GENDER BASED EVALUATION OF HUMAN RESOURCE CAPACITY FOR THE INTEGRATION OF ENVIRONMENT BASED EDUCATION IN FORMAL EDUCATION SYSTEM

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DECLARATION

I hereby declare that this thesis, "**Gender Based Evaluation of Human Resource Capacity for the Integration of Environment Based Education in Formal Education system**" neither as a whole nor as a part has been copied out from any source. It is further declared that I have done this research work with the accompanied report entirely on the basis of my personal efforts, under the proficient guidance of my teachers especially my supervisor Dr.Rashid Saeed. If any part of the system is proved to be copied out from any source or found to be reproduction of any project from any of the training institute or educational institutions, I shall face the consequences.

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FORWARDING SHEET

The thesis entitled "Gender Based Evaluation of Human Resource Capacity for the Integration of Environment Based Education in Formal Education system" by Aisha Anjum in partial fulfillment of MS in Environmental Science has been completed under my guidance and supervision. I am satisfied with the quality of student's research work and allow her to submit thesis for further processes per IIU rules and regulations.

Dr.Rashid Saeed

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DEDICATION

This humble work is dedicated to
My loving and precious parents and
the people who enlighten ways of my life.

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LIST OF ABBREVIATIONS

CEEP	Coordinate Environmental Education project
EBE	Environment Based Education
EE	Environmental Education
EIC	Environment as an Integrated Context
EEP	Environmental Education Promotion Project
GDP	Gross Domestic Product
GCI	Global Competitiveness index
GER	Gross Enrolment Rate
GNP	Gross National Project
GPI	Gender Parity Index
HEC	Higher Education Commission
LFP	Labour Force Participation
MOE	Ministry of Education
NAAEE	North American Association for Environmental Education
NEETF	National Environmental Education and Training Foundation
NER	Net Enrolment Rate
NCS	National Conservation Strategy
OECD	Organization for Economic Co-operation
SPDC	Social Policy and Development Center
SEER	The State Education and Environment Roundtable
UNCED	United Nations Conference on Environment and Development

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme

ABSTRACT

Environmental awareness, knowledge and skills have strong influence on the EE implementation. This study shows that respondents have positive environmental attitude but there is discrepancy in their attitude and actual behavior. Our National Educational policy supports environmental education so Environmental Education Promotion Project has conducted situational analysis of existing state of environmental concept with in the curriculum and textbook, highlighted gaps and recommended improvements from primary up to higher secondary level (class I-XII).

Educational institutions of Rawalpindi and Islamabad were selected as study area and a self-designed research instrument of data collection (Questionnaires) was applied in the field. The data was analyzed by using SPSS. Pakistan's literacy rate is very low and gender discrimination in playing an important part in making the females the victim of this discrimination. In both cities EE and EBE status is at early stages while the concept of EBE has not found and people are taking EE and EBE as one approach. It has found on basis of study that most of the teachers have concept of environment education but they could not differentiate EE and EBE. Females are found more sensitive and responsible. It was also revealed that variables of gender, teaching level and subject category significantly affect the opinion of teachers but academic qualification and teaching experience have not much affect on teacher's opinion. If the concept of EBE is introduced and lessen the gender discrimination in education then results showed that results showed that female would be a strong agent for implementation of EBE.

CHAPTER 1

INTRODUCTION

The existence, survival and progress of life rely on quality of environment. Now a days, environment is facing a level of destruction which was never imagined before (Nagra, 2010). All environmental degradation is due to mal-adaptive attitude, struggle for better life and high living standards at the cost of precious natural resources. Today's man with well equipped technology and science leading towards indiscriminate use of natural resources, urbanization, industrialization, excessive use of fossils fuels, inordinate use of chemical fertilizers and pesticides, barrages and dam construction has brought about deforestation, environmental pollution, soil erosion and desertification. All these categories of environmental degradation stimulate global warming and have proceeded to a global catastrophe (Maloney and Ward, 1973).

All environmental problems are due to the lack of environmental awareness and education (Farooqi and Fatima, 2009). Pakistan being a developing country has growing poverty which is directly or indirectly associated with environmental degradation. Most of the population, living in rural areas, for its livelihood depends on country natural resources. The depletion and degradation of natural resources has adverse effects on livelihood of people by reducing yield, low employment opportunities and incomes (Malik, 2004).

It is a pressing need to conserve environment and restore its quality. In 1972, United Nations Conference on the Human Environment was held in Stockholm. For the first time, state of global environment was discussed at international level. Later on, Belgrade Charter 1975, Tbilisi Report 1977 and Agenda 21 of Rio Declaration 1992, etc.,

presented environmental reports time to time. Other than these reports many NGOs, Organizations and government agencies have come in front to kindle environmental awareness to hold on activities causing environmental degradation. But all these efforts, only skin deep and ostensible, cannot halt prevailing condition.

Mass media, electronic media and educational institutes can execute their prominent role by explicate positive environmental attitude and behaviour (Chan, 1996). Three disciplines "Environmental education", "Environmental law" and Environmental ethics are equally important in solving environmental problems. Actually the "Environmental ethics" is inter-connector of other two disciplines and compel them into action. According to deep greens approach, developing attitudinal change among public at grass root level can only solve environmental problems. Education is a potent weapon, panacea and critical driving force to eradicate evils and bring changes, specifically environmental education can fulfill that purpose, so countries and other regional organizations have adopted a range of strategies and programs in environmental education (Nachimuthu and Vijaykumari 1993; Fong, 1994).

1.1 Environmental Education

The concept of environmental education was first coined in United Nations Conference on Human Environment at Stockholm in 1972. Later on, need for Environmental Education was emphasized in Belgrade in 1979. The concept of Environmental education for sustainable development emerged in the first international United Nations Conference on Environment and Development (UNCED) or Earth Summit in 1992 held in Rio de Janeiro, Brazil.

Environmental education can be defined as a permanent process in which individuals gain awareness of their environment and acquire the knowledge, values, skills, experiences and also the determination which will enable them to act individually and collectively to solve present and future environmental problems as well as to meet their needs without compromising those of future generations (UNESCO/UNEP,1978).

So, Environmental Education (EE) is basic knowledge about environment in all age groups of people, their role and position regarding related environmental issues (Archie and McCrea, 1998). The main purpose of EE is the understanding of environment, its problems and solutions by taking brilliant decisions for environmental management.

Schools are basic organized units for environmental education. Children with plastic age can easily be embedded with environmental ethics. In school system, teachers are basic pillars and responsible for delivering of environmental knowledge, environmental problems and their possible solutions (Mosothwane, 1991). Environmental education incorporates environmental approach to education; it is more than merely a subject to study (Nagra, 2010).

1.2 Environmental Education in Pakistan

For curriculum reforms under Pakistan's National Education policy for year 2009 under curriculum reforms, environmental education shall be integrated as integral part of education. Ministry of education and ministry of Environment in collaboration implemented a coordinated environmental education project (CEEP from 1989-1992). CEEP started a number of pilot-activities including teacher training and development of environmental education training aids. In the mid of 1980s, environmental education had

gained the attention of textbook authors and in late 1990s environment content had been added in textbooks. At the same time environment was introduced as standalone subject at bachelor and masters degree level.

After the arrival of National Conservation Strategy of Pakistan (NCS) in 1992 Governmental and non-governmental organizations started many pilot-projects for the greening of existing curricula. EE has been integrated in all forms of education and initiative like greening the curricula and teaching courses at primary level and integrating courses at secondary level, initiation of diploma, degree and master level programs in environmental science are common practices but Environmental Education could not be implemented due to some other factors like poverty, discrimination, over population and environmental degradation. One of the problems in implementation is the lack of environmental attitude. There is environmental awareness among teachers but need is to be practical in conserving environment and managing the Environment.

The Ministry of Education in collaboration with the Ministry of Environment is implementing the "Environmental Education Promotion Project in Schools and Colleges" (EEP Project), launched in 2003. Following the situation analysis and evaluation of curricular concepts, EEP has completed the task of identifying the EE curriculum concept to be integrated into National curriculum of different subjects from primary to higher secondary levels. According to the Situational Analysis Study, Curriculum Wing of the Ministry of Education proposed the incorporation of "Environmental studies in class IX-X", as an elective subject for Humanities Group, in scheme of studies for 2006 (GOP, Ministry of Education, Islamabad).

1.3 Environment Based Education

Many developed countries are using environment as an integrated context (EIC) for learning to reduce underperformance and failure. This approach is named as "Environment Based Education". Many people have misconception about environment-based education (EBE). They take Environment-Based Education as "study of nature" a supplement to the educational system, which takes place outside of school hours and which relates only tangentially to the core curriculum. It is a common observation that small children ask questions like why the sky is blue or the wind blows? Yet we put these children into sterile, constricted environments and make them sit still and be quiet when their bodies and minds want to be engaged and active (NAAEE and NEETF, 2001). Students can show high performance and achievement when they are motivated, have their own choice for learning methods, teachers themselves are excited in teaching if they have free hand to design their own curricula, collaboration in work with other fellows, teachers and community and have systematic link across disciplines.

In 1983, a report "A Nation at Risk" was released in America. This report emphasized to regain its unquestioned distinction in commerce, industry and science. America's educational base was being deteriorated. The National Commission on Excellence in Education launched serious educational reforms movement to achieve the Goals 2000 set passed by Congress in 1994. But still in follow-up report" a Nation Still at Risk" stated that students academic performance remained unchanged.

"Integrated learning" is interdisciplinary, systematic and problem based approach, which significantly increases the academic performance of students. In 1998, the State

Education and Environment roundtable (SEER), released findings that environment is a useful integrated tool for high performance (NEETF, 2000).

1.4 Importance of Environment Based Education

Huge literature clears that educational efficacy can be supported by EBE in educational institutes, with high scores and quality performance in core subjects, systematic approach in critical thinking and reasoning power, motivation and engagement in studies, good management in class, leadership and character, competent interpretation of details, well-reasoned decision making, skill of communication, flexibility in work style and ethical behaviour and capability of self-direction. (Athman and Monroe 2004; Cheak *et al.* 2002; Ernst 2005; Ernst and Monroe 2004; Glenn 2000; Lieberman and Hoody 1998; National Environmental Education and Training Foundation (NEETF) 2002; Powers 2004; Wheeler and Thumlert 2007). Environment Based Education produces such citizens who know the relationship between economy and resources (NEETF, 2000) which is the need of today's world. This relationship will lead towards sustainable development as well as protection of environment.

EBE helps teachers to meet standards across multiple disciplines within a single curriculum. EBE lays emphasis on higher- order thinking to increase academic achievement in reading, math, science and social studies. Its focus on the immediate environment and the local community makes learning relevant, interesting, and compelling (NAAEE and NEETF, 2001). EBE harmonizes all core subjects horizontally as well as vertically.

1.5 Gender and Environment

Women are closely related with environment due to their differential social and biological responsibilities. This relationship between gender and environment is less obvious in West where more people are distant from natural resources like source of food, water and energy. Environmental degradation has more adverse differential impacts on females than male (Buckingham-Hatfield, 2000). Actually gender is not a biological but a social construction organized around biological sex. Children are born either male or female. It is the society, which defines what is meant by male and female (Gregson *et al.*, 1997). A society gives interpretation of gender in terms of awarding roles, behaviour and characteristic to males and females. The term eco-feminism was coined in 1974, called for an ecological evolution to be led by women to save the planet Earth. Eco-feminism can be divided into two areas: Cultural eco-feminism and social eco-feminism. Cultural eco-feminism reveals that women are better advocates of nature as compared to men because women have more powerful and strong link to nature, through female reproductive functions as childbirth and menstruation. Social eco-feminism conversely to cultural eco-feminism reveals that it is the social role ascribed to women, which identifies them more closely with nature. Because of their social role women are less able to be distant from nature. This entitles women to speak up for nature (Buckingham-Hatfield, 2000).

First time, at the First World Conference on Women in 1975, held in Mexico City, the relationship between women and environment was brought in front of public by Vandana Shiva, an Indian Physicist. Vandana Shiva pointed out a women's Chipko movement to protect trees of woodland in Himalaya region (Shiva, 1988). First recorded

event of Chipko was held in 1930 and the modern Chipko movement started in early 1970s. In 1980s this movement spread all over India and stimulated formulation of people sensitive forest policies and prevented trees felling openly (Schultz, 2001).

