at the roots of an issue and forecasting possible futures based on different scenarios are part of ESD, as is understanding that many global issues are linked. For example, over-consumption of such consumer goods as paper leads to deforestation, which is thought to be related to global climate change.

The ability to consider an issue from the view of different stakeholders is essential to ESD. Considering an issue from another viewpoint besides your own leads to intra-national and

international understanding. This understanding is essential for creating the mood of cooperation that will underpin sustainable development.

The following is a partial list of perspectives associated with ESD. Students understand that:

- Social and environmental problems change through time and have a history and a future.
- Contemporary global environmental issues are linked and interrelated between and among themselves.
- Humans have universal attributes (e.g., they love their children).
- Looking at their community as well as looking beyond the confines of local and national boundaries is necessary to understand local issues in a global context.
- Considering differing views before reaching a decision or judgment is necessary.
- Economic values, religious values, and societal values compete for importance as people of different interests and backgrounds interact.
- Technology and science alone cannot solve all of our problems.
- Individuals are global citizens in addition to citizens of the local community.
- Individual consumer decisions and other actions effect resource extraction and manufacturing in distant places.
- Employing the precautionary principle by taking action to avoid the possibility of serious or irreversible environmental or social harm even when scientific knowledge is incomplete or inconclusive is necessary for the long-term well-being of their community and planet.

When taught to a generation of pupils, such perspectives will become infused into local worldviews.

Skills

To be successful, ESD must go beyond teaching about these global issues. ESD must give people practical skills that will enable them to continue learning after they leave school, to have a sustainable livelihood, and to live sustainable lives. These skills will differ with community conditions. The following list demonstrates the types of skills pupils will need as adults. Note that skills fall into one or more of the three realms of sustainable development - environmental, economic, and social.

- The ability to communicate effectively (both orally and in writing).
- The ability to think about systems (both natural and social sciences).
- The ability to think in time - to forecast, to think ahead, and to plan.
- The ability to think critically about value issues.
- The ability to separate number, quantity, quality, and value.
- The capacity to move from awareness to knowledge to action.
- The ability to work cooperatively with other people.
- The capacity to use these processes: knowing, inquiring, acting, judging, imagining, connecting, valuing, and choosing.

- The capacity to develop an aesthetic response to the environment (McClaren, 1989). In addition, pupils will need to learn skills that will help them manage and interact with the local environment. Such locally relevant skills may include learning to:
- Prepare materials for recycling.
- Harvest wild plants without jeopardizing future natural regeneration and production.
- Grow low-water-need cotton.
- Draw water from unpolluted sources.

Values

Values are also an integral part of ESD. In some cultures, values are taught overtly in the schools. In other cultures, however, even if values are not taught overtly, they are modeled, explained, analyzed, or discussed. In both situations, understanding values is an essential part of understanding your own worldview and other people's viewpoints. Understanding your own values, the values of the society you live in, and the values of others around the world is a central part of educating for a sustainable future.

In ESD, values have different roles in the curriculum. In some ESD efforts, pupils adopt certain values as a direct result of instruction or modeling of accepted values. In other cultures, studying the relationship between society and the environment leads pupils to adopt values derived from their studies. In cultures where inquisitiveness is encouraged, pupils come to value curiosity and questioning. In democratic societies, pupils also develop shared values around concepts of democratic process, community participation in decision making, volunteerism, and social justice. Each of these approaches contributes to the overall goal of sustainability. The Earth charter focusses on developing the shared vision on ethical foundation for sustainable way of life for entire globe.

The Earth Charter

The Earth Charter is a synthesis of values, principles, and aspirations that are shared by a growing number of women, men, and organizations around the world. Drafting the Earth Charter was part of the unfinished business of the Earth Summit. The Earth Charter was written with extensive international consultations conducted over many years. Currently, the Earth Charter is being disseminated to individuals and organizations in all sectors of society throughout the world and it says in part:

"We urgently need a shared vision of basic values to provide an ethical foundation for the emerging world community. Therefore, together in hope we affirm the following interdependent principles for a sustainable way of life as a common standard by which the conduct of all individuals, organizations, businesses, governments, and transnational institutions is to be guided and assessed."

