**TRANSFORMING TEACHER EDUCATORS FOR RE-ORIENTING TEACHER EDUCATION PROGRAMS FOR SUSTAINABLE DEVELOPMENT**

Prof. Dr. Munawar Sultana Mirza

Pro Vice-Chancellor Lahore Leads University Lahore, Pakistan

drmsmirza1968@gmail.com

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| ***Abstract:*** *All nations of the world have together realized that the existence of the present and future generations is bound with development that is essentially sustainable. That is why they have ratified the Post 2015 Agenda labelled as Sustainable Development Goals. They have also ratified the Global Action Program on ESD and the Incheon Declaration 2015: Vision 2030 that has committed to SDG 4 on education. Both, the GAP and Incheon have prioritized on ‘building capacities of educators and trainers to enable them to more effectively deliver ESD’. The present study was conducted to explore the perceptions of teacher educators (TEs) about sustainable development, issues threatening sustainable development (SD) at the global and national level, perceived role of teacher education in SD, the possible curricular spaces for SD and the perceived barriers for doing so. Questionnaire developed for the study was distributed to 108 teacher educators of nine TEIS. The TEs were found much below the satisfactory level on knowledge and understanding of the concepts and issues hindering the sustainable development. All except five TEs were teaching the traditional education and pedagogical subjects where they do not perceive much relevance of SD concepts. They also feel that they neither have time and authority to modify the curricula nor they have administrative and institutional support to do so. The study warrants special efforts at the level of Higher Education Commission to disseminate the relevant UN declarations and order of the Supreme Court of Pakistan for implementation analyze curricula of TE programs for including ESD and undertake capacity building activities for the teacher educators.* ***Keywords:*** *Sustainable development, sustainable development goals, education for sustainable development, teacher educators, teacher education programs.* |

# Introduction

The developmental activities of human beings have created multiple issues both for the planet and for humanity. These unsustainable practices are reflected in the form of issues such as pollution, social and economic inequalities, health issues, poverty, climate change, resource shortage and terrorism (Hopkins, 2010 & Mwaura, 2007).The world is also facing the problems of declining ecosystems, species extinctions and environmental degradation. If not controlled or reversed these issues pose severer implications for the coming generations. There is no escape except of moving towards economic, environmental and social development which is sustainable both for current and coming generations (McKeown, 2002).

In this context the United Nations adopted the Millennium Development Goals (MDGs) in 2000 to achieve by 2015 by the world community (Montaldo, 2013). With the end of MDGs era the United Nations has launched 2030 Agenda in September 2015 consisting of seventeen Sustainable Development Goals. The goals are to end poverty; eliminate hunger and achieve food security and adequate nutrition for all; attain healthy life for all at all ages; provide equitable and inclusive quality education and life-long learning opportunities; attain gender equality and women empowerment; provide secure water and sanitation for all; ensure access to affordable, sustainable, and reliable modern energy services; promote inclusive and sustainable economic growth and decent work; promote sustainable industrialization; reduce inequality within and among countries; build inclusive and sustainable cities and human settlements; promote sustainable consumption and production patterns; promote actions at all levels to address climate change; attain conservation and sustainable use of marine resources; protect ecosystems and halt all biodiversity loss; achieve peaceful and inclusive societies, rule of law and effective institutions; strengthen and enhance the means of implementation and global partnership for sustainable development.

 Education is considered to be the most important transformative tool to resolve all the social, economic and environmental problems and a means to achieve the goal of sustainable development (Mughal, Qaisrani, Solangi & Faiz, 2011). In order to achieve sustainable development goals, education must be reoriented to integrate Education for Sustainable Development (ESD) at all the stages (Gupta, 2007 cited in Mughal, Qaisrani, Solangi & Faiz, 2011). Realizing this critical transformative role of education the United Nations declared the decade of 2005-2014 as the Decade of Education for Sustainable Development (DESD) and member countries were encouraged to take initiatives to reorient education for sustainable development.

With the advent of SDGs the World Forum on Education adopted the Incheon Declaration committed to the SDG 4 “Ensure inclusive and equitable quality education and promote life-long learning opportunities for all” and its corresponding targets. The Forum envisions the transformation of lives through education recognizing its important role as a main driver of development and its role in achieving the other proposed SDGs (WEF, 2015). This vision covers critical areas of studies related to sustainable development such as human rights and dignity; social justice; inclusion; protection; cultural, linguistic and ethnic diversity; and shared responsibility and accountability. The educational vision of Incheon Declaration also recognizes education as essential for peace, tolerance, human fulfilment, poverty eradication, eradication of gender discrimination, teaching and learning environments; mainstreaming gender issues in teacher training and curricula; and eliminating gender-based discrimination and violence in schools (WEF, 2015).