Women are more susceptible to environmental degradation in developing countries and they have taken up issue as the main political points (Braidotti, 1999). Third world women take themselves in alliance with environment known as "Alliance for the nature"(Dankelmann and Davidson 1989, Townsend, 1995). It was stated that usually men's work is self-oriented compared to women's work which is oriented towards other people (Waring, 1988, Merchant 1996, Mies and Shiva 1993, Nelson 1996). It was also specified that unpaid household work in most cases is actually done "for the environment" (Schultz, 2001). A study, with the help of three case studies, had shown the involvement of women against open dumping (Bru- Bistuer, 1996). Before Chernobyl accident in 1986, environmental issues were not the part of women movements in Europe. In Finland women organized a "birth strike" against nuclear technologies; in Germany Mothers were against Nuclear Technology (Schultz, 1987).

Gilligan, a psychologist, after studying few case studies about the behaviour of men and women in certain ethical conflicts revealed that women think "in another voice", she named this different thinking as "ethic of care" (Gilligan, 1982) few other researchers broaden her concept of " ethic of care" to natural environment (Plumwood, 1986). Women have hidden capabilities to protect and conserve environment due to their ethic of care. It was claimed in a research that women have "unseen potential" to manage environment as a result of inherited ethical nature (Schultz, 2001).

1.6 Gender Disparity

Gender discrimination is a common practice almost in all spheres of life all over the world. A significant body of literature revealed that gender disparity leads towards decrease in economic growth, development, and waste of talent and lowers the level and development of per capita GDP. It was found that countries in which Gender Parity Index (GPI) is 0.75 could expect Gross National Product (GNP), 25% lower than countries, which had less gender disparity. Many outcomes are related with high LFP of females; more investment on household i.e. nutrition, health, education of children (Elson, 1997).

It was pointed out that marginal return is higher in educating a girl rather than educating a boy (World Bank, 2001 and Knowles *et al.*2002). It was also stated that gender disparity in education wastes a pool of talent, drawn out talented women and accepts less talented men (Dollar and Gatti, 1999). It was revealed that gender discrimination in education and employment could decrease level and growth of per capita GDP. Gender discrimination in access to managerial positions not only declines average talent of managers but also lowers per capita GDP (Esteve- Volart, 2000).

It was stated that economic growth and development of a country depends upon its total human capital and labour force. In LFP rate for females, Pakistan is lagging behind among all regional countries, even Sri Lanka and India have improved significantly. Pakistan showed 20.8 % LFP of females in 2007 which was almost or more than half of the Sri Lanka and India. In Pakistan LFP was 51% in 2003-04 it increased up to 52-5% in 2007-08. In Pakistan, most of the female adults are either out of labour force or indulged in low-paid or unpaid employment. Countries with lower

Labour Force Participation (LFP) are actually wasting their human resource (SPDC, 2009).

All professions which are linked with high earning, male dominance has increased, for example in 1996-97, 76% were males and 24% were females which changed in 2007-08 by 90% males and 10% females. In a survey by UNDP (2007-08), it was revealed that mostly females are linked with agriculture and livestock farming. Each employment category is dominated by men, during 1996-97, 76% were females while this percentage changed up to 90% and 10% respectively. While feminization occurred in low paid jobs like, technicians, associate professionals and skilled agricultural and fishery workers.

LFP rate is high and further increasing in rural areas across all provinces in Pakistan. In Pakistan females are mostly indulged in agriculture, manufacturing, community, social and personal services rather than in wholesale retail trade, banking, insurance, transportation and communication. LFP rate is higher in Punjab among all provinces. The high rate is actually attributed to male dominant agricultural activities in Punjab. The proportion of females in agriculture increased from 48% in 1996-97 to 67% in 2007-08. Women are compelled to do domestic work along with part time work or full time work, especially in rural areas.

1.7 Educational System in Pakistan

Pakistan does not have free, compulsory and universal education although it is stated as constitutional right. The great majority of students attend Matriculation run by both the government and private sector. The education history indicates that no government has given the education sector the required attention and therefore the education

system of Pakistan suffers from a crisis of quantity, quality and relevance (National Education Policy,2009).

The need of uniformity in education system comes from the constitution of Pakistan but still education system is stratified into multiple layers. English medium, Urdu medium, public, private and madaris, the existence of these systems is creating economic and social disparities. Further division has emerged in this system in the form of English medium schools of public and private sector. Elite English medium private schools are specifically established for rich students to train them for further studies abroad. Many other issues related with education system are; teachers absenteeism, high drop out rate particularly at primary level, high repetition rates, low completion rates, inequalities by gender, location and social groups, low literacy rate and unsatisfactory performance of schools(National Education Policy,2009).

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In education related indices, Pakistan is lagging behind all countries of south Asian region. In Education development Index, Pakistan lies at bottom with Bangladesh even

below Sri Lanka (Human Development Report, 2007/2008). Pakistan's performance in regard of Global Competitiveness Index (GCI) is weaker when compared with competent i.e. India, Sri Lanka, Malaysia, China, and Bangladesh (The State of Pakistan's Competitiveness 2007, Competitive Support Fund, USAID, Ministry of Finance, Government of Pakistan, 2007). Only by spending 2.7 % of our GDP on education we cannot expect a vibrant knowledge economy (Pakistan in 21st Century: Vision 2030, Planning Commission, Government of Pakistan, 2007). Educational system deficiencies are outcome of the lack of commitment and implementation gap.

1.8 Literacy Rate and Status of Higher Education in Pakistan

According to the latest Pakistan Social and Living Standard Measurement (PLSM), Pakistan's literacy rate increased just by 1% from 56 % to 57% in 2009-2010. Literacy is remained same for males (69%) but increased for females from 44 to 45% during 2009 and 2010. Literacy rate is higher for urban (74%) than rural areas (48%). Education is still prevalent for men (69%) compared to women (45%). For every two males, there is one female in schools. Public expenditure in terms of Gross Domestic Product (GDP) on education has declined during last few years. Pakistan allocated 2.47% GDP in 2008-09 and 2.0% in 2009-10; this is lowest among other countries of South Asian Region.

In 2008-09, Net Enrolment Rate (NER) was 57% as compared to 55% in 2007-08. Gross Enrolment Rate (GER) also known as participation Rate remained same (91%) in 2007-08 and 2008-09. The Gender Parity Index (GPI), ration of female to male enrolment, was 0.65 in 2008-09 compared to 0.64 in 2007-08. Gender Parity Index (GPI) for primary education was 0.82 and 0.85 in 2007-08 for GER and NER, which had shown

a significant improvement from 2001-02 (MOE,2007). There is always a difference in enrolment rate in sexes in educational institutions.

Drop out is one of the serious problems, which Pakistan is facing. 31% drop out occurred at primary level; 16% after middle; 16% after secondary level and 16% after higher secondary during 2004-05(MOE, 2007). Repeat rates is a measuring scale for internal efficiency of education system. Overall repeat rates for grade 1 to 5 are between 2.1 to 2.6 and generally higher for young girls (MOE, 2006).

Human resource development plays a critical role in economic development; In this regard the Higher Education Commission (HEC) adopted objectives to enhance the institutional capacity and research activities. A scholarship program has been introduced for private and government worker as well as for students.

1.9 Role of Women in Decision Making

It is widely accepted that the full participation of all citizens, both men and women is the best way to build and sustain society that will reduce conflict and achieve human development (Damisa and Yohanna, 2007). A number of factors contribute to this disadvantaged position of women in developing world. They have low levels of skill, literacy and lack of organizational structures, through which resources could be mobilized for their own benefit. A gender segregated school system limits their access to formal education, as boys' schools are accorded priority (Penh, 2006).

Pakistan is a traditional patriarchal society and its social formation is based on the inequitable division of class, caste and sexual difference and it is male dominated society and all matters concerning outside the home, especially socio-economic, are dealt with by male members. In Pakistan females are responsible for household chores and domestic

work yet in rural area female are contributing in other than domestic work (Naqvi and Shehnaz, 2003; Nosheen, *et al.* 2009). The workingwomen in the rural areas of Pakistan are facing a number of challenges ranging from lack of access to education, resources and property rights (Safdar, 1996).

Besides gender discrimination in almost all spheres of life in Pakistan, females are the most victimized regarding educational opportunities and school drop out. A need of gender based study for the implementation of EBE was felt owing to the fact that women should acquire necessary environmental knowledge at early school stage, before possible drop out of a larger number of females.

1.10 Objectives of the Study

- To evaluate the status of environmental and environment based education in formal education system of the institutions of Rawalpindi and Islamabad.

- To evaluate the gender discrimination impact in education system on integration of environmental and environment based education in formal education system.

- To evaluate which gender can more effectively participate in implementing Environment based education.

1.11 Significance of Study

Environmental deterioration is increasing day by day. Our coming generations and we wholly depend on the environment for our existence and survival. Environmental degradation would lead to a threat to the survival of mankind on earth. It is of utmost need to aware the public of formidable consequences of environmental degradation, if reasonable measures would not be taken then this will result in the extinction of life.

Our safe and prosperous future lies on well-educated coming generations with practical knowledge of environmental management. EBE can help us to produce individuals, who have active participation in environmental protection as well as have characteristics to bring behavioral and attitudinal change and positive outcomes in education system.

The title of current research is "Gender based evaluation of human resource capacity for the integration of EBE in formal education system". Teachers are main human resource for the implementation of EBE at different educational institutions; by this research capacity and capability for the implementation of EBE comes in front, along with gender based evaluation of such capability. The results of this study will stimulate the policy makers to introduce the concept of EBE in our education policy like EE. Decision makers will be able to design new framework for the introduction of EBE concept by keeping in view the available human resource for this purpose. Results also reveal the effectiveness of women for the implementation of EBE so that governmental and non-governmental agencies will be able to empower women in this regard. Furthermore, Education department will also be able to get help in education research and will ripe the benefits of implementing EBE in educational institutes.

CHAPTER 2

LITERATURE REVIEW

A teacher spends less than fifty hours in a year on environmental subjects (NAAEE and ELC, 2001). By introducing EBE, the amount of time teachers spend on environment could be exponentially increased. More increasingly, students have extra interest for environmental subjects, which if nurtured, will lead toward environmental stewardship and high performance learning. In addition to stewardship EBE can bring revolutions in educational institutes and bless a lot of benefits to students, teachers and communities that continue even after school period (NAAEE and NEETF, 2001).

Environment Based Education being broad-based strategy for education system improved teaching and learning but it has not been accepted as such. But most teachers do not recognize all the educational improvement opportunities that environment-based educations routinely present (Kearney, 1999). It was reported that students who experience issue based Environmental Education get significant cognitive and skill gains, in addition to the measurable academic performance (Volk and McBeth, 1998; Klein, 1995).

Environment Based Education is more comprehensive and oriented to active learning problem-solving, decision making and understanding the complexities of interactions in the living and nonliving world (Stapp and Cox, 1974; UNESCO / UNEP, 1978; Hungerford, Peyton, and Wilke, 1980; Simmons, 1995; Stapp,Wals *et al.* Stankorb, 1996 ; Hungerford *et al.*, 1996). Environment-based education is a broad-based strategy for improving teaching and learning and it has large number of benefits to students

particularly their motivation about environmental educations (NAEE and NEETF, 2001; Krynock and Robb, 1999).

In "*Closing the Achievement Gap: Using the environment as an Integrating Context for Learning*", described about 40 schools where environment was integrated as a tool and achieve remarkable academic attitudinal and behavioural results in science, mathematics, social studies and language arts concepts (Lieberman and Hoody, 1998).

North American association for Environmental Education established its own standards *Excellence in Environmental Education—Guidelines for Learning (K-12).* NAAEE compared these standards with national standards for arts, sciences, civics and government, economics, language arts, geography, history, mathematics, science and social studies (NAAEE and NEETF, 2001).

