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The Level of School Leadership Awareness about Education for Sustainable Development

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ABSTRACT

The research study was carried out to explore secondary schools head teachers' awareness of Sustainable Development (SD) and Education for Sustainable Development (ESD). Within the qualitative paradigm, a case study approach was employed to develop a deeper understanding of the case by gathering detailed responses from participants employing criterion-purposive sampling technique. The data were collected through interviews and focus group discussion with four purposefully selected head teachers who extended their willingness to participate in the study. Member checking was undertaken in order to validate accuracy and credibility of the data and findings of the study. The findings revealed that the head teachers demonstrated awareness of SD in terms of environmental sustainability, resource preservation, inter-generational equity and attainment of desirable future. The participants described ESD as education model for developing students' knowledge and preparing them for participation in local and global activities carried out for SD.

Keywords: Teachers' Awareness; Education for Sustainable Development; Environmental Sustainability, Resource Preservation, Inter-generational Equity

INTRODUCTION

The emergence of complex issues has led to SD issues and sustainability crisis. There is a call for SD and therefore SD Goals (SDGs) have been set by United Nations (UN) in order to achieve them (UNESCO, 2006). In order to achieve SD goals, efforts have been made to redirect education as a tool to achieve SDGs. The UN has declared the period 2005-2014 as the United Nations Decade of Education for Sustainable Development (UNESCO, 2006). Across the world, a new model and approach to education that can address SDGs is being introduced, which is more sensitive to the realities of the world and to prepare the younger generation to face the problems of the world. There are efforts to integrate SD (SD) into country policies and school education curriculum in each country. The new model of education is known as an Education for SD (ESD) and different countries of the world integrate the concepts of ESD into their own country educational contexts.

Pakistan is a country that faces many sustainability crises. There is an urgent need to change the energies towards SD activities in Pakistan. Pakistan is also involved in the SD movement. In the nineteenth session of the Commission for the United Nations Conference on SD (2011) for assistance, Pakistan urged partners from developed countries to fulfill their obligations of financial resources, technology transfer and capacity building and consumption to a sustainable level (Mushtaq & Azeem, 2012).

National Education Policy and National Curriculum (2009) incorporate components of ESD to some extent such as environmental education, education for peace and disaster risk and conflict resolution, respect for diversity. It is surprising that the core themes of ESD are part of the curriculum in various disciplines in all classes. For example, in the discipline of general science topics like exploitation of natural resources, recycling and biodiversity issues, hunger, disease, and ecological and environmental issues, deforestation, land, pollution of air and water, global warming, land degradation, floods, depletion of fisheries and wildlife, and the virus shortages HIV/AIDS, etc. are being taught.

Similarly, in social study, the issues of economic growth, population, cultural issues, peace and security and child abuse, poverty, food insecurity and unemployment issues, economic-wellbeing, social justice, democracy, good governance and the welfare of society are being discussed. Moreover, in the discipline of Islamiyat, the issues for SD such as patience, justice and brotherhood, tolerance and self-satisfaction, gratitude, and religious harmony, and respect for others, and are given rights and obligations are included in the curriculum.

Statement of Problem

The SD issues have given birth the notion of ESD (William, 2008). Pakistan is also facing serious sustainability crisis posed by energy crisis, climate changes, peace and security issues, environmental issues, educational and economic issues. In order to address these issues, there is a need for the implementation of ESD in schools in true sense. The head teachers as educational leaders are key players in the implementation of the components of ESD in their respective schools. Therefore, they need knowledge and awareness of ESD. It is necessary for them to ensure the implementation of ESD in their own schools in order to achieve the goal of a sustainable future. There is a lack of study regarding exploring head teachers' awareness about ESD. It is in this context which triggered us to investigate secondary schools' head teachers' awareness of SD and ESD which is a pre-requisite for implementation of ESD in schools.

Objectives of the Study

This study intended to explore secondary school head teachers' awareness of:

1. Sustainable Development and
2. Education for Sustainable Development.

Major Research Question

How do Secondary School Head Teachers' demonstrate awareness of sustainable development and education for sustainable development?

Subsidiary Research Questions

1. What is secondary school head teachers' awareness of sustainable development?
2. How do secondary school head teachers conceptualize education for sustainable development?

Significance of the Study

The study findings may provide insight of head teachers' awareness of ESD in developing country context like Pakistan. Another significance of this study is that by participating in this study, Head teachers may develop deeper awareness of ESD (Green, 2013). The study may also motivate the Head teachers to incorporate components of ESD recommended in school curriculum which in turn may make school education responsive to sustainability issues. The findings of this study may inspire policy makers to develop the capacity of head teachers with reference to ESD so that they can implement ESD in their respective schools.

This study is limited to generate data from interview and focus group discussion. It was not possible to use multiple sources of data for gathering rich data. The use of classroom observation of teachers' classroom practice could make in-depth exploration of the case possible. However, it is further delimited to the exploration of awareness of public secondary schools Head teachers of District Kasur and this study did not aim at exploring the awareness of public elementary and primary school head teachers.

LITERATURE REVIEW

This section provides a literature review around the concepts of the study, which include sustainable development, and education for sustainable development.

Sustainable Development

The term sustainability has been used on a large scale for more than a decade to describe the world in which human and natural systems can continue to exist for a long time in the future. The concept of "SD" refers to alternatives to traditional models of development. It comprises of alternatives that can prevent problems such as pollution, depletion of natural resources, overpopulation, loss of species, the destruction of ecosystems and the deterioration of living conditions of human (Wheeler, 1996). The World Commission on Environment and Development in 1987 coined the term for the first time (Montaldo, 2013).