The Educational Vision-2030 also commits to ensure that teachers and educators are empowered, adequately recruited, well-trained, professionally qualified, motivated and supported within well-resourced, efficient and effectively governed systems. The Declaration strongly supported the implementation of the Global Action Program (GAP) on ESD launched at the UNESCO World Conference on ESD in Aichi-Nagoya in 2014. One of the two goals of GAP is “to strengthen education and learning in all agendas, programs and activities that promote sustainable development” and two of the priority action areas are ‘building capacities of educators and trainers**:** Increase the capacities of educators and trainers to more effectively deliver ESD’ and ‘Transforming learning and training environments**:** Integrate sustainability principles into education and training settings’ (UNESCO, 2014: pp14-15)

The indispensable role of education in pursuit of sustainable development brings forth the critical role of teachers and teacher educators. UNESCO (2006) had recommended that teacher training institutions must offer Education for Sustainable Development (ESD). By the time the United Nations declared 2005-2014 as the decade for Education for Sustainable Development, the role of higher education in general and that of teacher education in particular has been recognized as vital for promoting sustainable development. Many countries and universities around the world have developed initiatives to move forwards to ESD (Mai, 2007). Most of the universities around the world have incorporated some level of ESD into their curricula (Frederick, 2012). In order to achieve sustainability through education, there is need to develop an ESD conscious teachers’ generation. Educational institutions, particularly the ones educating or training teachers, stand out as the vehicles for instilling knowledge and training the teacher with the desirable knowledge on sustainable development (Mwaura, 2007). Teachers’ preparation for such future-oriented thinking is a key task of teacher educators. Hence, teacher education has particular role to play in promoting sustainable development of the societies in order to promote intergenerational equity, gender equity, peace, tolerance, poverty reduction, environmental preservation and restoration, natural resource conservation, and social justice (Hopkins & McKeown, 2006 cited in Mirza, 2015).

 The growing concerns in environmental, economic and social sustainability issues including terrorism have challenged the role of higher education institutions in Pakistan as well. At least 19 of the goals listed in the National Education Policy (Government of Pakistan, 2009b cited in Mirza, 2015) relate to ESD. According to her one of the goals of NEP exhibit the intention to include emerging trends and concepts such as school health, prevention education against HIV/AIDS and other infectious diseases, environmental education, population and development education, human rights education, school safety, disaster and risk management, peace education, interfaith harmony, and prevention of child abuse. In-spite of policy statements, ESD activities are not much visible in the educational institutions of Pakistan. However, the National Accreditation Council for Teacher Education (NACTE) in accordance with the NEP, MDGs, and other international declarations and trends realized the role that teacher education can play in sustainable development. It has included standards relating to ESD in its accreditation standards and has laid down a number of specific ESD criteria and benchmarks for teacher education programs (Mirza, 2015).

**Definitions of Education for Sustainable Development**

 There are different and multiple definitions of Education for Sustainable Development.

According to Nevin (2008)

 “Education for Sustainable Development (ESD) promotes the development of the knowledge, skills, understanding, values and actions required to create a sustainable world, which ensures environmental protection and conservation, promotes social equity and encourages economic sustainability” (p.50).

“ UNESCO (2010) also provides somewhat similar definition while highlighting the importance of a holistic approach as under:

“…widespread in its concerns-sustainable development is about economic, social and environmental concerns affecting our present and future. Education for sustainable development embraces not only learning about sustainable development, but also its furtherance through the adoption of (and thinking about) practices in our daily and professional lives, that contribute to more sustainable (or more accurately, perhaps, less unsustainable) development” (UNESCO, 2010; p.14).

 The concept of education for sustainable development is based on three main interdependent and interrelated pillars of sustainable development such as environment, society and economic. With the progression of the concept over years the UNESCO (2014) provides the following comprehensive definition of ESD:

 ‘ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content, outcomes, pedagogy and the learning environment. It achieves its purpose by transforming the society’ (p.12).