In a report, *Environment based Education: Creating High Performance Schools and Studies* (NEETF, 2000) provided results of case studies with anecdotal evidence and performance test score for seven schools those have adopted EBE. Where its implementation caused to bring about positive outcomes in core subjects i-e language, mathematics, writing skills, English, Science and social studies regardless of socio economic factors. Study showed that outdoor instructions in EBE created memorable experience made learning unforgettable. It increased the interest, enthusiasm, deep learning, and stimulation to learn and provide opportunity for self-direction. Study in-real enhanced skills in communication, data analysis and interpretation reasoning power, thinking power and interaction with local communities, and foster the ability of students to get knowledge from one source and apply it to another (NEETF, 2000).

Most comprehensive work in EBE has been done by state Education and Environment Roundtable (SEER) as organization founded as cooperative effort of 16

state education departments to improve students academic achievements improve K-12 instructional practices and help schools achieve their improvement goals by implementing the EIC. SEER'S work helped us in recognizing the contribution of EBE in academic performance and educational reforms (NAAEE and NEETF, 2001).

EBE approach provides dynamic environment for learning and teaching; carries a lot of benefits and advantages. EBE have all qualities for producing lifelong and effective learners, who can combat the fast developing and complex issues in environment, commerce, and technology. In a book, *"The Learning Edge"* authors pointed out that learning and adapting are two key aspects for success and survival of a program (Wicke and Leon, 1993).

We should have a generation of effective learner who can combat the complex issues of 21st centaury. Many teachers, political leaders, administrators and business executives are agreed that passive educational setup is not producing skilled learners (NAAEE and NEETF, 2001). EBE could make teachers more innovative and act as a change agent to bring reforms in education. It could provide free hand to teachers for modifying their methods by making assessments to identifying the weak areas, then strengthened the weakness by providing ample practice (NEETF, 2000).

EBE approach gives opportunities to students to take their own paths of discovery, students use investigative approaches and student-centered learning. It was confirmed that teachers who offered open hand to students for learning gained positive attitudinal outcome (Rainer and Guyton, 1999).

Another ingredient for effective learning is different styles for different students. Some students are good reader, some are good listener and other can absorb only practical approach (NAAEE and NEETF, 2001) and EBE has ability to adapt diverse

learning styles. In an article, "Learning Style Program Boosts Achievement and Test Scores," pointed out that those teachers who adopted teaching style according to the need of students, concluded that students learnt more and also more actively (Klavas, 1994).

EBE is a proper system offers rigorous academic process to gain higher test scores and highest academic performance. In few case studies, at ISAAC Dickson Elementary school, North Carolina, teachers and administrators provided environmentally oriented projects, which caused to increase 31% points, just in a year for State achievement tests. At Milwaukee Public School, third grade students showed 100% result in Wisconsin Reading comprehension test in 1998. 89% students scored at or above the national average in fifth grade math scores on Iowa test of basic skills (NEETF, 2000).

It is stated that EBE, in which students not only get knowledge of science but also perform science (Kennedy, 1999). EBE made students able to identify surrounding problems, its solutions and implementation of those solutions independently or in group (NAAEE and NEETF, 2001). Traditional mode of learning i-e lecturing helps in covering the large content, while problem- based learning, the specificity of EBE, clears concepts, long live knowledge and self-directed learning (Leinhardt *et al.*, 1998;Dods, 1997; Gllagher, 1997; Goodwin and Adkins, 1997).

The production of highly skilled persons is need of today; fast developing technologies demand updated skilled workers. So, students should be equipped with professional's skills for workplace. NAAEE and NEETF mentioned in report that seventy-four (74%) percent respondent agreed that workplace skills should introduced before high school and eighty-seven (87%) percent said that high school should prepare every student before graduation (NAAEE and NEETF, 2001).

School - to - Work program has become very popular in past years. EBE being, project oriented and community oriented fulfilled the needs of School - to - Work and community services skills. It was stated that two aspects (project oriented and community oriented) of EBE make it useful and appropriate component of School-to-Work program (NAAEE and NETF, 2001).

Project-oriented study helps to improve the planning, implementation and management abilities of students. Community-oriented study builds capabilities for teamwork, which is usually the foundation of community service skills. In an article, "Constructing Maps Collaboratively," pointed out that teamwork on map construction gave better understanding and competence than alone work (Leinhardt *et al.*, 1998).

Today's demand is, worker should have integrated and interdisciplinary knowledge in environment, commerce, communication and technology because it is a need of time to make development more sustainable. Environment, economy and technology are interdependence fields; government agencies and other responsible authorities must have cutting-edge knowledge, sharing information and expertise to manage natural resources (NAAEE and NEETF, 2001).

Society and business demand for workers, who are leaders, visionaries, critical thinkers and skilled communicators, collaborators, self disciplined, flexible and have ethical behaviour and workers must have understanding of economic concepts and decision making skills; they are capable of doing work independently as well as in team and efficiently analyze, interpret data and make decision (Gorman, 1999; VanFossen, 1999 and Murphy, 1999).

EBE is interdisciplinary approach and provide critical thinking skills and based on solution of real-world problems so it can produce a generation of Renaissance Workers,

which is need of tomorrow's economy (NAAEE and NEETF, 2001). EBE also gives opportunities to students to "try on" careers as they study real world issues and come cross the experts from diverse fields. These activities give an overlook of different fields, trainings and personal skills for each (Bunderson and Cooper, 1997). This training and personal skills learning connects to workplace and also create sense of self-efficacy for work, a key factor for successful career development (Brown, 1999).

It is an expectation from education system to develop leaders for the 21st century. According to Hungerford and Volk, for a leader three characteristics must be part of personality, sensitive to issue, a sense of ownership and sense of empowerment (Hungerford and Volk, 1990). One of key component of EBE is issue – oriented learning, foster all skills which are the characteristics of leadership; cooperation and work appropriately, work efficiently and effectively as an individual as well as in group, showing concern of others, demonstrating active leadership, participation in democratic process and connecting to community. EBE, also an inquiry-oriented approach, is an excellent way to develop as well as practice the critical thinking and decision making skills needed for democratic process (NAAEE and NEETF, 2001).

One important context of EBE is character building among students. Good schools offer caring communities to students (Berman, 1996) and In "*Character Education in America's School*" call upon schools to arrange character education that focus on cooperation and respect (Akins et al., 1999). EBE can help teachers to become character builders without being over "preachy" as message of environmental conservation is about don't waste, take care and restore of natural resources and respect the rights pf others which are the basic component of character education (NAAEE and NEETF, 2001).

Students who learn by issue-based and problem-based techniques assume their personal responsibility and feel their value, which in turn gifted them self-confidence and self esteem (Iozzi, et al,. 1990; Liberman and Hoody, 1998). Students become more confident about their problem solving abilities (Hoody, 1995; Charmeau, 1997). Students, who have more environmental knowledge, have more ability to solve the prevailing problems and prevent the expecting problems (NAAEE and NEETF, 2001). In another report, " Efficacy beliefs and Career Development," a correlation between self-confidence, self esteem and career development had shown (Brown, 1999).

EBE helped students to become lifelong learner and leaders, by developing motivation for life long learning, career preparation, behaviour of respect and responsibility (NAAEE and NEETF, 2001). EBE gives knowledge about animals, investigation methods and nature interactions. Measurement of teaching process is as important as measurement of achievement; teaching process for transfer came across students to a combination of knowledge, process, and hand on experience which helped them to make connections among different subjects and deepens their understanding. Trained teachers of Environmental Education, can ask critical questions and cueing students to search links, can help students to make connections and deepens their knowledge across all subjects. Study in nature is safe learning for students who tend to fail in traditional classroom environment.Environmental Education provides opportunities for success (Basile, 2000).

In closing the Achievement gap: Using the Environment as Integrating Context for Learning, was suggested that teachers by using Environment integrated context approach, could generate better progress in academic performance. Qualitative study of 40 schools provided how, why and to what extent EBE could support learning. Study

showed by using Environment as integrating context for learning students improved their grades, develop power of critical thinking, problem solving skills, understanding the world closely, be aware of and appreciate the diverse viewpoints as active member of democratic society (Lieberman and Hoody, 1998).

CHAPTER 3

MATERIALS AND METHODS

Major purpose of the current research was to evaluate human resource capacity for the integration of EBE in formal education system on Gender basis. Islamabad (the capital of Pakistan) and Rawalpindi district were selected as study area for the offering research. Data collection was completed by covering all levels of educational institutions offering primary to higher education and questionnaires were got filled from both male and female teachers in the selected area.

Initial information was gathered through review of literature, project reports, and articles. A questionnaire was developed including sixty (60) close ended questions. The questionnaire comprised of three sections:

- **General awareness**

This section covered the following aspects:

  - Drinking water
  - Waste collection, health impacts of waste, careful disposal, disposal techniques used at household and community level.
  - Personal hygiene
  - General environmental issues

- **Environment based education**

This section covered the following aspects:

  - Awareness about environmental issues and concepts in students
  - Teacher's understanding about EBE
  - Positive environmental attitudes

- Environmental content in curriculum
- Positive outcomes of EBE
- Advantages of implementing EBE
- Enhancement of perception level using EBE

- **Gender based questions**

This section covered the following aspects:

- Implementing EBE on the basis of gender approach
- Gender discrimination

Questionnaire was developed for teachers of different educational institutes to workout the status of human resource for the incorporation of environmental education and environment based education in education policy and subsequently in educational curricula. Questionnaire was prepared in both English and Urdu languages the questionnaire in Urdu was easy to fill for primary teachers of the selected area.

3.1 Population and Study Area

All Educational Institutes (offering primary to higher Education) of Islamabad and Rawalpindi district constituted the population of study area.

3.2 Data Collection

Different educational institutes were selected to collect data from male and female teachers. Hundred (100) questionnaires were distributed to male and female teachers each, out of which 75 from females and 65 from male teachers were received back, out of which 60 completely filled questionnaires from females and males each were selected for data analysis.

3.3 Analysis and Interpretation

The response options in the questionnaire including i.e. Yes/ No, Yes/ No/ to some extent, Male/ Females/ Both Male/ Female/ None were coded for statistical analysis. SPSS statistical package was used for data analysis. Chi-square test was applied to work out the association among different variables. Consequently, overall human resource capacity was analyzed on gender basis for the implementation of EBE and environmental education.

3.4 Study Assumptions

Conclusions were drawn by keeping in view the following assumptions;

1. Both genders have equal environmental awareness.
2. Teachers are not aware enough of the concept of EBE.
3. Females serve as more effective human resource segment for implementation of EBE because of their social and biological characteristics and close relationship with nature.

CHAPTER 4

RESULTS AND DISCUSSION

The title of the current research is "Gender based evaluation of human resource capacity for the integration of Environment Based Education in formal education system". The basic purpose of the research was to assess the degree of knowledge about environmental issues and EBE among teachers. The research was carried out on the basis of gender approach for effective implementation of EBE and the gender discrimination impact in integration of EBE in formal education system was also covered in the research.

To analyze the data, inductive analysis approach was used and data was interpreted on the basis of the percentage of frequencies.

In next step of analysis chi-square test for independence was applied to determine the association among gender, teaching experience, level of teaching and academic qualification and integration of EBE in formal education system. Chi-square test was applied to each question individually for better evaluation.

Data was analyzed in reference to gender, subject category, teaching experience and teaching level and academic qualification. The findings of the tests applied are given below.

4.1 Gender Association

4.1.1 Association between Gender and Environmental Awareness

Table 4.1 shows the association between gender and environmental awareness Out of 21 questions in first section, eight questions were found highly associated with gender at two levels of significance i-e 0.05 and 0.01, one was associated only at one level (0.05) and rest of twelve questions were not associated with gender.