The Brundtland Report (1987) defined SD as a development that meets the needs of the present without compromising the needs of future generation to meet their own requirements. Hart and Milsten (2003) defined sustainability as prospects to improve social and environmental performance of the current generation without compromising the ability of future generations to meet social and environmental needs. Zundeau (2005) defines SD as current development and progress which should not damage and hurt the interests and well-being of future generations. Finn (2009) defined sustainability as

"The practice of reserving resources for future generation without any harm to the nature and other components of it. SD ties together concern for the carrying capacity of natural systems with the social challenges facing humanity. SD is a socio-ecological process characterized by the fulfillment of human needs while maintaining the quality of the natural environment indefinitely." (p. 3).

Some of the key concepts emerge out of the above definitions. Firstly, the concept of SD is futuristic in nature. Secondly, it is planet-oriented. Thirdly, it is encompassing social, economic, environmental, cultural and political dimensions. Another well-known definition is that SD refers to improving the quality of human life while living in the carrying capacity of ecological units to support (World Conservation Union, 1991). SD is about in quest of a better excellence of life. However, this is debatable because the quality of life is perceived differently by different people and cultural groups, and it is also supported by a series of fundamental principles

and values. Therefore, understandings and visions of sustainability or SD will be different for each of us, requiring us to work together to negotiate a process for achieving sustainability (Tilbury & Wortman, 2004). The interpretation of SD is as a common currency that unites environmental, social and economic values, involves the pursuit of SD and economic prosperity, environmental quality and social justice (Gifford, 2004). Generally, in literature three aspects or dimensions of SD or sustainability has been mentioned such as environmental, social and economic dimensions of SD. These dimensions are the vital and basic rudiments of SD (Munier, 2005 & Basiago 1999). The three dimensions are also called three Es-the environment, the economy, and equity (Munier 2005). The three-dimensional diagram is very comprehensive and almost covers all the spheres or aspects of SD which we discuss below.

Environmental Dimension

The environmental domain allocated costs to air, noise, water pollution, lost farmland, swamp, running down of oil reserves, as well as carbon dioxide and ozone damages (Talberth, Cobb & Slattery, 2006). Environmental sustainability, sometimes called environmental protection, resource utilization in healthy manners so it can be enjoyed by future generations (Munier, 2005).

Economic Dimension

Economic SD or economic sustainability means economic growth implies economic progress (Munier, 2005). Indicators that provide a guide to achieve economic sustainability are the patterns of economic dependence and energy consumption and production, waste management, transport, mining and economic infrastructure, development, trade, productivity and poverty / income distribution, employment opportunities and skills development, science and technology (Mushtaq & Azeem, 2012).

Social Dimension of SD

According to Yang (2009) social dimension of SD refers to the terms of social justice, equality and social righteousness and fairness. It refers to access to knowledge and information, in non-discriminatory manner, the opportunity to work and to participate in social processes, and the ability to determine information relevant knowledge, transformation. Indicators that provide guideline and direction for social sustainability are: education, health, water, sanitation, social welfare, housing, quality of life, cultural heritage, crime, population (Williams, 2008). Other indicators include social and moral values, the role of women, access to resources and land, and equity, public awareness and governance, the role of civil society and institutional and legislative frameworks, disaster preparedness and popular participation (Mushtaq & Azeem, 2012).

The 3Es model seems to be holistic and comprehensive but some scholars and scientists confirm and emphasize the need for more than three main dimensions to SD. As Yang (2009) shows that some scientists added a four-dimensional model of 3Es list, but this "fourth" dimension varies from one to another world. Four dimensional model laws institutional and political sustainability (United Nations 1992). There are a number of scientists and scholars who are trying to justify the institutional or political dimension as the fourth dimension of SD (Fien, 1998). They claim that the institutions and politics should be considered essential for achieving SD because of its essential role in achieving social, economic and environmental objectives. For some culture should be seen as the fourth dimension of SD (Finn & Donovan, 2009).

Head Teachers' Awareness of SD

SD is one of the urgent and important concepts. Various studies have been conducted in this area exploring teachers and head teachers' awareness of SD. Nithlavaran, Sinnatham by and Gunawardana (2013) found that majority of student teachers showing poor understanding and awareness of SD. Mostly student teachers had only superficial knowledge and awareness about the dimensions of the SD and very few were able to highlight characteristics of SD. Moreover, male and female student teachers' awareness and perceptions of the concept of SD was significantly different. Pavlova (2011) observed that almost all technology education teachers were aware of the concept of SD. The teachers were aware of SD issues like food, health, clean water, and education related issues; as well as sustainable livelihoods, care for the environment and its impact on society. The teachers had heard about SD through different sources such as in the institution where they work, through media and through conferences.

Anyolo (2015) found all senior secondary school teachers having similar understanding about sustainable development and conceptualizing SD as using the resources in a sustainable way for the benefit of coming generation. Moreover, they were found conceptualizing SD as a development without finishing the natural resources, which can also be used by generation to come. Mwaura (2007) also found university teachers possessing vital research skills, knowledge and orientation about SD and the ability to conduct research on social environmental and economic issues for a sustainable future.

Sina (2015) found most teachers in Hong Kong believing that SD means finding a balance between economic, social and environmental conflicts. Moreover, the objective of SD is to preserve historical monuments, living organisms and the environment that allows them to SD, taking into account economic factors. They also considered that society has to develop further, while not do much harm to the environment or historic buildings that future generations cannot enjoy it. According Anyolo (2015) teachers defined SD as development that

ensures that meet the needs of the present generation in consideration of future generation to meet their own needs.