I. Respect and care for the community of life

1. Respect Earth and life in all its diversity.
2. Care for the community of life with understanding, compassion, and love.
3. Build democratic societies that are just, participatory, sustainable, and peaceable.

4. Secure Earth's bounty and beauty for present and future generations.

II. Ecological Integrity

1. Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life.
2. Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.
3. Adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being.
4. Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.

III. Social and Economic Justice

1. Eradicate poverty as an ethical, social, and environmental imperative.
2. Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.
3. Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care, and economic opportunity.
4. Uphold the right of all, without discrimination, to a natural and social environment supportive of human dignity, bodily health, and spiritual well-being, with special attention to the rights of indigenous peoples and minorities.

IV. Democracy, Nonviolence, and Peace

1. Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.
2. Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life.
3. Treat all living beings with respect and consideration.
4. Promote a culture of tolerance, nonviolence, and peace.

No one discipline can or should claim ownership of ESD. In fact, ESD poses such broad and encompassing challenges that it requires contributions from many disciplines. For example, consider these disciplinary contributions to ESD:

- Mathematics helps students understand extremely small numbers (e.g., parts per hundred, thousand, or million), which allows them to interpret pollution data.
- Language Arts, especially media literacy, creates knowledgeable consumers who can analyze the messages of corporate advertisers and see beyond "green wash."
- History teaches the concept of global change, while helping students to recognize that change has occurred for centuries.
- Reading develops the ability to distinguish between fact and opinion and helps students become critical readers of political campaign literature.
- Social Studies helps students to understand ethnocentrism, racism, and gender inequity as well as to recognize how these are expressed in the surrounding community and nations worldwide.

Each discipline also has associated pedagogical techniques. The combined pedagogical techniques and strategies of each discipline contribute to an expanded vision of how to teach for creativity, critical thinking, and a desire for life-long learning - all mental habits that support sustainable societies. Two common techniques - values clarification and values analysis - are useful to the values component of ESD.

Value Analysis Model for taking educated decisions

Conflicting values lead to Dilemma, which further leads to value conflicts one is not clear what can one do in a given situation. Here one needs to analyze the problem at hand through many angles in order to reach to an amicable solution to a problem. How does this model function?

All children need processing skills related to values, to clarify the value conflicts and to make judgments on value conflict specially designed scientific mode. Valuing is one of the major processes involved in valuing is one of the major processes involved in value clarification, value analysis and processing skills related to values.

A detailed account of value analysis model was set forth by Coombs (1971) in Metcaf's, Value Education: Rationale, Strategies and Procedures, which is the 41st year book of National Council of Social studies, Later on Frankel (1977) proposed a System to analyze value conflicts. Keeping in view the ideas expressed by Coombs and Frankael, a model namely Value Analysis Model' was structured by B. K. Passi, Sansanwal and Singh (1988) during a Workshop on Value orientation of B.Ed Students teaches held at the Department of Education Devi Ahilya Vishwavidyalaya, Indore, sponsored by NCERT New Delhi.

Main Assumptions of Value Analysis Model

The value analysis model is based on the following assumptions:

Assumptions of value analysis model:

1.As students begin to identify and think about values, they will be able to realize that values can often conflict.

2. Value conflict is a fact of life and nobody can live without value conflict.

3.Value conflict may often lead to inconsistencies in behavior of individual.

4.Value conflict puts the individual into a painful situation. The individual tries to come out of the value conflict. He arrives at an appropriate and desirable conclusion.

5. If students are given opportunities to identify and discuss and evaluate the alternative courses of actions along with the desirable consequences, they will be able to arrive at a conclusion relevant to the situation.

A model of value education is not restricted to the development of a particular domain of the value system. They develop certain other aspects too. The implementation of a model of value development in a real situation of the classroom is challenging job and it requires a perfect understanding of the theoretical aspect as well as a competence in the practical aspects of the model.

Syntax of the Value Analysis Model .