 ESD encompasses a new vision of education seeking to empower people of all ages to display responsible behavior for creating a sustainable future (UNESCO, 2002). It provides opportunities for people to reflect upon preferred futures, defining their vision for sustainable development (Tilbury & Wortman, 2004).ESD is a culturally rooted and locally relevant educational approach. It seeks to frame values, worldviews and cultural expressions within a process of dialogue which is necessary for working together towards a common future (Tilbury & Mulà, 2009).

 The model of ESD calls for reorientation and revision of traditional models of education. According to UNESCO (2005) educational content and methods must be oriented more clearly towards the goals of sustainable development. The curricula of educational institutions must be revised to include explicitly the study and understanding of problems linked to social, economic, environmental and cultural sustainability.

Tilbury and Mulà (2009) identified the following key principles of education for sustainable development which include futures thinking, critical and creative thinking, participation and participatory learning, intercultural partnerships and systemic thinking which are essential for sustainable development and sustainable future.

**Themes of Education for Sustainable Development**

 Education for sustainable development covers wide variety of economic, socio-cultural and environmental issues. UNESCO (2008d) identified the following key learning themes which include peace and human security; conflict resolution; human rights; citizenship, democracy, governance; participatory decision-making; gender equality; cultural diversity; intercultural understanding; biodiversity; ecological principles, ecosystems and natural resources management. The other learning themes include climate change; disaster prevention; energy; waste; health and well-being; consumerism and ethical trade; water; rural and urban development; corporate social responsibility and globalization. According to (UNESCO, 2006) ESD also covers multiple areas of concerns such as social justice security and peace, environmental issues, respect for diversity, human rights, risk management, economic issues, health issues, illiteracy. UNESCO (2010) identifies various global issues that serve as foci of ESD curriculum which include culture and religion for a sustainable future, indigenous knowledge and sustainability, women and sustainable development, population and development, understanding world hunger, sustainable agriculture, sustainable tourism, sustainable communities, globalization and climate change. UNESCO (2012) further provides a list of some other issues as themes of ESD such as poverty eradication, water and sanitation, energy, transportation, sustainable cities and human settlements, employment, oceans and seas, forest, desertification, sustainable consumption and production. Most recently the SD has been delineated into seventeen areas in the form of SDGs (UN, 2015).

**Integration of Education for Sustainable Development in Teacher Education Programs**

 There is a call for teacher education institutions to integrate ESD more explicitly into the curriculum and recommendations for reorienting teacher education programs (TEPs) for addressing sustainability issues in order to develop sustainably conscious teachers. TEIs are considered as key change agents in transforming society for sustainable future (UNESCO, 2005). TEIs provide opportunity for teachers to teach for sustainability while beginning their teaching careers. However, in most universities of the world sustainable development is still a relatively new idea (Lozano, 2006). UNESCO along with many other initiatives had created the Chair to reorient TEPs for sustainable development. The faculties of education need to decide the themes to emphasize within their curriculums, programs, practices, and policies in order to ensure that teacher-education programs fit the environmental, social, and economic conditions and goals of their communities, regions, and nations.

**Teacher Educators’ Understanding of Education for Sustainable Development**

Despite the fact that ESD is one of the urgent and emerging concepts in the domain of teacher education the findings of studies reveal that many of the educators do not have understanding of ESD. Mwaura (2007) found some educators admitting that ESD was a new concept to them and they had not heard about it before but most of the educators had knowledge of ESD. All the educators agreed ESD concerns in education were vital to teacher training and that universities needed to adopt ESD fully as it offers answers to most challenges in teacher training. Hunt, Chung, Rogers and Inman (2010) also found educators indicating awareness and commitment to ESD and Global Citizenship (ESDGC) in the context of United Kingdom. The educators showed familiarity with the terms of ESD such as global dimension and global citizenship.

 Teacher educators provide various conceptualization of ESD. Hunt, Chung, Rogers and Inman (2010) found teacher educators articulating ESD differently in the context of United Kingdom. Some conceptualized ESD thematically / conceptually. This thematic and conceptual articulation was provided around a number of key concepts e.g. values, rights, active citizenship. For example, most of the teacher educators validated that their programs have a commitment to values education, social justice, active citizenship, rights education, sustainable development, global dimension, global citizenship, critical inquiry to analyze complex issues and commitment to participation in local and global society through local actions. Others conceptualized ESD through subject-specific focus. Another some conceptualized ESD through a policy or research lens and yet others conceptualized it a practical teaching / learning level (Hunt, Chung, Rogers and Inman, 2010). Research studies have also identified that some educators lack understanding and knowledge of ESD. Liu (2009) found lack of trained professionals who are knowledgeable about ESD. The faculty members found lacking awareness and understanding of the concept of sustainable development at the time of implementing any work on education and learning of sustainability in the institutions.