Conceptualization of Education for Sustainable Development

ESD means including the key issues of SD in teaching and learning such as climate changes, disaster risk reduction, biodiversity, poverty reduction and sustainable consumption. ESD also requires participatory methods of teaching and learning to enable and motivate students to change their behavior and take the necessary measures to achieve SD. ESD enhances skills such as critical thinking, prediction and making decisions in a collaborative manner (UNESCO, 2014). ESD aims at creating or improving understanding of the linkages between SD issues and development of knowledge, skills, perspectives and values that enable to take responsibility for creating a sustainable future (Ravindranath, 2007).

According to Hopkins and McKeown (2002) ESD is a combination of existing principles that have not yet been identified, knowledge, skills, perspectives and values that are organized around the concepts of sustainability and problems. In the words of Reid (2002) ESD is about the learning needed to maintain and improve our quality of life and the quality of life of the future generation. It is about preparing individuals, communities, groups and governments to live and act sustainably. ESD is also about developing understanding of the environmental, social and economic issues and preparing for the world in which we will live in the next century. ESD provides a tool to help and participate in negotiating the future and determine the consequences of our decisions. This means that education is more of a traditional practice for environmental education. ESD is seeking transformative role of education in which people participate in a new way of seeing, thinking, learning and working. People are able to explore the relationship between life and the environment and social systems and institutions, but also to become active and responsible participants in the change process. Here, educators are provided new set of skills, such as perception, critical thinking skills, reflection, dialogue and negotiation, cooperation and building partnerships (Tilbury & Wortman, 2004).

According to Fein (1993) ESD aims at developing of human capacity and creativity so that they participate in activities for better future. ESD also aims at promoting technical progress while strengthening cultural conditions which favor social and economic change to improve the quality of life and education more equitable and sustainable for economic growth.

Hopkins and McKeown (2002) defined that ESD is a combination of existing principles and then recognized practices, knowledge, skills and perspectives, and values that are organized around the concepts of problems sustainability. Reid (2002) said that education for SD is to provide individuals, communities and governments to live and work in a sustainable manner and understanding of environmental, social and economic issues involved. It is known that everywhere in the world, communities are facing the problems of war, terrorism, inequality, hunger and disease crisis and energy, environmental disasters, and many other threats to life (Matos, 2009). In this critical situation, teachers can play a vital role in the change and SD in society (Mishra, 2007) which can be possible through proper training of future teachers.

The UNESCO (2005) pointed out that ESD is an educational model which allows students to acquire the skills, capacities, values and knowledge required to ensure SD. ESD dispensed at all levels and in all social contexts such as family, school, workplace, and community. ESD aims at fostering responsible citizens and also contributes in the promotion of democracy by letting individuals and communities to enjoy their rights and fulfill their responsibilities. Moreover, ESD is based on the principle of life-long learning which aims at fostering balanced development of individuals.

ESD in the broadest sense, is education for social transformation in order to create more sustainable communities. It touches all aspects of education, including planning, policy development and program implementation, funding, curriculum, teaching, learning and assessment and management. ESD provides a coherent interaction between education and public awareness, and training in order to create a more sustainable future (UNESCO, 2012).

Head Teachers' Awareness of Education for SD

According to Pavlova (2011) technology education teachers considered ESD important for them and students. Moreover, teachers showed their agreement that ESD should be addressed through technology education and most of them believed that the economics aspect of education for SD should be dealt with most as compared to other aspects of ESD such as social and environmental aspects through education and technology. They also agreed that there is a need to support and promote cultural diversity through technology education as an education component for SD. Mwaura (2007) found that university faculty of Education was aware of ESD and teacher training fairly conformed to ESD. It was also found out that lecturers were not well aware of ESD educational initiative.

Jumani and Abbasi (2015) found that most teacher educators believed that ESD were very important, especially in the context of Pakistan, where the low level of participation in education, extremism and terrorism has distorted the society. According to Manni, Ottander, Sporre and Parchman (2013) most students and teachers of traditional environmental education had the concept of ESD was not visible and more marked in ESD. Anyolo, (2015) observed that most teachers thought that ESD as education about environmental awareness and care of

the environment for future use development. This reflects the fact that the answers of most teachers in the environmental aspect and the need to preserve the natural environment were limited.

The volume of literature is increasing with respect to SD and ESD as national and international attention is increasingly placed on these topics. The term has been used "sustainable" on a large scale more than a decade to describe the world in which human and natural systems can continue to exist for a long period in the future. The formulation of a number of definitions in this regard, but the basis of all definitions is the Brundt and Report (1987), which is futuristic in nature. Although the concept of ESD is gaining most popularity but teachers have poor understanding and awareness of SD which in turn may adversely affect the implementation of ESD in schools.

Theoretical Framework of the Study

This study was conducted with the intention to explore head teachers' awareness of ESD. This study adopted the four-dimensional diagrammatic theoretical framework developed by UNESCO (2010). The rationale to adopt the four-dimensional theoretical framework is that it is comprehensive and covers all the dimensions of SD and ESD. It covers all the four dimensions of SD and ESD such as: 1) natural or environmental dimension, 2) economic dimension, 3) social / cultural dimension and 4) political dimension. These four dimensions provided us a complete theoretical lens to explore head teachers' awareness of ESD. Therefore, the four-dimensional theoretical framework used to explore head teachers' awareness of SD and ESD with specific reference to natural or environmental, economic, political and social dimensions.