Table 4.1: Association between Gender and Environmental Awareness

	Items	P-value	Level of significance		Items	P-value	Level of significance
1	Treatment of drinking water	0.151	Non Significant	12	Dustbins in institutes	0.039	Significant
2	Last time water treatment	0.082	Non Significant	13	Dustbins in house	0.000	Highly Significant
3	Waste collection method	0.427	Non Significant	14	Segregation of solid waste	0.092	Non Significant
4	Link of diseases with house hold garbage	0.177	Non Significant	15	Careful disposal of waste	0.001	Highly significant
5	Which disease?	0.750	Non Significant	16	Use of energy savour	0.406	Non Significant
6	Get rid of house hold waste	0.000	Highly Significant	17	Mouth cleansing	0.247	Non Significant
7	Get rid of community garbage	0.521	Non significant	18	Hand wash after defecation	0.175	Non Significant
8	Method adopted by community	0.082	Non Significant	19	Hand wash before meal	0.002	Highly Significant
9	Bath routine	0.000	Highly Significant	20	Service of vehicle	0.001	Highly significant
10	Indoor plants in office	0.001	Highly significant	21	Switch off at red signals	0.002	Highly significant
11	Indoor plants in house	0.227	Non Significant				

p-value = probability value, p-value is 0.05 or less than0 .05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.1.2 Association between Gender and Environment Based Education

In the second section, two questions out of 19 were highly associated with gender at 0.05 and 0.01 level of significance and three question were significantly associated with gender and rest of them were not associated with gender.

Table 4.2: Association of Gender and EBE

	Items	P-value	Level of significance		Items	P-value	Level of significance
22	EBE understanding among students	0.449	Non Significant	34	Management in class room	0.918	Non Significant
23	EBE understanding among teachers	0.118	Non Significant	35	Known to unknown	0.217	Non Significant
24	Environmental content in curriculum	0.000	Highly significant	36	Equal communication with individuals and groups	0.229	Non Significant
25	Environment based curriculum	0.179	Non Significant	37	Background effectiveness in EBE implementation	0.708	Non Significant
26	EBE, effective approach for teaching	0.023	Significant	38	Better environment for teaching and learning	0.006	Highly Significant
27	EBE training for implementation	0.066	Non Significant	39	Institute intention for EBE implementation	0.061	Non Significant
28	Change in values and attitudes towards nature	0.025	Significant	40	Activities organized	0.064	Non Significant
29	Impact on students thinking and reasoning	0.782	Non Significant	41	Quality of education and EBE	0.052	Non Significant
30	Environmental care in up coming generations	0.017	Non significant	42	Participation in environment related activities	0.052	Non Significant
31	Practical protection of environment	0.134	Non Significant	43	Response to learner needs	0.108	Non Significant
32	Impact on academic performance	0.723	Non Significant	44	Better environmental leadership	0.081	Non Significant
33	Interest, motivation among students	0.783	Non Significant				

p-value = probability value, p-value is 0.05 or less than0 .05 = significant,0 .01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.1.3 Gender Based Association

The third (gender based) section sixteen questions out of which five questions were highly associated with gender at both 0.05 and 0.01 level and only one question was significantly associated with gender at 0.05 level of significance and rest of questions were not associated with gender.

Table 4.3: Gender Based Association

	Items	P-value	Level of significance		Items	P-value	Level of significance
45	Arrangement of drinking water	0.411	Non Significant	53	Consciousness for hygiene and health	0.000	Highly Significant
46	Treatment of drinking water	0.036	Significant	54	Preference of packed food	0.001	Highly significant
47	Gender based disease prevalence	0.607	Non Significant	55	Arrangement of fuel	0.000	Highly significant
48	Management of household waste	0.089	Non significant	56	Participation in farming	0.252	Non Significant
49	Gender based consciousness for waste	0.000	Highly Significant	57	Contribution in economy	0.000	Highly significant
50	Preference for use of cloth bags	0.056	Non Significant	58	Purchase of personal items	0.251	Non Significant
51	Proportion of food enjoyment	0.904	Non Significant	59	Purchases of general items	0.105	Non Significant
52	Selection of food items	0.132	Non Significant	60	Educational opportunity	0.311	Non Significant

p-value = probability value, p-value is 0.05 or less than 0.05 = significant,0 .01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.2 Subject Category Association

4.2.1 Association between Subject Category and Environmental Awareness

Table 4.4 shows the association between subject category and Environmental awareness, out of 21 questions in first section, four questions were highly associated at two levels (0.05 & 0.01) of significance, four questions were associated at one level (0.05) of significance and rest of the questions were not associated with subject category.

Table 4.4: Association of subject category and Environmental awareness

	Items	P-value	Level of significance		Items	P-value	Level of significance
1	Treatment of drinking water	0.252	Non Significant	12	Dustbins in institutes	0.044	Significant
2	Last time water treatment	0.002	Highly Significant	13	Dustbins in house	0.662	Non Significant
3	Waste collection method	0.389	Non Significant	14	Segregation of solid waste	0.953	Non Significant
4	Link of diseases with house hold garbage	0.371	Non Significant	15	Careful disposal of waste	0.922	Non significant
5	Which disease?	0.802	Non Significant	16	Use of energy savour	0.010	Highly Significant
6	Disposal of household waste.	0.032	Significant	17	Mouth cleansing	0.253	Non Significant
7	Disposal of community garbage.	0.888	Non significant	18	Hand wash after defecation	0.064	Non Significant
8	Waste disposal method adopted by the community	0.003	Highly Significant	19	Hand wash before meal	0.675	Non Significant
9	Bath routine	0.189	Non Significant	20	Service of vehicle	0.040	Significant
10	Indoor plants in office	0.343	Non Significant	21	Switch off at red signals	0.022	Significant
11	Indoor plants in house	0.010	Highly Significant				

p-value = probability value, p-value is 0.05 or less than0 .05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.2.3 Association between Subject Category and Gender

In the third section out of sixteen questions five questions were significantly associated with subject category at 0.05 level of significance and rests of them were not associated.

Table 4.6: Subject Category and Gender Based Association

	Items	P-value	Level of significance		Items	P-value	Level of significance
45	Arrangement of drinking water	0.079	Non Significant	53	Consciousness for hygiene and health	0.313	Non Significant
46	Treatment of drinking water	0.197	Non Significant	54	Preference of packed food	0.372	Non significant
47	Gender based disease prevalence	0.542	Non Significant	55	Arrangement of fuel	0.639	Non significant
48	Management of household waste	0.787	Non significant	56	Participation in farming	0.025	Significant
49	Gender consciousness for waste	0.040	Significant	57	Contribution in economy	0.105	Non significant
50	Preference for the use of cloth bags	0.041	Significant	58	Purchases of personal items	0.691	Non Significant
51	Proportion of food enjoyment	0.039	Significant	59	Purchases of general items	0.734	Non Significant
52	Selection of food items	0.271	Non Significant	60	Educational opportunity	0.033	Significant

p-value = probability value, p-value is 0.05 or less than 0.05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.3 Teaching Experience Association

4.3.1 Association between Teaching Experience and Environmental Awareness

The section 1 of the questionnaire dealt with the association between teaching experience and Environmental awareness. Out of 21 questions in this section, only three were associated at one level (0.05) of significance and rest of the questions were not associated.

Table 4.7: Association between Teaching Experience and Environmental Awareness

	Items	P-value	Level of significance		Items	P-value	Level of significance
1	Treatment of drinking water	0.871	Non Significant	12	Dustbins in institutes	0.511	Non Significant
2	Last time water treatment	0.013	Significant	13	Dustbins in house	0.196	Non Significant
3	Waste collection method	0.014	Significant	14	Segregation of solid waste	0.093	Non Significant
4	Link of diseases with house hold garbage	0.248	Non Significant	15	Careful disposal of waste	0.625	Non Significant
5	Which disease?	0.533	Non Significant	16	Use of energy savour	0.164	Non Significant
6	Disposal of household waste	0.413	Non Significant	17	Mouth cleansing	0.023	Significant
7	Disposal of community garbage	0.281	Non significant	18	Hand wash after defecation	0.137	Non Significant
8	Waste disposal methods adopted by the community	0.231	Non Significant	19	Hand wash before meal	0.138	Non Significant
9	Bath routine	0.859	Non Significant	20	Service of vehicle	0.289	Non Significant
10	Indoor plants in office	0.208	Non significant	21	Switch off at red signals	0.181	Non Significant
11	Indoor plants in house	0.539	Non Significant				

p-value = probability value, p-value is 0.05 or less than 0.05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.3.2 Association between Teaching Experience and EBE

In the second section (out of 23 questions) there were three questions were highly associated with level of teaching at 0.05 and 0.01 level of significance and six questions were significantly associated with teaching experience and rest of them were not associated.

Table 4.8: Association of Teaching Experience and EBE

	Items	P-value	Level of significance		Items	P-value	Level of significance
22	EBE understanding among students	0.899	Non Significant	34	Management in class room	0.039	Significant
23	EBE understanding among teachers	0.306	Non Significant	35	To workout the known from unknown	0.265	Non Significant
24	Environmental content in curriculum	0.002	Highly Significant	36	Equal communication with individuals and groups	0.020	Significant
25	Environment based curriculum	0.074	Non Significant	37	Background effectiveness in EBE implementation	0.149	Non Significant
26	EBE, effective approach for teaching	0.526	Non Significant	38	Better environment for teaching and learning	0.027	Significant
27	EBE training for implementation	0.988	Non Significant	39	Intention of institute	0.031	Significant
28	Change in values and attitudes towards nature	0.034	Significant	40	Activities organized	0.296	Non Significant
29	Impact on student thinking and reasoning	0.127	Non Significant	41	Quality of education and EBE	0.004	Highly Significant
30	Environmental care in up coming generations	0.648	Non significant	42	Participation in environment related activities	0.275	Non Significant
31	Practical protection of environment	0.455	Non Significant	43	Response to learner needs	0.021	Significant
32	Impact on academic performance	0.064	Non Significant	44	Better environmental leadership	0.010	Highly Significant
33	Interest motivation among students	0.284	Non Significant				

p-value = probability value, p-value is 0 .05 or less than 0.05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.3.3 Association between Teaching Experience and Gender

In the section (out of sixteen questions) two questions were highly associated with teaching experience at two levels of significance while two questions were significantly associated with teaching experience at 0.05 level of significance and two question were and rest were not associated with teaching experience.

Table 4.9: Teaching Experience and Gender Based Association

	Items	P-value	Level of significance		Items	P-value	Level of significance
45	Arrangement of drinking water	0.253	Non Significant	53	Consciousness for hygiene and health	0.001	Highly Significant
46	Treatment of drinking water	0.018	Significant	54	Preference of packed food	0.276	Non significant
47	Gender based disease prevalence	0.752	Non Significant	55	Arrangement of fuel	0.336	Non significant
48	Management of household waste	0.021	Significant	56	Participation in farming	0.395	Non Significant
49	Gender consciousness for waste	0.000	Highly Significant	57	Contribution in economy	0.297	Non significant
50	Preference for use of cloth bags	0.090	Non Significant	58	Purchases of personal items	0.978	Non Significant
51	Proportion of food enjoyment	0.518	Non Significant	59	Purchases of general items	0.183	Non Significant
52	Selection of food items	0.093	Non Significant	60	Educational opportunity	0.457	Non Significant

p-value = probability value, p-value is 0.05 or less than0 .05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.4 Teaching Level Association

4.4.1 Association between Teaching Level and Environmental Awareness

The first section of the questionnaire dealt with the see association between academic qualification and implementation of EBE. Out of 21 questions in this section, seven were highly associated at both levels 0.05 and 0.01 and three questions were associated at 0.05 level and rest of them were not associated.

Table 4.10: Association of Teaching Level and Environmental Awareness

	Items	P-value	Level of significance		Items	P-value	Level of significance
1	Treatment of drinking water	0.028	Significant	12	Dustbins in institutes	0.341	Non Significant
2	Last time water treatment	0.132	Non Significant	13	Dustbins in house	0.000	Highly Significant
3	Waste collection method	0.617	Non Significant	14	Segregation of solid waste	0.241	Non Significant
4	Link of diseases with house hold garbage	0.000	Highly Significant	15	Careful disposal of waste	0.038	Significant
5	Which disease?	0.011	Significant	16	Use of energy savour	0.468	Non Significant
6	Disposal of household waste	0.140	Non Significant	17	Mouth cleansing	0.342	Non Significant
7	Disposal of community garbage	0.258	Non significant	18	Hand wash after defecation	0.857	Non Significant
8	Waste disposal method adopted by the community	0.000	Highly Significant	19	Hand wash before meal	0.001	Highly Significant
9	Bath routine	0.135	Non Significant	20	Service of vehicle	0.000	Highly significant
10	Indoor plants in office	0.018	Non significant	21	Switch off at red signals	0.001	Highly significant
11	Indoor plants in house	0.948	Non Significant				

p-value = probability value, p-value is 0.05 or less than0 .05 = significant,0 .01 or less than0 .01 = highly significant, greater than 0.05 = non significant.

