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Need of science education for peace and harmony

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Abstract

Science education is the back bone of human existence. In the broad sense, refers to any systematic knowledge or practice that is achieved through scientific method and research. It plays a major role for global peace but whenever inequitable distribution of resources which is usually accompanied by widespread poverty. The breakdown in communication, the absence of a culture of peace is also contributing factors to conflicts. Education is a very powerful instrument of social change. Hence it is possible to create general awareness about human rights and exploitation in any form and measures to protect ourselves from any kind of injustice and exploitation. This paper has highlighted the causes of exploitation, conflicts, the requirements for peace, and the strategies for peace and harmony. It shows that there are many peace building actions that require inputs of science and technology. Such inputs would include scientific knowledge, the application of the knowledge and the process used in acquiring scientific knowledge. These three aspects of science and technology can influence the mode of social change, socio-economic development, social injustice, poverty reduction, communication and dialogues in communities and the mindset that promotes peace. It results in the impact on establishment of peace and harmony.

Keywords: Communication, culture of peace and harmony, exploitation, poverty reduction, peace, socio-economic development, science and technology education

Introduction

General Introduction

All over the world there is a strong interest in the promotion of sustainable development. Generally society wants an economic development that gives the present generation reasonable services and comfort without sacrificing those for future generations. In present time, the important goal is constrained by many factors which include conflicts, and poverty. All these challenges are human induced or can be controlled by appropriate policies and actions. Furthermore they are inter-related, sometimes feeding on one another. Any of them can destroy all the factors of production and lower the economic growth rate. This paper addresses one of these challenges: conflict, the prevention conflict and post-conflict restoration and the role of scientific and technical knowledge in the process. Conflict adversely affects sustainable development in many ways. First, it destroys the human resource base. During conflicts several people including children are killed. An even higher number of people die later from hunger, disease and malnutrition that are a result of the disruption of food supply. Conflict also adversely affects the national infrastructure and the environment both of which are usually considered as military targets or part of the strategy for the prosecutions of the war/conflict.

In general all economic activities are adversely affected. The political climate is also poisoned. There is a general mistrust, suspicion and lack of confidence among various political, ethnic and other groupings. All the indicators for social development decline. The infant mortality rate increases. Health care collapses. Access to potable water declines and there is increase in frequency and number of disease epidemics. Once a conflict takes place the society is completely destabilized and there is need to rehabilitate through a set of actions, predominantly diplomatic and economic, that strengthen and rebuild governmental infrastructure and institutions in order to avoid relapse into conflict. This is the peace and harmony building process. It requires understanding the causes of conflict, the identification of the requirements for peace and harmony, and the actions to achieve the peaceful status. This paper will examine the role of science education in the peace building process. It begins by identifying the thematic group of actions frequently employed in peace building and proceeds to show the role that scientists, scientific knowledge and scientific process/ method can play in peace building. What we hope to achieve in this paper is to closely examine the strategies and actions used in peace building and show where and how science can improve their effectiveness.

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Methodology

For the present research paper the information has been collected from the secondary sources of information. In this method, different books, articles in journals by same learned persons, weekly, Periodicals as well as some information from internet have been studied.

Causes of Conflict and Requirements for peace

In the last decade many conflicts have erupted all over world. A significant number of countries are in post conflict and rehabilitation phase and are implementing several Peace-building actions. Almost fifty percent of countries in the region have had some type of violent conflict in the last decade. Most of the conflict that may be construed to be political are really fight over resources (jobs, tax revenues, infrastructural developments etc). It is not uncommon to hear politicians say “it our group’s turn to provide leadership”. The intention that really lies behind such statement is access to and control over the national cake/ resource. When there is resistance from another group to this take –over of political power (actually economic resource), conflict ensues. The denial of human rights is one of the root causes of conflict in most societies. In many countries in Africa where conflicts have occurred one can identify many historical injustices that denied some of the citizens their basic rights. The absence of the rule of law arising from a weak judicial system that is not truly independent of the Government is one of the factors that create an atmosphere conducive to violent conflicts. In a situation like that citizens will not be able to expect justice from legal actions against the state when their rights are violated and security forces can engage freely in the abuse of human rights. The lack of respect for the fundamental rights such as the right to vote, freedom of speech and assembly also promote conflict. Several countries emerging from conflict have had prohibitions against meetings/ gatherings of people in excess of a particular size, have failed to conduct free and fair elections and suppressed any political opposition to the Government. Other violations of human rights include torture and illegal detention.