In analyzing a value dilemma through value analysis model, a teacher has to follow eight steps/ phase in a classroom situation:

In the syntax of this model there are eight phases:

(i). Presenting the dilemma
(ii). Asking for facts
(iii). Identifying and clarifying value conflict
(iv). Asking for conceivable alternatives
(v). Asking for possible consequences of each alternatives
(vi). Asking for evidence to support the likelihood of consequence occurring
(vii). Asking for evaluation of likely consequences.
(viii). Asking for judgment as to which alternative seems the best and why

Phase I – Presenting the Dilemma – In a classroom the value dilemma – may be presented in the form of short readings, through a film, film strips, OHP/ LCD projection photo copies readings etc. Develop the environmental problem.

After presentation of the value dilemma, the teacher asks certain questions in order to help the students to clarify the circumstances involved in the dilemma, identifies and defines difficult terms, identifies the characteristics of the central character.

Phase II: Asking for facts: Why has this dilemma occurred what is the actual problem? Ask the students to share experiences, views and observations.

Phase III Identification and Clarification of Value Conflict
The teacher clarifies the value questions and helps the students to do the same. Identifying and clarifying facts Filtering and selecting directly responsible variables and then clarifying.

The responsibility of the clarification of value conflict should be shared by teacher and students. The teacher asks about the value conflict faced by the central character, the conflict situations etc.

Phase IV: Asking for conceivable alternatives – In this phase, the activities which should be done through group work, brain storming, encouraging the class to suggest ideas etc. What alternatives are open to the central character is the main theme of this phase.

Phase V: Asking for possible consequences of each alternative. In this phase the students predict the consequences of each alternative. The teacher asks some questions in this phase. Dividing the class into small groups and allowing them to discuss and find alternatives to come out of the current dilemma.

Every group has a chairman and a recorder. They come up with 2-4 alternatives.

Eg. What might be the consequences of various alternatives? What might be the short range and long range consequences? What might happen if the alternative were to become a reality? Who would be affected and how? What about the effects on the future generation?

Facts	Alternatives	Consequences		Long range consequences	
		Self	others	Self	others

Phase VI: Asking for evidences to support the likelihood of consequences occurring.

Of each alternative the teacher asks the students to begin the search for evidence to estimate the degree of desirability of each consequence occurring. The question encourages the students to search for data, reports, newspaper articles, television news etc. These evidences describe what happened in similar situation in the past. The teacher assesses the relevance of the evidences.

Phase VII: Asking for evaluation of likely consequences

Here the teacher presents the criteria to analyze the consequences in terms of desirability/ undesirability.

The criteria vary from dilemma and from group to group. Each of the consequences is to be rated on a five point scale. If the consequence is undesirable, then the ratings will be -2 and -1. If the consequences is to be rated on a dive point scale. If the consequences is to be rated on a five – point scale. If the consequence is undesirable, then the ratings will be +2 and +1 if the consequence is neutral then the rating will be zero. The algebraic scores of all the consequences for a given alternative will be worked out. Such totals will be available for each of the alternatives.

The alternative which got, high total will be considered as the best alternative.

Alternatives open to central character	Consequences	Their desirability from various points of views				Algebraic score of consequences	Ranking
		moral	legal	economical	aesthetic		

Phase VIII: Asking for a judgments as to which alternative seems the best and why- based on the scores the students decide and some consequences are desirable and some others are undesirable.

The choices are ranked from the most desirable to the least desirable. They state the reasons for selection of the particular alternative as the most desirable in this situation. In similar situations students will be able to analyze their value conflicts or conflicts related to the different life situations.
The ranking of individual student may vary and therefore at the end of the discussion it is important to clarify the alternative chosen and its justification.

VALUE PROCESSING SKILLS

Value processing skills are the skills, which we use, in the valuing process. Valuing is the tendency of a person to show preference. Valuing is a process, which is gradual and steady It is a process wherein an individual prizes and esteems a principle dearly. 'The process of valuing is what we go through when we make judgment about things, events and people that we encounter in our day to day life' (Archana Tomar, 2002). In a valuing process, a principle is prized, held in respect, deemed worthy, esteemed and proclaimed. Raths, Harmin and Simon (1966) first explained valuing process in their book 'Values and Teaching', in which they described seven processes that leads towards value clarity. Further, Kirschenbaum (1973) formulated the valuing process based on Raths' seven stage processes.