4.4.2 Association between Teaching Level and EBE

In the second section five questions out of 23 were highly associated with level of teaching at 0.05 and 0.01 level of significance while three were significantly associated and rest of them were not associated.

Table 4.11: Association of Teaching Level and EBE

	Items	P-value	Level of significance		Items	P-value	Level of significance
22	EBE understanding among students	0.445	Non Significant	34	Management in class room	0.669	Non Significant
23	EBE understanding among teachers	0.721	Non Significant	35	To workout the known from unknown	0.006	Highly Significant
24	Environmental content in curriculum	0.003	Highly Significant	36	Equal communication with individuals and groups	0.010	Highly Significant
25	Environment based curriculum	0.197	Non Significant	37	Background effectiveness in EBE implementation	0.790	Non Significant
26	EBE, effective approach for teaching	0.124	Non Significant	38	Better environment for teaching and learning	0.009	Highly Significant
27	EBE training for implementation	0.680	Non Significant	39	Intention of institute	0.188	Non Significant
28	Change in values and attitudes towards nature	0.310	Non Significant	40	Activities organized	0.028	Significant
29	Impact on students thinking and reasoning	0.592	Non Significant	41	Quality of education and EBE	0.035	Significant
30	Environmental care in up coming generations	0.343	Non significant	42	Participation in environment related activities	0.080	Non Significant
31	Practical protection of environment	0.414	Non Significant	43	Response to learner needs	0.461	Non Significant
32	Impact on academic performance	0.135	Non Significant	44	Better environmental leadership	0.035	Significant
33	Interest motivation among students	0.008	Highly Significant				

p-value = probability value, p-value is 0.05 or less than 0.05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.4.3 Association between Teaching Level and Gender

In the third section four questions were highly associated with teaching level at both 0.05 and 0.01 level and two questions were significantly associated with teaching level at 0.05 level of significance and rest of them were not associated.

Table 4.12: Teaching Level and Gender Based Association

	Items	P-value	Level of significance		Items	P-value	Level of significance
45	Arrangement of drinking water	0.366	Non Significant	53	Consciousness for hygiene and health	0.077	Non Significant
46	Treatment of drinking water	0.271	Significant	54	Preference of packed food	0.052	Non significant
47	Gender based discase prevalence	0.008	Highly Significant	55	Arrangement of fuel	0.022	Significant
48	Management of household waste	0.008	Highly Significant	56	Participation in farming	0.033	Significant
49	Gender consciousness for waste	0.000	Highly Significant	57	Contribution in economy	0.199	Non significant
50	Preference for the use of cloth bags	0.000	Highly Significant	58	Purchases of personal items	0.144	Non Significant
51	Proportion of food enjoyment	0.085	Non Significant	59	Purchases of general items	0.979	Non Significant
52	Selection of food items	0.164	Non Significant	60	Educational opportunity	0.250	Non Significant

p-value = probability value, p-value is 0 .05 or less than 0.05 = significant,0 .01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.5 Academic Qualification Association

4.5.1 Association between Academic Qualification and Environmental Awareness

The first section dealt with the association between academic qualification and general awareness, three questions out of 21 were highly associated at both levels 0.05 and 0.01, one question was associated at 0.05 and rest of the questions were not associated.

Table 4.13: Association of Academic Qualification and Environmental Awareness

	Items	P-value	Level of significance		Items	P-value	Level of significance
1	Treatment of drinking water	0.592	Non Significant	12	Dustbins in institutes	0.168	Non Significant
2	Last time water treatment	0.263	Non Significant	13	Dustbins in house	0.144	Non Significant
3	Waste collection method	0.535	Non Significant	14	Segregation of solid waste	0.018	Significant
4	Link of diseases with house hold garbage	0.401	Non Significant	15	Careful disposal of waste	0.094	Non Significant
5	Which disease?	0.449	Non Significant	16	Use of energy savour	0.725	Non Significant
6	Disposal of household waste	0.056	Non Significant	17	Mouth cleansing	0.929	Non Significant
7	Disposal of community garbage	0.440	Non significant	18	Hand wash after defecation	0.814	Non Significant
8	Waste disposal method adopted by the community	0.641	Highly Significant	19	Hand wash before meal	0.635	Non Significant
9	Bath routine	0.000	Highly Significant	20	Service of vehicle	0.344	Non Significant
10	Indoor plants in office	0.009	Highly Significant	21	Switch off at red signals	0.000	Highly significant
11	Indoor plants in house	0.234	Non Significant				

p-value = probability value, p-value is 0.05 or less than0 .05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.5.2 Association between Academic Qualification and EBE

In the second section one question (out of 23 questions) highly associated with level of teaching at 0.05 and 0.01 level of significance and rest of them were not associated with academic qualification.

Table 4.14: Association of Academic Qualification and EBE

	Items	P-value	Level of significance		Items	P-value	Level of significance
22	EBE understanding among students	0.577	Non Significant	34	Management in class room	0.964	Non Significant
23	EBE understanding among teachers	0.007	Highly Significant	35	Known to unknown	0.124	Non Significant
24	Environmental content in curriculum	0.151	Non Significant	36	Equal communication with individuals and groups	0.394	Highly Significant
25	Environment based curriculum	0.125	Non Significant	37	Background effectiveness in EBE implementation	0.633	Non Significant
26	EBE, effective approach for teaching	0.447	Non Significant	38	Better environment for teaching and learning	0.430	Non Significant
27	EBE training for implementation	0.290	Non Significant	39	Institute intention for EBE implementation	0.264	Non Significant
28	Change in values and attitudes towards nature	0.163	Non Significant	40	Activities organized	0.343	Non Significant
29	Impact on students thinking and reasoning	0.932	Non Significant	41	Quality of education and EBE0	0.671	Significant
30	Environment care in up coming generations	0.288	Non significant	42	Participation in environment related activities	0.728	Non Significant
31	Practical protection of environment	0.685	Non Significant	43	Response to learner needs	0.721	Non Significant
32	Impact on academic performance	0.620	Non Significant	44	Better environmental leadership	0.798	Non Significant
33	Interest motivation among students	0.102	Highly Significant				

p-value = probability value, p-value is 0.05 or less than0 .05 = significant,0 .01 or less than0 .01 = highly significant, greater than 0.05 = non significant.

4.5.3 Association between Academic Qualification and Gender

In the third section only one question out of sixteen was highly associated with academic qualification at both 0.05 and 0.01 level and three questions were significantly associated with level of teaching at 0.05 level of significance and rest of them were not associated.

Table 4.15: Academic Qualification and Gender Based Association

	Items	P-value	Level of significance		Items	P-value	Level of significance
45	Arrangement of drinking water	0.213	Non Significant	53	Consciousness for hygiene and health	0.014	Significant
46	Treatment of drinking water	0.694	Non Significant	54	Preference of packed food	0.009	Highly Significant
47	Gender suffer with diseases	0.375	Non Significant	55	Arrangement of fuel	0.066	Non Significant
48	Management of household waste	0.938	Non Significant	56	Participation in farming	0.518	Non Significant
49	Gender consciousness for waste	0.027	Significant	57	Contribution in economy	0.495	Non significant
50	Preference for use of cloth bags	0.694	Non Significant	58	Purchases of personal items	0.382	Non Significant
51	Proportion of food enjoyment	0.987	Non Significant	59	Purchases of general items	0.147	Non Significant
52	Selection of food items	0.029	Significant	60	Educational opportunity	0.631	Non Significant

p-value = probability value, p-value is 0.05 or less than 0.05 = significant, 0.01 or less than 0.01 = highly significant, greater than 0.05 = non significant.

4.6 Discussion

As this research is concerned with the gender-based evaluation of human resource capacity for the integration of EBE approach in formal education system. In this section, only general and gender based results are discussed in detail, though other parameters, like teaching experience, subject category, level of teaching (primary, middle, high, etc.) and academic qualification were also covered in this research.

4.6.1.1 Environmental Awareness

As this research was carried out to work out the gender based human resource capacity for integration of EBE. Teachers are the key stake holders and resources for the integration and implementation of EBE. So, main aim of the current research was to evaluate the capacity of this human resource for said purpose based on the degree of environmental knowledge possessed.

For general awareness regarding environment a total twenty one (21) questions were asked from teachers in the form of questionnaire. First question was about attitude toward treatment of drinking water seventy four (74%) responses were in "yes". The next question in the continuity of the first one i-e. "When was the last time you treated water?. Thirty two percent (32%) respondents treated drinking water on daily basis and thirty percent (30%) replied as "don't know". From above two questions, first question showed that teachers were well aware of the benefit of treating drinking water but response to second question, showed the apathetic attitude of respondents towards such an important issue. Next three questions were about collection and disposal of garbage and its impact on health. Sixty four percent (64%) respondents used buckets inside houses, thirty two percent (32%) used plastic bags while remaining four percent (4%) collected their

garbage in yards. Some respondents were collecting garbage but were not aware of the environmental impacts of plastic bags. It was found that both environmental awareness and attitude were important for bringing change in human actions the same had been pointed out by Ramsay and Rickson (Ramsay and Rickson, 1976). For questions about garbage impact on health, seventy five (75%) respondents believed that it caused diseases. In next question, 43% were aware of the fact that household garbage caused "diarrhea" while 19% were unaware of relevant diseases, 15%, 8%, 15%, respondents answered for "respiratory diseases", "typhoid" and "skin diseases," respectively.

Regarding questions for the routine of getting rid of waste, seventy three percent 73% respondents had a daily routine while 20% discarded it after every two days. In another question that whether their community got rid of waste and if "yes" then what method they used, sixty eight (68%) respondents replied positively, sixty four percent (64%) used open dumping, 23% burnt garbage to discard it. Still a large number of respondents were practicing open dumping to get rid of waste, which is a major cause of land as well as water pollution. This issue is certainly due to lack of environment friendly attitude of respondents. It was noticed that there was contradiction between people's attitudes and their degree of attitude. So it is suggested that teachers, being a role model, should not only have positive environmental attitude but should actually practice it, the same fact was also endorsed by Nagra (Nagra, 2010).

Next three questions were about personal hygiene; 48%, 28% and 24% respondents were taking bath daily, twice a week and thrice a week, respectively. Eighty eight percent (88%) respondent washed their hands before meals, seventy two percent (72%) rinsed their mouth after every meal and ninety eight (98%) respondents washed their hands after defecation. Hence overall response to questions about personal hygiene

showed that respondents were very well conscious about their personal hygiene. The same was reported by Shahnawaj that teachers possessed positive environmental attitude (Shahnawaj, 1990).

In questions about nature loving attitude, 59% and 69% respondents had indoor plants in offices and houses, respectively. Regarding questions about environment friendly attitude, 82% and 58% respondents had dustbins available in all rooms of institutes and houses, respectively. Forty four percent (44%) respondents did not segregate solid waste before disposing it off and twenty nine percent (29%) segregated it to some extent, eighty six percent (86%) respondents knotted waste bags carefully before disposing them off, eighty nine percent (89%) respondents got their vehicles serviced regularly, fifty six percent (56 %) respondents did not switch off engine while vehicle was at red signal, eighty nine percent (89%) respondents used energy savours in their houses.

From above results it can be evaluated that teachers had sufficient knowledge about clean drinking water, personal hygienic conditions, health issues and proper handling of household and community garbage, but their attitudes towards solid waste segregation and pollution prevention was neither satisfactory nor they had nature friendly attitude.

4.6.1.2 Environment Based Education

Second section of the questionnaire contained questions about concept of EBE among teachers and students, advantages of implementing EBE, and role of EBE in enhancing perception level among students.