Peace and harmony strategies and Actions

Peace building work focuses on reducing or ending violent conflict and the promotion of a culture of peace. Thus the strategy used focuses on changes in both the mindset and the social and political structure of society.

The need for social and political structural changes as a peace building strategy was demonstrated earlier in the discussion of the causes of conflict where it was shown that denial of needs was the main cause of conflict. The peace building strategy must concentrate on the core problem that created the conflict. It must therefore examine the political, social and economic conditions and identify those aspects of the structures that should be changed in order to maintain durable peace. Unfortunately, however, most peace building programmes tend to concentrate only on efforts to change the political and social structures that created the conflict. Thus the focus tends to be on election reform, good governance, power-sharing initiatives and establishment of mechanisms to monitor and protect human rights.

Other issues relating to economic transformation (changes in the economic structure) are not addressed with the same level of interest. Yet economic advancement is the most important pillar of sustainable peace and it in this particular

area that science and Technology play an important role in peace building. Science can be an important tool for peace building by enhancing income generation activities such as agriculture and small scale industries with the objective of reducing poverty.

Relying on this strategy, the following actions are undertaken in most peace-building programmes: Socio-economic development; Good Governance; Performance of justice and security institutions; culture of truth, justice and reconciliation and peace education. These actions together will ensure the fundamental causes of conflict are addressed. Obviously, science education cannot contribute to all these actions. Actions that fall in the domain of structural changes in the political and social structures will obviously require very little scientific input. However science and technology can play significant roles in the successful execution of those that will lead to socio-economic advancement.

Science and technology education

Science is a body of knowledge. But this is not just any knowledge. It is knowledge obtained through study, practice or what is referred to as scientific method. This method relies on observation and experimentation to describe a natural phenomenon. Hence when we talk of science we are referring to a system that comprises content and process. Technology is the application of the scientific knowledge. Thus when one is examining the role of Science and Technology in peace building actions, one is looking at the content, the process and the applications of science.

The concept of scientific knowledge and the admissibility of a body of knowledge as modern science has always been a monopoly of the western world. There was no dialogue on the issue of what is scientific knowledge until recently when the west realised that there is vast resource base of knowledge in other civilisations. A true dialogue is now emerging leading to the promotion of Indigenous knowledge. Thus, scientific knowledge that can be used in peace building should not be restricted to western (laboratory -based) knowledge but should also include other knowledge which are also acquired through a process of experimentation and observation. Science education is the field concerned with the sharing of science content and process within the community. It is an education discipline to promote the spread of scientific knowledge beyond the existing scientific community. Through Science education it is possible to popularize science. The field of science education therefore emphasises the science content and the teaching pedagogy.

Furthermore, it can be said that Science education generates the human resource capacity for the application of scientific knowledge. Hence the application of science to the resolution of societal problems cannot take place without strong science education. In order to understand the role of science and technology education in peace building, we must therefore address the question: How does the sharing of scientific knowledge, method and application facilitate peace building? The answer to this question will come from the recognition of the three major attributes of science (as knowledge, as a process, as a mindset) and the recognition of the role of technology in providing goods and services for society.

Science education populates society with scientists who can apply scientific knowledge to socioeconomic advancement. Since one of the requirements for peace is socio-economic

advancement, Science education can facilitate the peace building process. In the next section we shall give examples of how science aids development and peace building. The study of science imbues in the population scientific reasoning that is based on logic. The scientific method used in gathering knowledge is based on analytical process that relies on logical arguments which will be a useful quality in dialogue among communities. Science also provides an analytical system that can be used in problem solving. It transforms attitude and the mindset.

Discussion

Several conflicts arise from disputes over the ownership of limited resources. It is not surprising therefore that most of the very poor countries or regions are the ones which are embroiled in conflicts. Thus, if one wants to build peace one must start with activities that will facilitate socioeconomic development. When there is increase in resources and there are adequate services available and also an equitable access to the same, the possibility of conflict is minimized hence the main contribution of science and technology to peace building is to increase income, wealth and services for all. There is evidence from history which is well documented in the literature to confirm that the income level of the developed world increased several times as a result of introduction of technology. Furthermore, in addition to the purely quantity economic indicators other factors such as longer life, greater social protection, health service, education level and more rapid means of communication accompanied the growth in income. Thus, Science and technology affects not only the economic prosperity but also transforms the social structures, modes of behaviours, attitudes of the mind and also the level of tolerance which improvement in education will bring. These are important Social changes all which should strengthen the peace building process.