**Educators Perceptions of Burning Sustainability Issues and Problems**

 Educators perceive different issues as most pressing sustainability issues and world problems. Mwaura (2007) found educators referring to various social problems facing their countries such as endemic diseases, tribalism and cultural conflicts, racism, political problems, insecurity, drought/famine/hunger/starvation, corruption, land problems, ignorance and illiteracy, religious rivalry, transport and housing problem, inability to combat disasters, poverty, poor leadership, moral decay, inequitable distribution of resources, overpopulation, unemployment, slums, gender issues, drug abuse, abuse of women and children and poor governance. The respondents also identified various economic problems issues and problems including poverty, unemployment, corruption and inflation. They also referred to pressing environmental problems such as desertification and environmental degradation as serious issues facing to their countries.

**Educators’ Opinion about the Topics in their Program of Studies Relevant to SD**

 Educators also identify various issues and themes as foci of ESD. For example, Mwaura (2007) found educators identifying different areas of concerns of ESD which include issues of gender equality, environmental protection, rural development, human rights, health care, HIV/AIDS and consumption patterns, complexity and interrelationship of problems such as poverty, wasteful consumption, environmental degradation, urban decay, population growth, gender inequality, health, conflict, and the violation of human rights that threaten our future and developing respect for present and future generations, for difference and diversity, for the environment, for the resources of the planet we inhabit. Mwaura (2007) adds that those who had taken ESD related courses mentioned courses like HIV/AIDS, gender, environment, ICT and education psychology/counseling psychology as other themes of ESD.

 Dawe, Jucker and Martin (2005) found academics referring to climate change, biodiversity and environmental management systems as ESD themes in several disciplines. They also refer to major gaps in terms of incorporation of themes into courses such as sustainable production and consumption, eco-efficiency and national and international sustainable development policy. (Mwaura (2007) identified teacher educators referring to peace and reconciliation studies as one area that should be included in courses in order to help teacher-trainees in developing skills to enhance and cultivate peace and learn on diversity.

**Perception of Teacher Educators about the Effectiveness of Courses on ESD**

 Those educators who were somewhat engaged in teaching ESD to student teachers perceive the courses as follows. Dawe, Jucker and Martin (2005) found academics considering approaches of ESD helpful in developing skills and attributes such as interdisciplinary thinking, problem solving and team working, connecting students with real life experience and contact with nature. The courses were also termed to be helpful for developing critical thinking and systems thinking skills among students. Most respondents considered ESD helpful in achieving a change in outlook for the student in continuing professional development (CPD) of students throughout their lives.

 Mwaura (2007) found educators terming the courses they offer would help trainee teachers teach about current challenges such as economic development, conflict and resolution, environmental conservation, political democratization, gender and children issues, youth empowerment, preparing youth how to manage business in a sustainable manner and community service activities and develop projects in sustainable farming. The educators also termed the provision of ESD to train teachers and equip them with knowledge and skills in sustainable development as well as to instill values, knowledge, attitudes and skills in prospective teachers on sustainable investment.

**Enablers for Sustainable Development**

 Despite the fact that ESD is still not well integrated into higher education curriculum, yet there are multiple possibilities to capitalize on the existing status of ESD in higher education programs. UNESCO (2014) documents multiple possibilities and enablers of ESD. Firstly, across many countries trends are seen to make education more relevant to the social, environmental, and economic challenges that the world faces today and in the future and ESD provides a framework for such educational model. Secondly, sustainable development agendas and education agendas are converging and education is figuring prominently in international debates on sustainable development which makes the future of ESD brighter. Thirdly, the awareness of engaging stakeholders for ESD is increasing and political leadership has proven instrumental in terms of provision of resources to put national ESD strategies or plans in place, contributing to the integration of ESD into national education and sustainable development policies. Fourthly, UNESCO (2014) states that there is multi-stakeholder partnerships and collaboration. Local commitments are growing and successful efforts are being made in terms of developing awareness of the importance of working at local levels to increase citizens’ knowledge and participation in local solutions. It is also argued that ESD is galvanizing pedagogical innovation and promotes whole-institution approaches mainstreaming sustainability into all aspects of the learning environment such as integrating sustainability in curriculum and learning processes, facilities and operations, interaction with the surrounding community, governance and capacity-building.