Response to initial questions was very positive. Respondents had opinion that 45% and 35% students had or "to some extent" had understanding of environmental issues, concepts and conditions, respectively. In the same way 75% and 22 % teachers had and had idea "to some extent" about EBE respectively. It was also reported by Shahnawaj that awareness level regarding environment was higher in teachers as compared to students (Shahnawaj, 1990). Fifty six percent (56%) and 26% teachers responded as "yes" or "to some extent" for their subjects having environmental materials, respectively. Thirty six percent (36%) and 34% teachers answered "yes" or "to some extent" respectively that curricula at their institutes was based on EBE. Questions above were interlinked and almost had the same theme. Response was positive but still unsatisfactory because 35% and 20% students had "to some extent" or "had not understanding about EBE". On one hand, 82% subjects had environmental material but on the other hand only 70% teacher's institute had EBE based curricula. Half of the respondents replied as "to some extent" which showed poor and unsatisfactory integration of EBE in curricula. Above two questions showed that teachers had no differentiation between EE and EBE because they were intermingling these two concepts. It was pointed out in another study that many people have misconception about EBE. They take EBE as "nature studies" a supplement to educational system (NAAEE, 2001).

Some questions were related to positive outcomes of EBE among students, 76% and 20% respondents replied as "yes" and "to some extent" respectively for EBE as an effective approach for effective teaching and learning. It was pointed out in another study that EBE is more comprehensive and active learning approach (Stapp and Cox, 1974; UNSCO / UNEP, 1978; Hungerford *et al.*, 1980; Simmons, 1995; Stapp, Wals, and Stankorb, 1996; Hungerford et al., 1996). In a similar way it was given that EBE is a

broad based strategy for improving teaching and learning (NAEE and NEETF, 2001; Krynock and Robb). Seventy six percent (76%) and 22% teachers replied as "yes" and "to some extent" respectively that EBE could improve the thinking and reasoning power of students, while only 3% teachers thought that it can not do so. Same results were concluded in another study that EBE is more comprehensive and oriented to problem solving, decision making and understanding the complexities of interactions in the living and non living world (Stapp and Cox, 1974; UNSCO / UNEP, 1978; Hungerford, Peyton and Wilke, 1980; Simmons, 1995; Stapp, Wals, and Stankorb, 1996; Hungerford et al., 1996). For question that EBE could change values and attitudes towards nature, 9% respondents answered as "no" 69% as "yes" while 22% as "to some extent". For question about improving academic performance, 9% teachers replied negatively; 61% and 30% teachers pointed out as "yes" or "to some extent" respectively. It was reported that students who experienced issue based Environmental Education achieved significant and measurable academic performance (Volk and McBeth, 1998; Klein, 1995).Sixty eight percent (68%) teachers considered took this approach useful to motivate students in studies while 28% replied as "to some extent". It was reported by another study that EBE increased the interest, enthusiasm, deep learning and stimulation to learn (NEETF, 2000). It was concluded in another report that EBE approach provides opportunities to students to take their own ways to learn and teachers who offered open hand to students for learning, it develop a positive attitudinal outcome (Rainer and Guyton, 1999).

When it was asked to teachers that whether EBE could build more disciplined and managed environment in classrooms, 70% teachers responded as yes and 25% respond as "to some extent". For question that whether EBE could develop the ability to use known things for learning to work out unknown things; 70% teachers said as "yes" and 27% as

"to some extent". In 55% teachers' opinion, EBE tool be applied to an individual as well as group of students at the same time while 28% teachers responded as "to some extent" for the same question. Seventy two percent (72%) teachers agreed that EBE could provide better teaching and learning environment both to teachers and students while 19% responded as "to some extent". It was reported in another study that students and teachers could show high performance when students have their own choice for learning method and teachers have free hand to design their curricula (NAAEE, 2001).

EBE could provide same opportunities to both teachers and students. Forty nine percent (49%) and 39.5% respondents were totally or "to some extent" agreed that EBE would improve overall quality of education. It was pointed out in another study that EBE could bring revolution in education and blessed a lot of benefits to students and teachers (NAAEE, 2001). Both teachers and students are the pillars of education system, who can enhance the overall quality of education with EBE application. Last question was about positive outcomes of EBE among students, 49% and 41% responses were in "yes" and "to some extent", respectively, hence EBE had the ability to respond to the diverse needs of learners. It was pointed out in another study that EBE also gives opportunities to students to come across the experts' from diverse fields.

It can be concluded from above discussion that most of the teachers were of the view that EBE could bring a positive change in education system, academic performance and achievements, critical thinking and reasoning power, values and attitudes towards nature, discipline and management in classrooms, developing connection between known and unknown things and for fulfilling diverse needs of students.

Few questions were about enhancement of perception by EBE. Respondents were asked if it was necessary to organize special trainings to implement EBE, 85% of them

respond as "yes" and 11% as to some extent". For another question, 64% teacher gave positive opinion that people with academic background in humanities would be equally effective to implement EBE, while 27.5% responded as "to some extent". Respondents were asked in another question if their institutes intended to implement EBE approach; 39%, 35% and 26% responded as "yes", "to some extent" and "no" respectively. For question that whether their institutes had ever organized activities regarding environmental awareness; 37% respondents answered negatively, 32% and 31% as "yes" and "to some extent", respectively. For last question about enhancement of perception by EBE, only 39% teachers ever took part in any activity/ session/conference/ seminar related to environment.

This section contained three questions to evaluate the advantages of implementing EBE , in first question 82% teachers were hopeful that EBE would create care about environment among our posterity only 5% responded as "no", 84% respondents were of the view that EBE would be a great step towards the protection of environment, only 3 % disagreed to it. It was pointed out by another study mentioned that EBE could create extra interest for environmental subjects in students, which if nurtured will lead towards environmental stewardship (NAAEE and NEETF, 2001). For last question 7% teachers responded as "no" and rest 73% and 20% answered as "yes" and "to some extent" respectively. It was pointed out in another study that three characteristics must be part of the personality of a teacher; sensitive to issue, sense of ownership and sense of empowerment (Hungerford and Volk 1990). EBE is issue-oriented learning, foster all skills which are characteristic of leadership (NAAEE and NEETF, 2001).

In the light of above discussion, most of the teachers showed positive attitude towards the protection of environment not only for present but also for future generations

by implementing EBE. But it was also concluded that teachers were taking EE and EBE as different names for the same approach. Most of the teachers were in favour of organizing special trainings for implementing EBE but at the same time had less contribution in environment related activities /sessions/ conferences/ seminars. A big percentage of institutions had negative intention for applying EBE.

4.6.1.3 Gender Disparity Evaluation

In gender based section few questions were designed to evaluate which gender was more concerned to environment. For first question, 51 % males were responsible to arrange drinking water for household. In another question, 67% females were found responsible for boiling drinking water before use. In a question respondents were asked "who had mostly suffered from diseases in household". Forty percent (40%) females, 27% males suffered from diseases, while 28% did not suffer from diseases irrespective of the gender. Females are suffering more from diseases because they are more affected by environment as it was mentioned in another study that women are more susceptible to environmental degradation in developing countries (Braidotti, 1999).

Next question was about gender involvement in waste management at household level, 73% females were responsible for waste management. A similar question showed 70% females were conscious for getting rid of waste. In another question, regarding environmental care, 34%, 32% and 32%, respondents respond as "male", "female" and "none of them", respectively. Considering above questions almost equal percentages of males and females preferred cloth bags over plastic bags and a third proportion of respondents even did not give any preference to cloth bags. Another question was regarding hygiene and health at household level. Sixty four percent (64%) respondents

responded positively for "females" and 25% for "males" were more. In response to another question regarding health care, 41% respondents were not concerned to use packed or unpacked food while almost 24% and 26% males and females preferred packed food, respectively. For question regarding arrangement of fuel for household use; 64% males were found responsible for it. For question regarding women's participation in farming activity, 64% respondents answered negatively. In above question the reason for low participation of females in farming activity was the study area was urban. For another question, 58% females were given responsibility for selection of food items in household while in 22% cases both contributed equally. Respondents also pointed out that 58% female contributed in total economy of their family. The reason behind this was that questionnaires were distributed among (employed) males and females.

In this section few questions were also gender based to assess gender discrimination. In response to a question, 77% respondents answered positively that females enjoyed same proportion of food at household level as males did. Next question was that if women spent same amount of money for purchasing personal items (cloths, shoes, make up items etc), 67% respondents answered positively. Seventy seven percent (77%) females contributed equally in purchasing general items for their houses. Eighty nine percent (89.5%) teachers responded as "yes" that women in their houses were given equal educational opportunities regarding finance and other facilities.

The results showed that women were given equal educational opportunities regarding finance and other facilities because the data was collected from urban space. A number of challenges are there in the rural area of Pakistan ranging from lack of access to education resources, property rights and skill development to gender discrimination in labour market (Safdar, 1996). In rural areas, gender discrimination in education is

obvious. It was stated that gender disparity in education waste a pool of talent, drawn out talented women and accepted less talented men (Dollar and Gatti, 1999). It was also pointed out that marginal return is higher in educating a girl than educating a boy (World Bank, 2001 and Knowles *et al*,. 2002).

4.6.2. Gender Based Evaluation

All questions from three parts of questionnaire are discussed below with respect to gender in order to evaluate the human resource capacity for integration of EBE in formal education system.

4.6.2.1 Gender and Environmental Awareness Evaluation

In the question about getting rid of waste, 60%male and 85% females discarded waste every day. These percentages indicated that females were more careful in getting rid of waste as compared to males. In a similar question about "bath routine" 64%, 17% and 19% males took bath daily, twice and thrice a week, respectively while 32%, 59% and 28% females took bath daily, twice and thrice a week, respectively. This showed that males were more concerned to take bath daily rather twice or thrice a week. In a question regarding availability of indoor plants in offices and houses, 48% males and 69.5% females had indoor plants in offices while 65% males and 72.5% females had indoor plants in houses indicated that females were more nature loving as compared to males. For question regarding the availability of dustbins in all rooms of institutes as well as in all rooms of houses, 77% males and 87.5% females responded positively for having dustbins in all rooms of offices, while 43% males and 72% females answered as "yes" for having dustbins in all rooms of homes.

So, the higher response of females showed their sensitivity towards hygiene and cleanliness at office and household level, 78% males and 93% females gave positive response about knotting the waste bags carefully before disposing it off. For another question 81% males and 94% females washed hands before meals. Thirty four percentage (34%) males and 55% females preferred to service vehicles. In the same way, 25% males and 47% females switched off engine at red signal. All above points showed that females were more concerned in this regard than males.

In awareness section, out of 21 questions, 9 questions were associated with gender. From above results, it was evident that females were more nature loving and sensitive to environment. The nature loving attitude and sensitivity towards environment was developed in females and males due to their varying experiences in varying environment in which they lived and exercised their social responsibilities and duties. These different experiences developed a more significant element of awareness in females than males. Females were more concerned for getting rid of waste, collection of waste and they were also well aware of the fact that waste bags should be knotted carefully before disposing them. Similarly, females were formed highly concerned with the health' of their families as well as their own. In another report, it was reported that behaviour of men and women in certain ethical conflicts revealed that women think "in another voice", this thinking was named as "ethic of care" (Gilligan, 1982).

Rest of the twelve questions did not seem to have strong relation with gender but still females had better situation than males. For question regarding utilization of treated and clean drinking water, 77.5% females while 70% males answered as "yes"; 37% females and 25% males treated drinking water on daily basis while 23% females and 34% males did not remember when they treated drinking water last time; 31.5% males and

31.5% females used plastic bags, 62.5% males and 66% females used buckets, 5.8% males and 2.5% females deposited their household waste in yards; 79% females and 72% males responded as "yes" that household garbage caused diseases. In a similar question, 37% males and 42% females selected diarrhea as a disease due to household garbage.

4.6.2.2 Gender and EBE Evaluation

In this section, questions evaluate the students' understanding of EBE concept, 49% males and 42% females responded as "yes" and 39% males and 47% females as "to some extent". 76% males and 75% females responded as "yes" and 19% males and 24% females as "to some extent" for the question that if they had any idea about EBE. For question regarding subject they taught containing any environment related material, 45% males and 68% females answered as "yes" and 37% males and 14% females as "to some extent"; 31% males and 40% females while 34% males and 34% females responded as "yes" and "to some extent", respectively, that the curriculum at their institutes was based on EBE.