A comprehensive methodology, built on the positions of pragmatic philosophers and humanistic psychologists, has identified seven broad value skills and developed a number of practical techniques to help students learn these skills. These seven process skills are:

1. Choosing - One's beliefs and behaviors
i). Choosing freely.
ii). Choosing from alternatives.
iii). Choosing after consideration of consequences.

2. Prizing -One's believes and behaviors.
iv). Prizing and Cherishing.
v). Publicly affirming when appropriate.

3. Acting- on one's beliefs.
vi). Acting when situation demands.
vii). Acting with a pattern consistency and repetition.

1. **Choosing Freely:**

Value Processing Skills involves choosing freely, not as a result of pressure. There is little likelihood that an individual who is forced to adopt a particular value will integrate that value into his/her value structure. If something is to guide one's life, whether or not an authority is watching, it must be of totally free choice. If there is force, the result will not last beyond the influence of that force.

2. **Choosing from Alternatives**:

This is closely related to the first process, choosing freely. Making a number of choices available to the individual increases the chance that the individual can choose freely.

It involves considering alternatives before a choice is made. It is evident, there can be no choice if there are no alternatives from which to choose.

3. **Choosing after Considering the Consequences**:

Value Processing involves examining the consequences of each alternative carefully . Impulsive thoughtless choices do not lead to values.

For something to guide one's life meaningfully, it must emerge from understanding and judgments. Only with the consequences of the alternatives clearly understood can one make intelligent choices.

4. **Prizing and Cherishing**:

One should cherish one's values and consider them an integral aspect of one's existence. A person should be proud of and happy about his/her choice, not boastful pride, but feeling good about it. When we value something, we prize it, cherish it, esteem it, respect it and hold it dear. We are happy with our values and it flows from choices that we are glad to make.

5. **Publicly Affirming**:

If one has chosen one's values freely after considering the consequences, one should be willing to affirm those values. One should not be ashamed of one's values but should be willing to share them when occasion arises.

This process involves sharing one's convictions with others, standing up for what we believe, to voice our opinions, to publicly affirm our position.

6. **Acting upon Choices**:

The values one hold should be apparent from our actions. In fact one's activities should reflect the values one cherishes. It involves acting according to our choice and not just having good intentions.

When we hold dear a value, it shows up in all aspects of our life. We have limited time, money and energy. How we spend our time, money and energy reveal what we value.

7.**Acting with Consistency and Repetition**:

If one acts on one's values, one should do so in a consistent and repeated pattern. It involves acting repeatedly and incorporating the behaviour into our life pattern. Our value will show in different situations, at different times with consistency and become a pattern of action.

Some of the topics that can be taken under sustainable development are:

Should there be huge dams
Cleaning of rivers is it viable
Connection of rivers should it be done
Reduction of vehicles on road, by even banning vehicles under good condition with PUC certificates.
Industrial areas near cities
What kind of industries
Garbage management in urban areas

Conclusion:

Environment protection can become a reality only if we bring change in our value system. The nature we enjoy today is not our property. We are only the care taker, we have to hand over this property to our posterity safe and sound. Anything that is not good for nature is also not good for human beings and other organisms on earth. Mere consumerism and materialism will only increase piles and piles of garbage and pollutants on planet earth, rendering dangerous impact for survival or living organisms. The judicious use of natural resources, without greed if we take whatever is required for us to live, can save us from the jeopardy. There is ample amount of substance on mother earth.

Our values will tell us what is useful and good for us and nature at large. These values are deeply integrated in the Indian culture. Right from childhood, we try to teach our children that trees and animals get hurt we must not disturb them, we must keep our body clean, we must keep our house clean, we must use dustbins. One must not spit here and there. Somehow when we grow up do we care enough for our immediate environment and consequences of our actions to achieve the short term goals?

Our development agenda and large population are impinging upon the natural resources which calls for sustainability and educated decision making processes by students as well as adults in the society to save from dire consequences. We are aware of the boom rang effect of nature and have seen many changes in the climate also. These changes are hinting us to become alert and use sustainable measures of development. As it is said everything happens twice first in the mind and then in reality, it is better to analyze and study consequences of our actions before putting the task in reality.

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