**Challenges in Integrating ESD in to Teacher Education**

 The provision of education for sustainable development poses multiple challenges. The report of UNESCO (2005) lists many challenges which include the development of educational programs for sustainable development for all; ensuring contextualized quality education to meet different learners’ needs; ensure access to basic education, particularly for adults and girls; integrate an educational component in national strategies of sustainable development; improve teachers’ training in sustainable development; improve scientific and technological education for sustainable development at all levels and ensure participation of populations and community in decision making. In Pakistan some efforts have been made to integrate ESD elements into teacher education (Mirza, 2015). The challenges in introducing ESD related contents and activities have been identified as the absence of objectives with reference to ESD in curriculum, poor quality of teacher training programs with regard to ESD, time constraints, marginalization of education for sustainability and conceptual misunderstandings of ESD on the part of teacher educators and prospective teachers as well as the absence of strategies to achieve the goals (Jumani & Abbasi, 2015).

 Hopkins (n.d) cited in McKeown (2002) identified twelve major issues hindering the advance of ESD which include lack of awareness of ESD, structuring and placing ESD in the curriculum, linking educational reforms with the existing issues, facing the complexity of sustainable development concept, developing an ESD program with community participation, engaging traditional disciplines in a trans disciplinary framework, sharing the responsibility, building human capacity, developing financial and material resources, developing policy, developing a creative, innovative, and risk-taking climate and promoting sustainability in popular culture. According to Liu (2009) lack of resources to introduce ESD in higher education is another challenge resulting bad impact on the progress of ESD in university campuses. Dawe, Jucker and Martin (2005) identified four major barriers to the successful integration of ESD into subject disciplines in HE such as overcrowded curriculum, perceived irrelevance by academic staff, limited staff awareness and expertise and limited institutional drive and commitment.

Hunt, Chung, Rogers and Inman (2010) found teacher educators talking about a number of constraints to incorporating ESDGC into teacher education curriculum such as lack of time, lack of funding, perceived importance of ESD, lack of tutor expertise, limited staff involvement. UNESCO (2005) also lists various challenges for reorienting teacher education to address sustainability that include institutional awareness, support, and resources; prioritizing sustainability in the educational community; reforming education systems and structures; and establishing and sustaining.

**Statement of the Problem**

 Education for Sustainable Development (ESD) has been integrated into many global frameworks and conventions related to key areas of sustainable development such as climate change, biodiversity, disaster risk reduction, sustainable consumption and production. The Education Policy, 2009 0f Pakistan also addresses a number of sustainable development issues. The NACTE has included standards relating to ESD in its accreditation standards (Mirza, 2015). It is therefore, hoped that teacher education institutions (TEIs) in Pakistan offer education for sustainable development and prepare teachers for teaching about sustainable development. There has been lack of studies on teacher educators’ awareness and practices about education for sustainable development in Pakistan. We do not know whether our TEIs and teacher educators (TEs) prepare prospective teachers as ESD conscious and competent teachers. It is this context which prompted the proposed study.

**Objectives of the Study**

The study intended to explore the teacher educators’

* understanding of the concept of SD
* perceptions of burning issues that adversely affect sustainable development
* knowledge about international declarations and conventions on SD
* opinion about the topics in their program of studies relevant to sustainable development in teacher education programs / courses
* perception about contribution of courses in developing prospective teachers’ understanding of sustainable development
* perception of courses that prepare prospective teachers for teaching in schools about sustainable development in schools, and
* possibilities, challenges and difficulties in the inclusion of topics and activities relevant to SD in the courses of studies of the programs.

**Significance of the Study**

 The findings of the study may contribute to scholarly literature of ESD in teacher education institutions by providing insight into teacher educators’ perceptions of some of ESD concepts in Pakistan. The findings of the study may be helpful in initiating a discussion on ESD in teacher education institutions in Punjab. The findings also may serve as the basis for recommendations for future scholarly research and professional development for teacher educators and prospective teachers.

 Another significance of this study is for the participants of the study. By participating in this study, teacher educators felt challenged about their awareness and practices of ESD which in turn may have an impact on their willingness to practice ESD in their respective classrooms. The findings may also unpack barriers and challenges in integrating ESD into teacher education institutions curricula in the context of Pakistan which open avenues for integrating ESD concepts into teacher education curricula for preparing prospective teachers as ESD conscious teachers and competent teachers.