Some questions were meant to evaluate the positive outcomes of EBE in both genders. So, for a question if EBE could be an effective approach for effective teaching, 70% males and 82% females responded as "yes" and 23% males and 17.5% females responded as "to some extent". It was asked if EBE could change values and attitudes towards nature, 71% males and 66% females answered as "no" while 16% males and 28% females answered as "yes" and "to some extent", respectively. For another question regarding EBE outcome, 77.5% males and 74% females while 20% males and 24% females said "yes" and "to some extent", respectively, that EBE could improve the thinking and reasoning power of students; 59% male teachers and 63% female teachers

responded as "yes" that EBE implementation could improve the academic performance of students.

For another question, 70% males and 65.5 % females while 26% males and 30% females responded as "yes" and "to some extent", respectively, that EBE could be helpful to motivate the interest of students in studies. For a question if EBE could build more disciplined and managed environment in classroom, 69% males and 71% females replied as "yes" and 26% males and 23.5 % females responded as "no" and "to some extent", respectively. In another question it was asked if EBE could develop the ability among students to use known things; to learn about unknown things, 66% males and 75% females while 30% males and 23.5% females responded as yes and" to some extent", respectively. In a question 51% male and 60% females; 28% males and females responded as "yes" and "to some extent", respectively, that EBE approach could help to communicate effectively with groups and individual students at the same time. In another question "if EBE could provide better environment for teaching and learning as a whole", 72% males and females each replied as "yes" and 14% males and 24% females as "to some extent"; 27% males and 37% females gave the opinion that EBE implementation could improve over all quality of education, while 28.5% males and 33% females responded as "to some extent". In response to a question "if EBE approach had ability to respond to the diverse needs of the learners", 42% males and 55% females responded as "yes" while 45% males and 37.5% females responded as "to some extent", respectively.

Few questions were related to perception level attributed to EBE. For the question, if it was necessary to organize special trainings to implement EBE, 85% males and 86% females responded as "yes" and 9% males and 13% females as "to some

extent". In another question if people with academic background in humanities would equally be effective to implement EBE, 62% males and 67% females while 29.5% males and 25% females opinioned as "yes" and "to some extent" respectively. For a question if their institutes had intention to implement EBE approach, 33% males and 47% females responded positively while 39% males and 31% females answered as "to some extent"; 27% males and 37% females answered positively for their institutes for organizing activities regarding environmental awareness while 28.5% males and 33% females responded as "to some extent". In last question related to perception enhancement due to EBE, 33% males and 45% females had taken part in some environmental activity/ session/conference/ seminar related to environment.

Three questions were meant to evaluate the advantages of implementing EBE; 80% males and 84% females had opinion that EBE would create care about environment among coming generations while 12% males and 15% females were hopeful "to some extent". For next question, 86.5 males and 82% females while 9% males and 17% females were "agreed" or "to some extent" respectively for the fact that EBE would be a great step towards the protection of environment practically. In the last question if EBE could provide us with a better environmental leadership, 68% males and 78% females responded as "yes" and 22% males and 18% females replied as "to some extent".

4.6.2.3 Gender Based, Disparity Evaluation

In gender based section few questions were designed to evaluate which gender was more concerned to environment. Fifty five percent (55%) males and 47% females thought that mostly males arranged drinking water for households. While 32% males and 41.5% females thought females were responsible for arranging drinking water for

households. 61% males' and 73.5% females thought that normally females boiled water before use; 37% males and 43.5 % females thought that mostly females suffered from diseases; 69% males and 77% females responded that females managed waste at household level. In another question, 55.5% males and 86.5% females said that females were more conscious for getting rid of waste.

For another question meant to evaluate the degree of environmental care, 24% males and 41% females responded that females gave more preference to the use of cloth bags over plastic bags while 36% males and 29% females responded that "none of them" gave preference to cloth bags over plastic bags; 57.5 % males and 70% females thought that females were more conscious regarding hygiene and health at household level; 17% males and 31% females replied that males preferred packed food while 53% males and 29% females responded that neither males nor females preferred packed food.

Above results reveal that linked more with environment due to their social responsibilities and ethical nature. As it had been pointed out that usually men's work is self-oriented and women's work is mostly oriented towards other people (Waring 1988, Merchant 1996, Mies/Shiva 1993, Nelson, 1996). It was also known that mostly unpaid household work is done "for the environment" (Research on Gender, the Environment and sustainable development, 2000); 60% males and 68% females answered that males are responsible to arrange fuel for household use; 67.5% males and 60% females responded that women of their houses did not participate in farming activity.

In this section few questions were meant to examine the impacts of gender discrimination. Seventy seven (77%) males as well as females responded that females enjoyed the same proportion of food at house hold level as men did. Fifty three percent (53%) males and 63.5% females thought that mostly females governed the selection of

food items at house hold level; 32% males and 40% females responded that females contributed to total economy of their families while 63% males and 32% females replied negatively; 63% males and 70% females responded that women of their houses spent same amount of money for purchasing personal items (cloths, shoes, make up etc.) as men did.

72.5% males and 81% females responded that women of their houses contributed equally in purchasing general items for their houses. Similarly 87.5% males and 91.5% females responded that women in their houses were given equal educational opportunities regarding finance and other facilities.

The graphs show the correlation of variables in terms of percentage of frequencies. Graphs are plotted only for those variables, which are significantly related to at least three or more other variables at the same time.

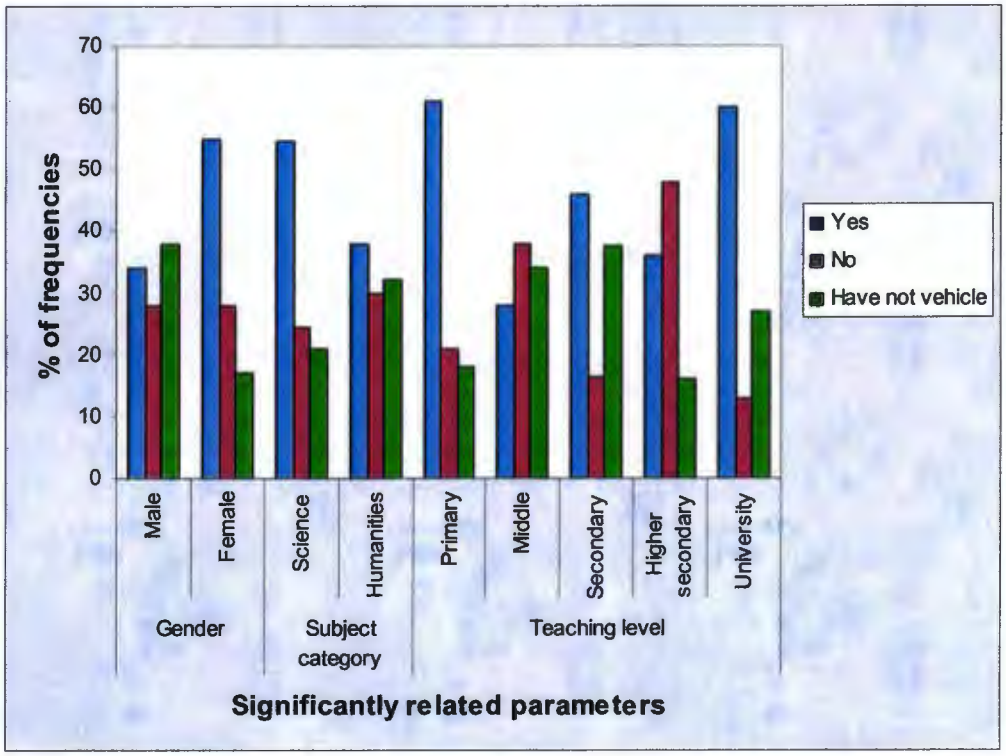

Figure 4.1 Attitude for Service of Vehicle

Figure 4.1 shows that the attitude for vehicle service is greatly affected by gender, subject category and teaching level. Female teachers with science background have more positive attitude to service vehicles regularly. In case of teaching level, attitude to vehicle service was not found to be improving with in teaching level.

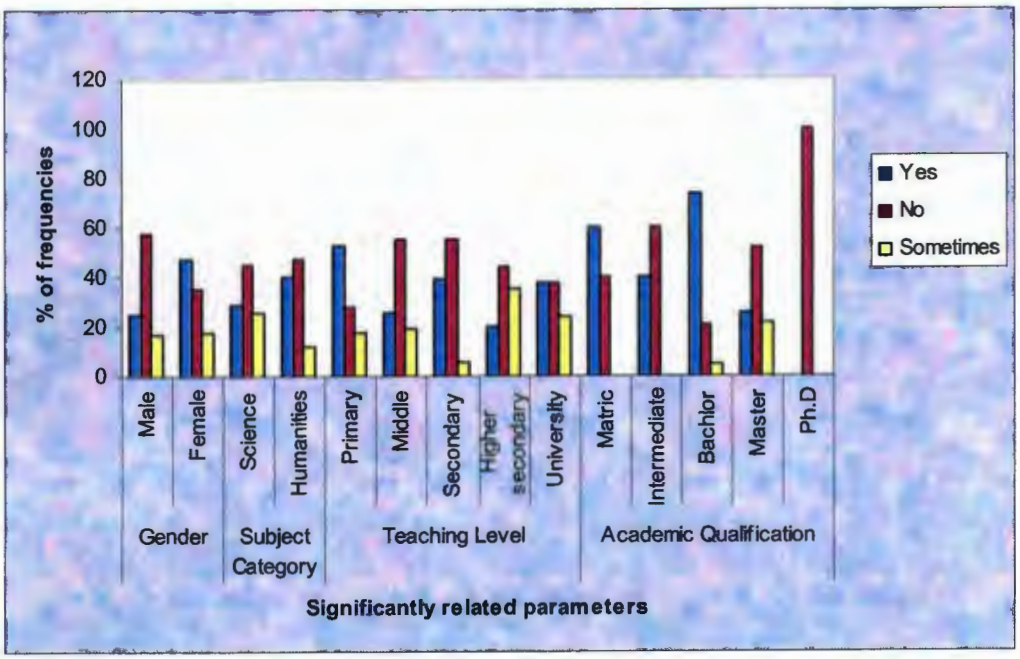

Figure 4.2 Attitude of Respondents at Red Signal

Figure 4.2 shows that the attitude of respondents at red signal is highly affected by gender, subject category, teaching level, and academic qualification. More female with humanities background, primary level graduate teachers switched off engines at red signals.

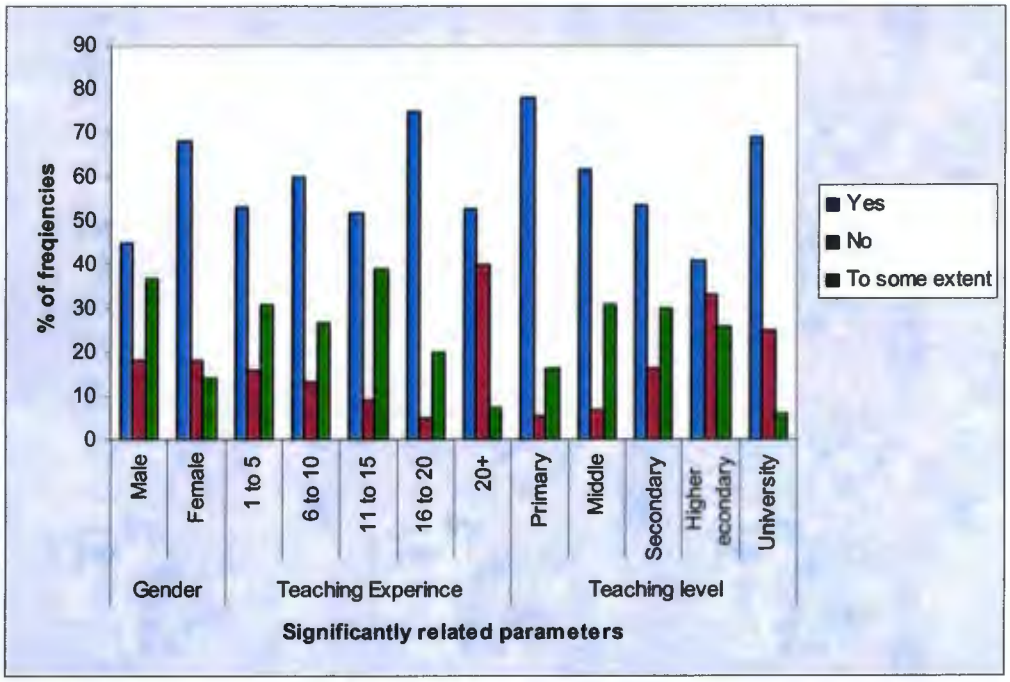

Figure 4.3 Environmental Content in Curriculum

Figure 4.3 indicates the response of teachers for environmental content in curriculum in their opinion. Higher percentage of females with experience of 16-20 years and primary teachers responded that their subjects should contain environment related material.