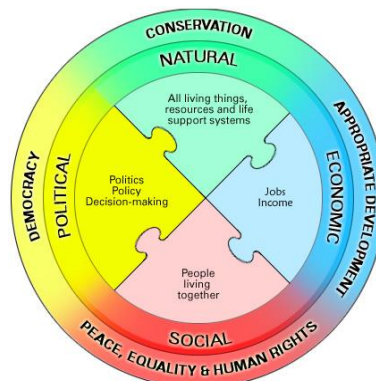


Figure 1: Diagrammatic Presentation of ESD (UNESCO; 2010).

METHODOLOGY

Research Design

A qualitative research design was employed as an appropriate approach for exploring the research questions to explore headteachers' aware of SD and ESD. A case study approach was employed as this approach was appropriate for developing a deeper understanding of the case by gathering detailed responses from research participants within the participating school contexts (Creswell, 2009). A case study approach was also used because this approach allowed us to answer both the descriptive and exploratory research questions in this study. The case study approach was also used for its appropriateness to study a unit of study known as a bounded system (Gay, Mills & Airasian, 2015) in terms of time, people and place. The bounded unit of study in this case was the exploration of head teachers' awareness of SD and ESD in the context of secondary schools within a given time period. The research questions used in this study were open-ended, which were most suitable and appropriate for a research design that was flexible and emerging in nature (Weirsmas & Jurs, 2009).

Selection of Research Sites and Participants

District Kasur has total 171 Government High and Higher Secondary Schools from which 14 schools are Higher Secondary and 157 are high schools. Moreover, out of 14 Higher Secondary Schools, 6 schools are male and 8 schools are female. Whereas high school wing comprising of 87 male schools and 70 female schools (The office of District Education Officer(SE), Kasur, personal communication). Total four public secondary schools were selected by using criterion-purposeful sampling technique (Patton, 2002).

The use of criterion-sampling technique enabled us to identify those potential schools where components of ESD were practiced to some extent. We used criterion-purposeful sampling technique because we wanted to select those individuals (research participants) who were somehow aware of ESD and wanted to select those sites (schools) where ESD had its minimal existence. The rationale for using criterion-sampling technique was that it was helpful for us to learn or understand the case deeply and fully.

The criterion-purposeful sampling technique helped us choose those head teachers who were found information-rich participants as suggested literature (Creswell, 2009). We invited four Government Secondary School Head teachers of district Kasur to participate in this study by using the criterion purposive sampling technique. The

Head teachers' awareness about ESD is of great importance in promoting ESD. In this study we used criterion-purposeful sampling technique to select research participants, which enabled us to go to potential schools and have informal discussions with head teachers in order to decide information-rich participants. Using criterion purposive sampling technique, those Head teachers were selected as research participants who were (a) aware of education for SD, (b) had some awareness regarding ESD during informal discussion held with them during the process of participant selection, and (c) willing to participate in the study.

Data Collection Tools

In this study we used multiple data collection tools such as open-ended interviews and focus group discussion with headteachers to gather rich data. We conducted three times 30 minutes long interview from each participant to explore their awareness of SD and ESD. We used one-on-one interviews for its suitability of generating rich data. We also used focus group discussion to explore shared understanding from all four participants (Creswell, 2009). A focus group interview was continued for one to one and half hour, which was helpful in gathering rich data and also validating data. The group interview was also helpful in filling the gap identified in the data gathered from interview.

Trustworthiness and Transferability

The construct of trustworthiness in interpretive research refers to validity and reliability. Following Lincoln and Guba (1999) certain techniques were employed to establish the 'trustworthiness' of the study. For instance, member checking was undertaken by sharing transcribed data and initial analysis of data with the participants for their consensus (Lincoln & Guba, 1985) generated data for rich description of the research contexts and research participants' awareness of Education for SD (Bogdan & Biklen, 1998) and used two different data collection sources and tools to validate the data and make the findings reliable.

While studying a phenomenon or a case such as head teachers' awareness, there were no absolutes, or single truths rather reality could be different for different people (Krathwohl, 2004). According to Kelley (2011) awareness is a social function which is derived from the interpretations of the individual as result of cultural and social understanding. Therefore, Head teachers' awareness of ESD was different for various reasons. Therefore, the research finding cannot be generalized to the whole population of head teachers. However, the research findings are applicable to research contexts where condition and situations are same. Therefore, the findings of this study are transferable to similar conditions in similar context.

Data Analysis Procedures

The data were read and transcribed, coded each segment of the data and sorted out the data according to the codes. The data were code, categorized and thematized in light of (a) participants' awareness of SD (b) awareness of education for sustainable development. The process of sorting sub-categories into broader category and splitting the broader category into sub-categories and themes occurred many times till the emergence of final themes and patterns.

Ethical Considerations

We shared the purpose and procedures of the study with the concerned school authorities and gained written permission to research sites from the concerned School Education Department and the Executive District Officer. We also got informed consent of the Head Teachers by sharing the purpose, methods and data collection techniques and then we negotiated time and procedure of interview. We assured the research participants that the data would only be used for academic purposes. The real name of the research site and all the research participants were replaced by pseudonyms (Gay, 2003 & Pring, 2004). The participants were selected on a voluntary basis and all the data generation process and schedule were decided on their own convenience. I tried my level best that the data generation process does not affect the institutional routine work environment and the routine of participants.

FINDINGS AND DISCUSSIONS

This section presents thematic findings of the study in the light of the research objectives and research questions. We present data about participants' awareness of SD and ESD followed by interpretations of the data.

Awareness of Sustainable Development

The findings reflect that head teachers conceptualize in terms environmental sustainability. The analysis of the data shows that all the participants have awareness of SD but their awareness is not inclusive rather reductionist in nature. All of them attach high importance to some dimensions and ignore the other dimensions.