**The Theoretical Framework of the Study**

 The three dimensional theoretical framework of sustainable development discussed earlier is the appropriate theoretical framework for this study because its comprehensiveness in terms of coverage of multiple areas of concerns. The three dimensions of sustainable development include equity, economic and environment. This framework is used in this study because it provides a lens to analyze whether teacher education programs and participants address ESD components in each of the mentioned three dimensions.



*Figure 1: Model on Sustainable Development (Yang, 2009; p. 17)*

**Methodology**

**Instrumentation**

After detailed review of the related literature a questionnaire was developed for the teacher educators to grasp their understanding and knowledge of SD and the activities included in the curriculum. In addition to the demographic and professional data, the questionnaire had a number of structured questions on a five point Likert Scale using terminology suitable to the content of the questions. Such as ‘not at all’ to ‘a great extent’ and from ‘strongly agree’ to ‘strongly disagree’. Some open ended questions were also included to explore the understanding of the TEs on various issues.

**Sample and Data Collection**

Multistage purposive sampling technique was used for the study. In the first stage three universities, two from the public sector and one from the private sector, and six affiliated colleges, three with each of the public sector university were selected. In the second stage two teachers teaching undergraduate (one year B.Ed.; 4years B.Ed., M.A Education and M.Ed) and graduate (MPhil/ MS) degree programs were selected from the selected institutions. The affiliated institutions were generally offering one program only while the universities were offering multiple programs including MPhil/ MS. The total number of TEs so selected was 108. The TEs were contacted by one of the researcher through the relevant head of the institution and or the head of the program. TEs were then personally contacted and requested to spare some time for the purpose. However, only 53 teacher educators returned the questionnaire and that too after a lot of persuasion. It is apprehended that the teacher educators were not well versed with the concepts included in the questionnaire and were taking time to orient themselves. The distribution of respondents is given in table 1.

Table1: Number of respondents- distribution by type of institutions and gender

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Institution | Men  | Women | Total |
| University | 19 | 10 | 29 |
| Affiliation | 09 | 15 | 24 |
| Total | 28 | 25 | 53 |

Most of the respondents were teaching undergraduate classes of teacher education with only eight of them teaching MPhil/ MS classes as well. Only five of all the teachers were teaching a course relevant to SD- three of them taught environmental education and two taught sustainable development. The review of the syllabus of teacher education programs revealed that one university has listed one of the two courses and another university has both of these courses listed under elective courses in their curricula.

*Respondents’ Concept of Sustainable Development*

Nearly half of the respondents did not give any definition of the concept of SD which may mean that they have either not heard this term earlier or they do not have the concept. The nature of response by the remaining respondents shows that they have some concept that development should be everlasting and the rights of future generations should be protected.

Table 2: Respondents’ definitions of sustainable development

|  |  |  |
| --- | --- | --- |
|  Definition | Frequencies |  % Cases |
|  | Everlasting, Purposeful, Comprehensive & Enduring Development | 11 |  22.0 |
| Avoid activities which lead to environmental issues | 2 |  4.0 |
| Fulfill present needs without compromising future generations’ needs | 4 |  8.0 |
| Addressing edu., poverty & Gender equality | 4 |  8.0% |
| Other | 5 |  10.0% |
| No Response | 24 |  48.0% |
|  |  |  |

*Perceived Issues that Adversely Affect Sustainable Development*

Teacher educators were requested to list five issues that threaten the sustainable development. Nearly one fourth of them did not respond to this question. The other three fourths considered environmental issues, overpopulation, terrorism and extremism, shortage of resources, and illiteracy as the top most threatening issues. It is astonishing that poverty and health issues remained kind of neglected by the teacher educators.

Table 3: Issues that adversely affect sustainable development of the world

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Issues which Affect SD | Frequencies | % of Cases  | Rank Order |  |
|  | Unemployment | 4 |  8.0  |  |  |
| Terrorism, Extremism, War/Conflicts | 14 | 28.0 | 3 |  |
| Illiteracy/ Lack of Education | 10 | 20.0 | 5 |  |
| Uneven Distribution of Wealth/ Injustice/ poverty | 5 | 10.0 |  |  |
| Lack of Awareness about Sustainable Development | 1 | 2.0 |  |  |
| Environmental Issues Like: pollution, deforestation | 30 | 60.0  | 1 |  |
| Over Population | 15 | 30.0 | 2 |  |
| Resources Shortage; Energy Crises, Water Shortage | 12 | 24.0 | 4 |  |
| Wastage of Resources Like Water, Oil, and Gas | 6 | 12.0 | 7 |  |
| Health Related Issues | 1 | 2.0 |  |  |
| Natural Disasters | 7 | 14.0 | 6 |  |
| Corruption | 3 | 6.0 |  |  |
| Waste Management Issues | 2 | 4.0 |  |  |
| Global Politics | 1 | 2.0 |  |  |
| Other Issues | 4 | 8.0 |  |  |
| No Response | 12 | 24.0 |  |  |
|  | **---------------------------------------------------------------------------** |  |  |  |  |