In peace-building programme socio-economic advancement is pursued through actions that generate employment and income and create an enabling environment for economic activity. The latter will include development of infrastructure. As an important factor in production, Science and Technology increases productivity, production rate and income whenever it is introduced in an operation. In peace building some of the actions used for socio-economic advancement include support for agricultural; activities, support for micro-enterprises including food processing and post-harvest activities. All these activities can be enhanced through scientific and technical knowledge and skills.

In many post-conflict countries the development challenges are many and include: access to drinking water; support for agricultural research to help reduce hunger and poverty; improving child health and reduction of child mortality; promotion of microeconomic reforms to stimulate the private sector growth and employment creation. Science and technology can play significant role in overcoming all these challenges. For instance scientific knowledge is required in the search for water resources especially in cases where the source is underground. Technology is also required for the extraction and processing of the water. Similarly scientific research and development can lead to the enhancement of production and productivity in agriculture. New high-yielding variety can be identified through research. Farming techniques can be improved through inputs of science and technology. Furthermore other technological inputs such as

fertilisers and machines can also improve agricultural output.

There are several issues of global concern, with potential for conflict, that require discussion based on scientific evidence. Often these discussions require detailed knowledge of the interaction between man and its environment. Science provides the basis of such discussion. For example discussion on climate change and the role of various countries in the depletion of the ozone layer can only progress effectively if there is sound scientific evidence to inform the discussion. Similarly at national and regional levels, disputes over access to water resources are being increasingly discussed through dialogue in scientific communities. Science can provide the hydrological map to support decisions and policies for sustainable management of the resource and therefore prevent conflict. Science enriches dialogue. The latter is empty without knowledge and Science is part of the knowledge base of any society. Every society has its views of nature. That is science. It provides the content and the language of dialogue. Scientific community can provide a forum for dialogue. Throughout history, science has progressed through dialogue because the creation of knowledge occurs through exchange of ideas, facts and theories. The search for scientific knowledge has often led to dialogue within the community which normally cuts across several cultures. Hence the scientific community has been a centre for dialogue and can therefore play an important role in the promotion of dialogue among different peoples. Over the years the scientific communities have put in place several mechanisms for exchange of ideas which could be used as vectors for dialogue. These include networking, publications and dissemination of information and exchange visits among scientists. Technology which is an application of science can also facilitate dialogue in case of conflict. Since dialogue thrives through communications, then recent advances in communications technology should help the process. The emergence of Information and Communications Technology (ICT) has made all forms of communication easy and fast. Hence ICT in particular has facilitated dialogue.

Conclusions

Scientific evidence is sometimes crucial in resolution of disputes, mistrusts and terminating the blame-game. In some cases attempting to hold a dialogue, will be futile without such evidence. Science has over the years earned the respect of been factual. In some societies confidence in scientific evidence has reached a point of religion where people believe even without understanding. This respectable position enjoyed by science enables it to be a valuable arbiter in dialogue among civilizations.

Recently, peace and harmony has become a strategy for peace-building. The goal of peace and harmony is to imbibe the culture of peace in population. Peace education is pursued through the revision of the education curricula to promote qualitative values, attitudes and behaviours of a culture of peace, including peaceful conflict-resolution, dialogue, consensus-building and active non-violence. Other aspects of this activity are the support for cultural and linguistic diversity in education an important set of activities in peace education seeks to promote sustainable economic and social development by reducing economic and social inequalities, by eradicating poverty and by assuring sustainable food security, social justice and environmental

sustainability. It is on this set of activities that efforts in peace building through peace education and socio-economic advancement intersect. Hence as was shown earlier peace education can be enhanced through science and technology. Since conflicts arise from disputes over natural resources (land and water), the sustainable management of natural resources and the environment should be part of the curriculum of peace education. Scientific knowledge including indigenous knowledge is extremely important in environmental management. Hence Science and technology education will contribute to peace and harmony.

Suggestion

Through peace and harmony, the population will acquire the following values and attitudes, such as:-

- Respect for life, end to violence and promotion and practice of non-violence through education, dialogue and cooperation;
- Full respect for and promotion of all human rights and fundamental freedoms;
- Commitment to peaceful settlement of conflicts;
- Efforts to meet the developmental and environmental needs of present and future generations;
- Respect for and promotion of the right to development;
- Respect for and promotion of equal rights of and opportunities for women and men;
- Respect for and promotion of the rights of everyone to freedom of expression, opinion and information;
- Adherence to the principles of freedom, justice, democracy, tolerance, solidarity, cooperation, pluralism, cultural diversity, dialogue and understanding at all levels of society and among nations.

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