Natural and Environmental Sustainability

The natural and environmental sustainability emerged as one of the common themes from participants' conceptualization of SD. The data reflects participants' awareness of natural sustainability from their emphasis of environmental preservation and protection. Mr. Abbas Ashraf shared the following conceptualization of SD: SD refers to the need that we must preserve the environment such as clean air, water, atmosphere and biodiversity which are part and parcel of our life. As we require to breathe fresh air to live similarly human race cannot survive without environment. So, we need to protect our environment from being damaged (Interview).

Mr. Imran's conceptualisation of SD was almost similar to Abbas Ashraf's understanding. He explained his awareness of SD as follow:

SD means protection of the natural environment. If we want to save the human race we have no choice except to protect the natural environment. It is the natural environment such as quality of air, water, land and atmosphere which are important for sustaining quality of life. In my view, it is our prime responsibility to save our environment as much as possible (Interview).

Another participant also conceptualized SD in terms of protection of natural environment by highlighting the maximum consumption habits which are posing threats for the natural world and planet earth. He conceptualized SD in the following way:

SD means that our coming generation enjoys the nature the same way as we enjoy today. We are materialistic and always think about ourselves. We are making hue and cry regarding preservation of the environment, but our actions are contrary to our words and actions. Our actions are such that may bring destruction to our coming generation. We are wasting and damaging our resources abundantly for our comforts and interests (Interview).

The analysis of the findings shows participants awareness of the natural and environmental sustainability. All the participants refer to environmental sustainability in one way or the other. For example, all the participants refer to elements of environmental sustainability, such as provision, availability and protection of fresh and quality air, fresh water, atmosphere and protection of biodiversity and species. It shows participants' awareness of SD is embedded in natural and environmental sustainability which is important because the protection of the natural environment is urgent as well as important for human life on this planet. The quality of these life-saving conditions and their protection guarantees SD. Since, the sustainability of human, species and plant life on earth will not be possible without the protection of all these resources and conditions, hence the concept of SD will be meaningless. The finding is that the participants show awareness of SD in terms of natural and environmental sustainability.

Natural Resource Sustainability

The preservation and protection of natural resources emerged as one of the common aspects of participants' understanding of SD. Almost all the participants touched upon preservation and protection of natural resources as the following quote from one of the participants' interview reflects.

Natural resources are the needs of man and the survival of mankind is possible through its preservation. Therefore, instead of exploiting and damaging natural resources such as forest, water, gas, oil, etc., we should preserve the natural resources. People are getting maximum comfort of life by damaging and using natural resources due to selfishness of the people and due to this selfish attitude of people we will face irreversible damage in terms of resource availability for our use in near future (Interview).

Another participant shared similar conceptualization about SD, while highlighting the consumption pattern of resources. He shared that:

SD is a pattern or a way of life for people to use resources without the resources running out. It does not mean that we ignore our today for the sake of tomorrow. It does not mean that we must not get benefit from the resources, but we must not waste them. SD is social progress which recognizes the needs of everyone (Interview).

Yet another participant also conceptualized SD in terms of preserving natural resources and shared the following understanding of SD.

I understand that we should use natural resources in such a way that our instant needs may be fulfilled and resources should be preserved for future. Otherwise, there will be scarcity of natural resources and the process of development will collapse (Interview).

The data analysis reveals that the participants show awareness of SD in terms of preservation and protection of natural resource as all of them touched upon preservation and protection of natural resources while talking about SD. They highlighted the needs of resource preservation and protection as an inevitable need for the survival of mankind. They urged not to waste natural resources such as water, gas, oil which would lead to irreversible damage in terms of resource availability for use in the near future. The finding is that all the participants' view SD as preservation and protection of natural resources. It implies that the participants have the conceptualization of SD as a pattern or a way of life to use resources without wasting the precious resources. That is why all the participants referred to the wise-use of precious resources and responsible human behavior regarding the consumption of precious natural resources.

Sustainability is Inter-Generational Equity

The participants conceptualized sustainable development in terms of inter-generational equity while referring to the attainment of desirable future (Zuindeau, 2006). One of the participants provided the following definition which reflects desirable his awareness of sustainability in terms of inter-generational equity as he shared that:

Also SD is that we should not ignore our today for the sake of tomorrow. We should take such steps that we can fulfill the needs of the present by preserving our future. SD goals are that we leave resources for coming generation according to their needs and instead of wasting natural resources, use them reasonably (Interview).

Another participant also shared similar awareness about SD and highlighted the importance of working for a better future. He shared that:

In my view any development which cannot be sustained is not a development in true sense. Our future seems alarming in any aspect and we have to avoid unwanted future. We must work for a future which is helpful for sustaining our life on earth. Otherwise the development which we see today is of no use rather is a harm to all of us... SD means sustaining the quality of life now and providing opportunities for a good quality of life for future generation (Interview).

The data analysis reveals participants' awareness of SD in terms of inter-generational equity. For example, participants emphasized to preserve the environment for our children and coming generation. All of them emphasized on the need to protect the environment for the benefits of our next generation is an example of participants' conceptualization of SD in terms of inter-generational equity. It means the participants are aware of the ethical dimension of inter-generational equity while transferring quality air, fresh water, natural resources and healthy atmosphere to next generation (Zuindeau, 2006).