*Awareness of Teacher Educators about Millennium Development Goals*

Teachers’ awareness about the global and national efforts for sustainable development were explored by referring to the MDGs and not the SDGs considering the fact that the later are very recent and TEs might have no knowledge about those. It was found that majority of the TEs did not respond leading to conclude that they were not even familiar with MDGs. Only two of the MDGs were mentioned by one fifth or little more TEs. Poverty and health remained almost neglected again.

Table 4: MDGs listed by the Teacher Educators

|  |  |  |
| --- | --- | --- |
| MDGs | Frequencies | Percent of Cases |
|  | Increasing Literacy, EFA, UPE | 18 | 35.3 |
| Improving Living Standards of People/ Poverty alleviation | 7 | 13.7 |
| Gender Equality | 11 | 21.6 |
| Women Empowerment | 1 | 2.0 |
| Increase Employment Opportunities | 2 | 3.9 |
| Social Justice | 4 | 7.8 |
| Early Childhood Care | 3 | 5.9 |
| Addressing Environmental Issues | 3 | 5.9 |
| No Response | 29 | 56.9 |
|  |  |  |

As the TEs lacked information about MDGs, they also did not know the relevant era. However, nearly half of them replied correctly.

*Teacher Educators’ Perceived Role of Education in Sustainable Development*

Teacher educators identified three areas relating to environment, one of social justice and one of economic wellbeing of people where they perceive a possible positive role of education.

Table 5: Perception of TEs about Role of Education in Promotion of SD

|  |  |  |
| --- | --- | --- |
| Perceived Role | Area | Mean weight/4.00 |
| Fostering resource friendly values and behaviors  | Environment | 2.08 |
| Addressing resource shortage  | Environment | 2.0 |
| Transforming culture to younger generation  | Social | 1.92 |
| Addressing economic well-being of the people  | Economic | 1.87 |
| Promoting social justice  | Equity | 1.87 |
| Addressing environmental protection  | Environment | 1.85 |

*Perception of TEs about SD concepts in TE courses and Preparation of Prospective Teachers for Promoting SD*

Teacher educators had an understanding that teacher education programs do not include required courses related to SD as the mean rating score was 1.58/4.00 and for that reason the programs were not effectively preparing prospective teachers who could promote the adoption of sustainable life styles and practices among the youngsters of the country. They suggested four broad areas for inclusion in teacher education programs with highest weightage for topics on culture, peace and security with three other areas with almost equal weightage. The areas include ecological and environmental, social justice and poverty reduction, and water and energy. Relevant to mention that six (11.3%) of the teachers considered that SD topics are not relevant to the subjects being taught by them. By topic detail is given in table 6.

Table 6: SD Concepts suggested by TEs for inclusion in the TE courses

|  |  |  |
| --- | --- | --- |
| Broad Area od SD | Concepts | Mean rating/4.0 |
| Ecological & Environmental Issues | Waste reduction and management | 2.19 |
| Climate change and all forms of pollution  | 1.92 |
| Deforestation, desertification | 1.89 |
| Land, water, oil, gas and other energy shortage | 1.89 |
| Disaster risk reduction, meeting emergency situations | 1.85 |
| Social Justice & Poverty Reduction | Poverty and poverty reduction  | 1.96 |
| Elimination of gender-based discrimination  | 1.94 |
| Violence in schools  | 1.88 |
| Human rights | 1.60 |
| Resource depletion: water and energy | Resource shortage | 2.27 |
| Energy conservation practices | 1.85 |
| Water conservation Practices  | 1.76 |
| Respect for resources | 1.74 |
| Culture, Peace and Security | Local, regional and global conflicts  | 2.34 |
| War, nuclear expansion | 2.28 |
| Terrorism  | 2.25 |
| Developing tolerance for other culture/faith | 2.10 |
| Respect for cultural, ethnic and ideological diversity | 1.83 |
| Local cultural conservation | 1.79 |

*Problems Perceived by TEs in Reorienting Teacher education for SD*

In-spite of a moderate realization to add sustainability relevant topics in the curricula of teacher education programs the TEs were kind of reluctant to work for the purpose describing that they do not have time and freedom to incorporate such topics. They also have no support from the relevant management.

Table 7: Barriers perceived by teacher educators in incorporating SD relevant topics in curricula

|  |  |
| --- | --- |
| Problems | Mean weight/ 4.0 |
| No time to change the course | 2.53 |
| No support from management | 2.37 |
| No freedom to incorporate SD in the course | 2.19 |
| Lack of Subject matter knowledge | 2.04 |

**Conclusions**

The overall situation of teacher educators regarding their knowledge of the issues relevant to sustainable development of their own country and the planet were below satisfactory. Nearly half of the teacher educators did not give any definition of sustainable development and they did not respond to the questions about MDGs. The mean response of the remaining half of them remained on the lower side, even below midpoint of the scale. The reason for attaching such low importance to the SD topics can be attributed to the subjects currently included in the curriculum and being taught by them where they do not find it appropriate to include such topics in their courses. They were teaching the traditional pedagogical courses such as classroom management, educational philosophy, educational psychology, research methods, educational administration etc. where they do not find much space for SD related topics. However, inter comparison of response on various items shows that they considered environmental issues and over population as threats to the sustainable development. But poverty, unequal distribution of wealth and health remained very low on the scale. Strangely this finding is in consonance with the policies of the government which is not prioritizing on these two most important areas as well. Similarly, least realization was exhibited about the real core of SD i.e. changing attitudes and values about resources, humanity, rights of the future generations, cultures and gender equality. Teacher Educators gave comparatively more importance, though on the lower side of the scale, to the need of including topics relating to peace and security in the curriculum of teacher education programs. But, they feel that they have neither time and freedom nor administrative support to modify the curriculum of the teacher education programs. Lack of knowledge was also identified as a barrier to introducing new SD topics in the curricula. The findings are in consonance with those identified by Hunt, Chung, Rogers and Inman (2010) and Jumani, N. B. & Abbasi, F. (2015). Dawe, Jucker and Martin (2005), UNESCO (2005) and Hopkins cited in McKeown (2002) have mentioned similar kind of barriers in reorienting teacher education programs for sustainable development.

**Discussion and Recommendations**

An analysis of the curriculum of consecutive or post academic teacher education programs such as one year BEd/ M.Ed, two years M.A.Education and MPhil curricula shows that those are overcrowded with the traditional pedagogical subjects as the core courses. In rare cases one or two course relevant to SD have been listed under elective courses which are offered only on the subject choice of students and availability of teachers. Even the concurrent four year BEd program lacks emphasis on SD related topics. Because of this context the teacher educators neither feel a need nor do they have any orientation as to what and how such content may be included and incorporated in the curricula. Teacher educators generally do not know much about MDGs and the status of Pakistan and are least informed about the post 2015 Agenda.

The fact of the matter is that Pakistan, a highly populous country of the world, has missed almost all the MDGs targets. For its survival it needs to work seriously for sustainable development. It has the required spring board to jump and take up the ESD Agenda as it is a signatory to the SDGs, 2015 and the Incheon Declaration,2015. Within country law and support is also available. For example the Supreme Court of Pakistan has directed that ‘appropriate curricula be developed at school and college levels to promote a culture of religious and social tolerance’. It also ordered that the Federal Government should constitute a taskforce for developing a strategy of religious tolerance (Supreme Court of Pakistan, 2014). Moreover, the National Accreditation Council for Teacher Education has included some standards on ESD for accreditation of TE Programs.

 On the basis of the above contextual facts it is recommended that SDGs along with its action plans should be disseminated and promoted earnestly and the teacher educators should be focused in particular. The Higher Education Commission should delineate necessary strategy to analyze the curricula of TE programs. It is much easier to include SD topics in the concurrent undergraduate four year TE programs than in the post academic TE programs. However, at least one course on ESD must be added in all post academic teacher education programs. Moreover, the traditional pedagogical subjects should be taught using teaching learning strategies that may promote critical and reflective thinking, empathy, collaborative and participatory team work, and contextualizing the learning. Student activities may be designed enabling prospective teachers to actively participate in SD activities in the institutions and in the adjacent communities. For ensuring tangible and meaningful learning outcomes such field/practical work should not only be compulsory but a graded component of each program. The HEC should also include ESD as an element for evaluating and rating the universities and institutions.

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