The analysis of the data also reveals that the participants conceptualize SD in terms of resource preservation and transfer to next generation so that they could be able to meet their needs with dignity which is another example of head teachers' conceptualization of SD with reference to inter-generational equity. The critical analysis revealed that the participants pointed out two categories of generations within SD context which are current and future generations. These two categories express two different concerns such as the concern for today or present and the concern for future generation with reference to benefiting natural environment and resource preservation and availability. This finding is consistent with Yang (2009) who identified similar categories of concerns in terms of SD and divides dimension of equity into inter-generational equity and intra-generational equity.

All the participants highlighted, inter-generational equity at the heart of SD. For example, head teachers are strongly agreed that one generation should hand over the planet to the coming generation in a condition that is not worse than the first generation received it (Yang, 2009). The participants conceptualized the fact that each generation has an obligation and responsibility to future generation to pass on the resources of the planet such as natural and cultural without damaging the condition than it was received. This finding is also consistent with Weiss (1989) referring to each generation's obligation to future generation to pass on the natural and cultural resource of the planet without damaging the condition than received and to provide reasonable access to the legacy for future generations

Futuristic Perspective of Sustainable Development

The deeper analysis of the findings presented above also reveals that participants have futuristic and long-ranged view of SD. Almost all the participants referred to future while talking about SD. They recognized it as to meet the needs of today without compromising the needs of the future. An important aspect of their conceptualization is that they conceptualized SD as a process of keeping undesirable future away today and in future.

All the participants demonstrated their awareness on different aspects of SD. Specifically, all the participants conceptualized SD in terms of three different important dimensions of SD. Firstly, all the participants demonstrated awareness of SD in terms of environmental sustainability, which is, a critical dimension of sustainability. Secondly, all the participants demonstrated awareness of SD in terms of inter-generational equity. According to their conceptualization SD means intergenerational justice. What we have today must be available for coming generations.

Thirdly, all the participants conceptualized SD in terms of resource sustainability. This dimension is also important dimension of sustainability. All of the participants highlighted the need to preserve precious natural resources while bringing a change in human consumption attitude. They also urged to protect the environment from damage and preserve natural resources for future consumption. The participants emphasized that being responsible citizen of society we have to preserve resources such as use the resources in a reasonable way. To sum up, all the participants conceptualized SD in terms of three dimensions such as environmental protection, resource preservation and working for a desirable future. These areas or dimensions are critical aspects of SD which fall under the natural dimension of sustainable development (UNESCO, 2010). The significant finding is that the participants demonstrate deeper awareness of SD within the natural dimension with emphasis on protection of environment and preservation of resources but they fail to understand other dimensions of SD such as political, economic, cultural, natural dimensions of sustainable development (UNESCO, 2010)

AWARENESS OF EDUCATION FOR SUSTAINABLE DEVELOPEMENT

The second question was framed to discover participants' awareness and understanding regarding ESD. The participants conceptualized ESD differently and demonstrated awareness of ESD in terms of different concepts and purposes. It has been observed that ESD is a vast and multidimensional term. Different concepts of ESD emerged from the responses of the participants which are discussed below.

Developing Awareness and Knowledge of Issues

Almost all the participants conceptualized education ESD in terms of issues and explained that ESD is an education for developing awareness and knowledge of issues that affect sustainability. An excerpt from participants is provided here as an example:

Education for SD is education to address sustainability issues by improving students understanding and awareness of sustainability issues such as environmental issues.ESD is not very much different than the education we are currently providing to our students because some issues have already been incorporated in to our school curricula. However, it is also the fact that we should provide deeper and vast knowledge and awareness of sustainability issues to our students. (Interview).

The analysis of the data reveals that the participants conceptualize ESD as an issue-based education. They perceived it an education which addressed the present issues and future challenges. It is based on practical knowledge and try to address sustainability issues by improving students understanding and awareness of sustainability issues. The participants also demonstrated awareness of ESD in terms of providing awareness and knowledge to the people regarding sustainability issues. The finding exhibited that the participants have had the awareness that the purpose of ESD is to provide knowledge and awareness of sustainability issues. The finding is consistent with Reid (2002) who argues that ESD aims at giving students an understanding of the environmental, social and economic issues.

Preparation for Encountering Issues

Abbas conceptualized ESD in terms of individuals' preparation for addressing issues in practical life. He explained that:

Education for SD does not include only theoretical knowledge, rather it consists of practical skills and it covers many areas. Education for SD enables people to become good citizen and pay their roles in the political, social and economic progress of the country and society. For example, it aims at preparing students to address issues in their practical lives, such as addressing environmental issues (Interview).

The examination of the data reveals that the participants that the purpose of ESD is not only the provision of theoretical knowledge, rather it provides the practical skills to address issues in practical life. The participants' reference to preparing students to encounter environmental issues in their practical lives reflects such awareness. The important finding is that the participants are aware that ESD places equal importance on action dimension and prepares students for addressing issues and challenges in their lives. In this sense it is consistent with the literature. However, once again the focus is on addressing only environmental issues instead of developing students' capacity to encounter all sorts of issues. According to Ravindranath (2007) ESD is about all aspects of public awareness. This form of education provided to enhance an understanding of students about the linkages among the issues and to develop their knowledge, skills, perspectives and values for creating sustainable futures.

Preparing for Resource Preservation

Abbas conceptualized Education for Sustainable Development as a balance between the needs and consumption. He explained that:

ESD is a balance between needs and use of resources. We have to live in such a way that we fulfill our needs by using minimum resources so that coming generation may get the full benefit from preserved resources. In ESD we learn about our present problems and their solutions along with consumption of our resources and fulfillment of our needs according to our resources. (Interview).

Developing Futuristic Approach

Another participant shared almost similar views about ESD as he explained that:

ESD has many aspects, but specifically it is providing awareness to people to respect and honour precious resources and not to be involved in activities which cause the destruction of precious resources.ESD provides awareness not to waste resources by our stupid actions. ESD helps students think of future and control their life styles to avoid wastage of resources (Interview).

The critical analysis of the data discloses that the participants conceptualized ESD in terms of an education model which has the purpose of resource preservation and inculcation of values of resource respect. The participants also conceptualized ESD in terms of providing awareness to people to respect and honour precious resources and not to be involved in activities and actions which cause the destruction of precious resources. ESD provides awareness not to waste resources by selfish actions. The finding is that the participants considered ESD as a mode of education which aims to meet the needs of society, develop awareness and knowledge of issues and foster the values of respecting and protecting precious resources while teaching students how to create a balance between need and resources.

The Theoretical Model of Education for Sustainable Development

The significant contribution of this study is that headteachers conceptualize the four aspects of only natural and environmental dimension of education for sustainable development and fail to capture other three dimensions of sustainable development such as political, economic and social (UNESCO, 2010) which any model of ESD cannot afford to ignore. It is surprising that the participants fail to capture important sustainability issues such as peace and security issues confronted to Pakistan and they only glorify the natural and environmental aspects of

sustainability. Being preoccupied with this natural dimension of suitability they conceptualize ESD in terms of different aspects of the natural dimension of SD. The following four dimensional ESD educational model of emerges from the findings. The four dimensional model focuses only on environmental and resources related issues and ignore the other dimensions. The following is the diagrammatic model of ESD

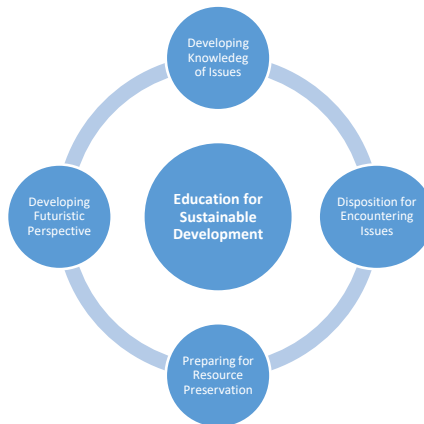


Figure 2: The diagrammatic model of ESD

The summary is that the participants conceptualized ESD with natural dimension but they highlighted different elements of ESD in their definitions with the natural dimension. For example, some participants defined ESD as an educational model of students' developing awareness and knowledge of the issues. Others conceptualized ESD as an issue-based education model which incorporates the urgent and burning issues of the contemporary age. Others defined ESD as a model of preparing students for practical life and highlighted the action dimension of ESD. Yet others conceptualized ESD as education for resource preservation and protection. In conclusion, different aspects of ESD within natural dimension has been identified. No doubt, the natural dimension of ESD is very critical but ESD has multiple dimensions such as natural, political, social and economic (UNESCO, 2010) which the participants ignore all together.

CONCLUSION

The four participant head teachers in this study conceptualized SD within natural dimension highlighting protection of the natural environment, the transformation of the same environment to the next generation and minimization of maximum consumption habits. The participants also conceptualized SD in terms of inter-generational equity (Zuindeau, 2006). They emphasized on the need to provide or transfer the same environment to the next generation from whom present generation is getting benefits today. The participants also conceptualized SD as preservation and protection of natural resources and urged to live within limits and use natural resources according to dire needs. The participants further conceptualized SD as attainment of a desirable future. To cut the matter short, the participants demonstrated awareness of SD in terms of environmental sustainability, resource preservation, inter-generational equity and attainment of a desirable future. The participants conceptualized ESD as an educational model for developing students' knowledge of issues and inculcate values in them which are helpful for encountering issues. The participants also conceptualized ESD as an issue-based model for preparing students for actions and to enable them resolve issues in practical situations and prepares students for resource preservation and protection for future generation.

Recommendations of the Study

- One of the recommendations is that the head teachers as educational leaders need professional orientation and in-service training in the area of ESD for developing their awareness of ESD. The training will help head teachers implement ESD dimension in their respective schools.
- Our education system is past oriented and we are worshipping past only. There is a need that the education system should formulate on new terms. Activities and issued based education should be our priority and future oriented education system should be our goal. In this regard, the government should introduce ESD as a compulsory subject in schools to foster awareness of head teachers and teachers of ESD in order to prepare students with the competence of encounter issues in real life contexts.
- There is a need to conduct an in-depth study in one public sector school with one or two participants for in-depth exploration of exploring the status of ESD implementation in the public school context with special references to teachers' awareness.

REFERENCES

1. Anyolo, O.E. (2015). *Implementing Education for SD in Namibia: A Case of Three Senior Secondary Schools*. Joensuu: University of Eastern Finland. Dissertations in Education, Humanities, and Theology.
2. Bogdan, R.C., & Biklen, S.K. (1998). *Qualitative research for education: An introduction to theory and methods* (3rd edition). Boston: Allyn and Bacon.
3. Basiago, A.D. (1999) *Economic, social and environmental sustainability in development theory and urban planning practice*. The Environmentalist, Vol. 19
4. Creswell, J. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. American Psychological Association: Washington, D.C.
5. Fien, J. (1998). *Environmental education: A pathway to sustainability*. Australia: Deakin University.
6. Fien, J. (1993). *Education for the Environment: Critical Curriculum Theorising and Environmental Education*. Geelong, Australia: Deakin University Press.
7. Finn, Donovan (2009). *Our Uncertain Future: Can Good Planning Create Sustainable Communities?* Ph.D. dissertation. University of Illinois at Urbana-Champaign.
8. Green, S. S. (2013). *Preschool Teachers' Early Perceptions Of Education For Sustainable Development In Early Childhood Education*. Southern Illinois University Carbondale.
9. Gifford, C. (2004). *SD*. Oxford: Heinemann Library.
10. Gay, Mills, & Airasian (2015). *Educational Research: Competences for Analysis and Application* (10th ed.). Pearson: New Dehli, India.
11. Hart, P. (2003). *Teachers thinking in environmental education: Consciousness and responsibility*. New York: Peter Lang.
12. Hopkins C & McKeown, R. (2002). Education for SD: An international perspective. In Tilbury D, Stevenson RB, Fien J, Schreuder D *Education and sustainability: Responding to the global challenge*, 13-24. Cambridge: IUCN (World Conservation Union).
13. Jumani, B.N. & Abbasi, F. (2015). Teacher Education for Sustainability in Pakistan. *RISUS - Journal on Innovation and Sustainability*, 6(1).
14. Krathwohl, D. (2004). *Methods of educational and social science research: an integrated approach*. Long Grove, IL: Waveland Press.
15. Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic enquiry*. Beverly Hills, CA: Sage.
16. Mishra, R. C. (2007). *Classroom management*. New Delhi: APH Publishing Corporation.
17. Montaldo, C. R. B. (2013). *SD Approaches for Rural Development and Poverty Alleviation & Community Capacity Building for Rural Development and Poverty Alleviation*. Yonsei University.
18. Munier, N. (2005) *Introduction to Sustainability - Road to a Better Future*. Springer, Dordrecht.
19. Mushtaq, N., & Azeem, M. (2012). Conceptual Understanding of Sustainable Development, Academic Research International, 2(2) retrieved from [http://www.savap.org.pk/journals/ARInt./Vol.2\(2\)/2012\(2.2-70\).pdf](http://www.savap.org.pk/journals/ARInt./Vol.2(2)/2012(2.2-70).pdf)
20. Mwaura, K. N. (2007). *An Investigation Into Awareness About Education For Sustainable Development (ESD): A Study Of The Faculty Of Education At The Catholic University Of Eastern Africa*: Department of Postgraduate Studies in Education, Faculty of Education at the Catholic University of Eastern Africa.
21. Marzano, R. J. (1990). Standardized tests: Do they measure general cognitive abilities? *NASSP Bulletin*, 74(526), 93-101.
22. Nineteenth Session of the UN Commission on SD (CSD-19). (2011). Summary of the Meeting. Retrieved on 5-12-2015 from <http://www.iiSD.ca/cSD/cSustainableDevelopment19/>.
23. Nithlavarnan, A., Sinnathamby, K. & Gunawardana, G.I.C. (2013). *Student teachers' perceptions about education for SD (ESD) in secondary science education*. Open University of Sri Lanka, Nawala, Nugegoda, Sri Lanka.
24. Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
25. Pavlova, M. (2011). *Perception of SD and Education for Sustainable Development by African technology education academics*. Griffith University.
26. Reid A (2002). Environmental change and sustainable education. In Smith M (ed) *Teaching geography in secondary schools*, 225-244. London: The Open University.

27. Ravindranath, M. J. (2007). Environmental education in teacher education in India: Experiences and challenges in the United Nation's Decade of Education for SD. *Journal of Education for Teaching*, 33, 191-206.
28. Talberth, J. C. Cobb & N. Slattery (2006). *The genuine progress indicator 2006: A tool for SD*, Redefining Progress, Oakland, California. <http://www.redefiningprogress.org>.
29. Tilbury, D. & Wortman, D. (2004) *Engaging People in Sustainability*, Commission on Education and Communication, IUCN, Gland, Switzerland and Cambridge, UK.
30. United Nations Educational, Scientific and Cultural Organization (UNESCO). (2006). *United Nations Decade of Education for SD Education for SD in Kenya: Critical Dialogues Brief for the Stakeholders' Forum*. Nairobi Cluster Burundi, Eritrea, Kenya, Rwanda, Uganda: UNESCO Publications.
31. United Nations Educational, Scientific and Cultural Organization (UNESCO) (2006). *The Education for SD Innovations course: Purpose of the ESD Innovations course*. Retrieved on Thursday December 10, 2015 from <http://www.unesco.org/education/tlsf/mods/themea/popus/mod04to01s03.html>.
32. United Nations Educational, Scientific and Cultural Organization (UNESCO) (2010). *Four Dimensions of SD. UNESCO Teaching and Learning for a Sustainable Future*. Retrieved on Thursday December 10, 2015 from https://www.google.com.pk/?gws_rd=cr,ssl&ei=RR9pVqHMIMirU4q3r_gK#q=unesco+dimensions+of+sustainable+development
33. Wheeler, S.M. (1996). *Sustainable urban development: A literature review and analysis* University of California. Berkeley.
34. World Commission on Environment and Development.(1987). *Our Common Future*. Oxford: Oxford University Press.
35. World Conservation Union (1991). *Caring for the Earth: A Strategy for Sustainable Living*, Gland, Switzerland, 1991.
36. Williams, D. (2008). Sustainability education is gift learning patterns and relationships. *Journal of Education for SD*, 2(1), 41-49.
37. Yang, F. (2009). *If 'Smart' is 'Sustainable'? An analysis of smart growth policies and its successful practices*. Digital Repository @ Iowa State University.
38. Zuindeau, B. (2006). Spatial approach to SD: Challenges of equity and efficiency. *Regional Studies*, Vol. 50, No. 5.