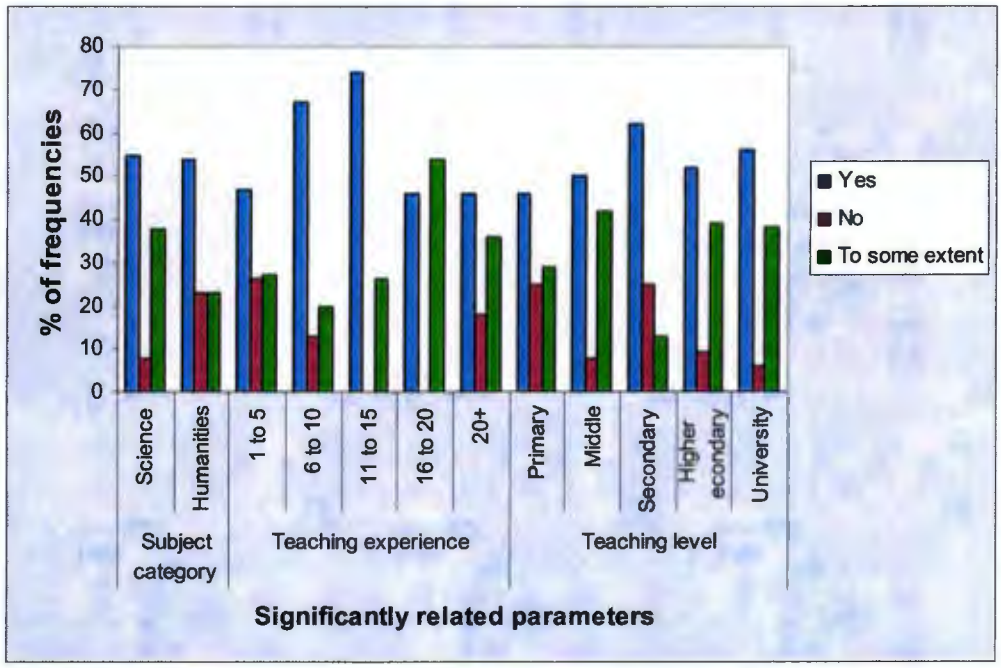

Figure 4.4 EBE Approach to Communicate with Groups and Individuals

Figure 4.4 shows teacher opinion about EBE to communicate with groups and individuals at same time with reference to subject category, teaching experience and teaching level. Most of the teachers with science background, and with 11-15 years experience agreed that EBE approach can help to communicate effectively with groups and individuals at the same time. In case of teaching level, most of the secondary level teachers agreed to the this opinion but at the same time thirty percentage did not agree, while contrary to this, university teachers agreed to some extent to this outcome of EBE.

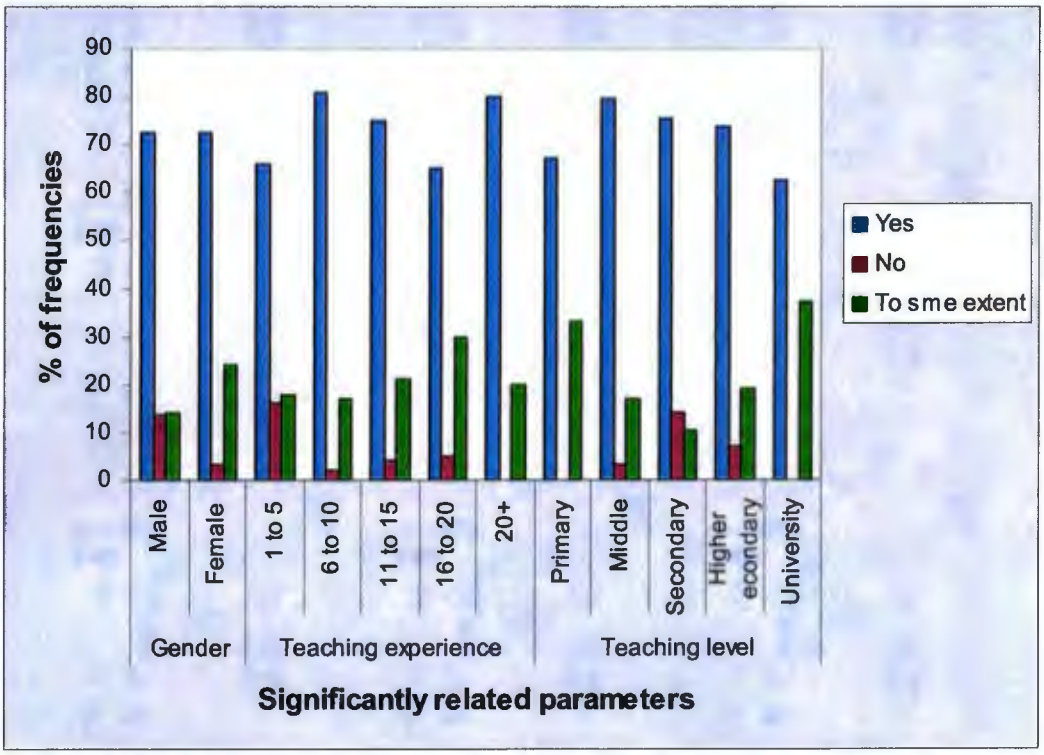

Figure 4.5 EBE Approach for Better Teaching and Learning Environment

Figure 4.5 shows that the opinion of teachers that EBE approach can provide better teaching and learning environment. The response significantly varied in term of gender, teaching experience and teaching level. Females with 6-10 years experience and primary teachers were more hopeful about above mentioned outcome of EBE.

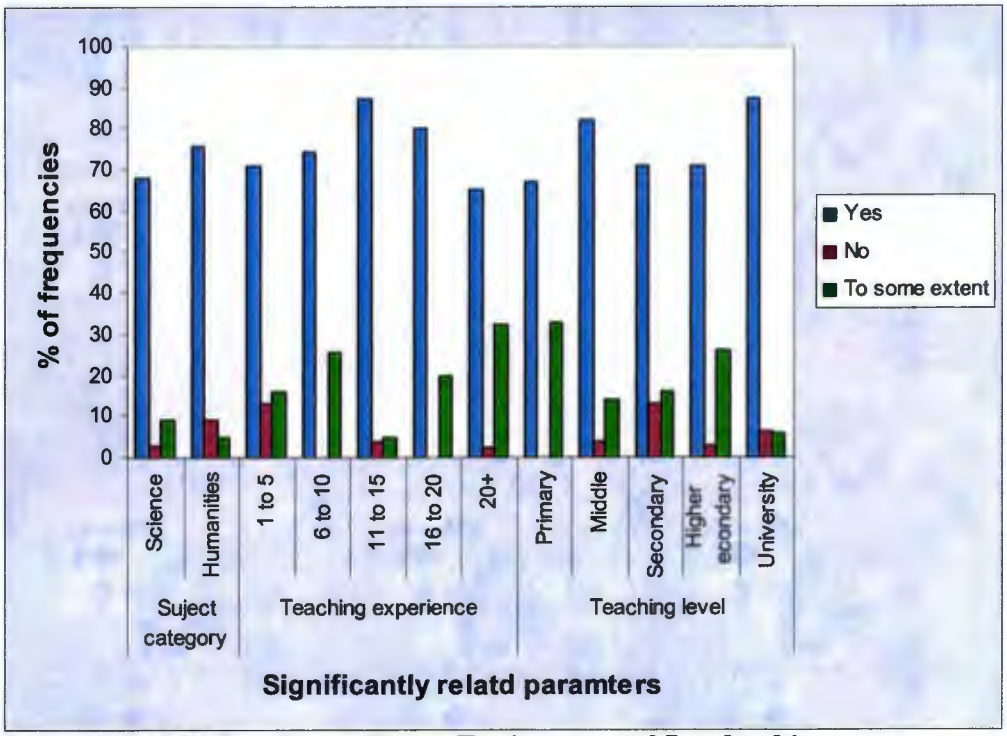

Figure 4.6 EBE Provides a Better Environmental Leadership

Figure 4.6 puts forward the response of teachers that EBE can provide a better environmental leadership. Science teachers with experience 6-10 years and higher secondary teachers were most positive that EBE can provide better environmental leadership.

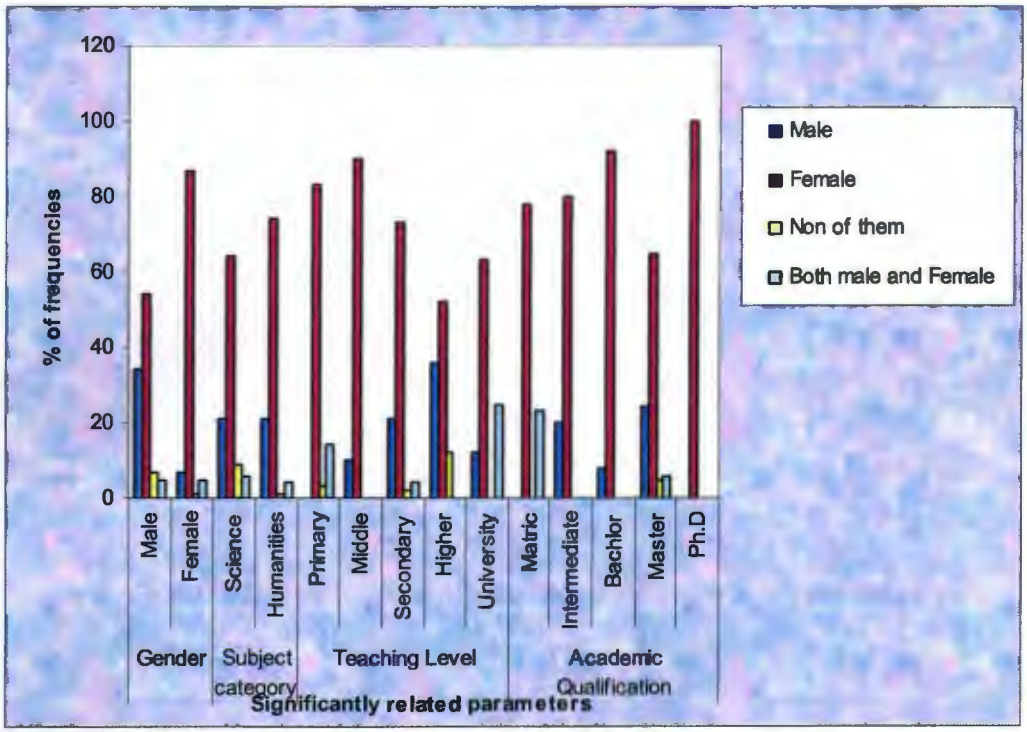

Figure 4.7 Gender Based Consciousness for Waste

Figure 4.7 exhibits gender-based consciousness for waste disposal at household level. It was found that consciousness for waste disposal was higher among females keeping in view all parameters exhibited in figure 4.7 i.e. Gender, subject category, teaching level, academic qualification. Female teachers with humanities background were more conscious for waste disposal as compared to teachers with science background. The level of consciousness was again considerably higher in primary and middle level female teachers. Regarding academic qualification, it was found that consciousness for waste disposal increased from matric to bachelor level and again decreased at master degree level.

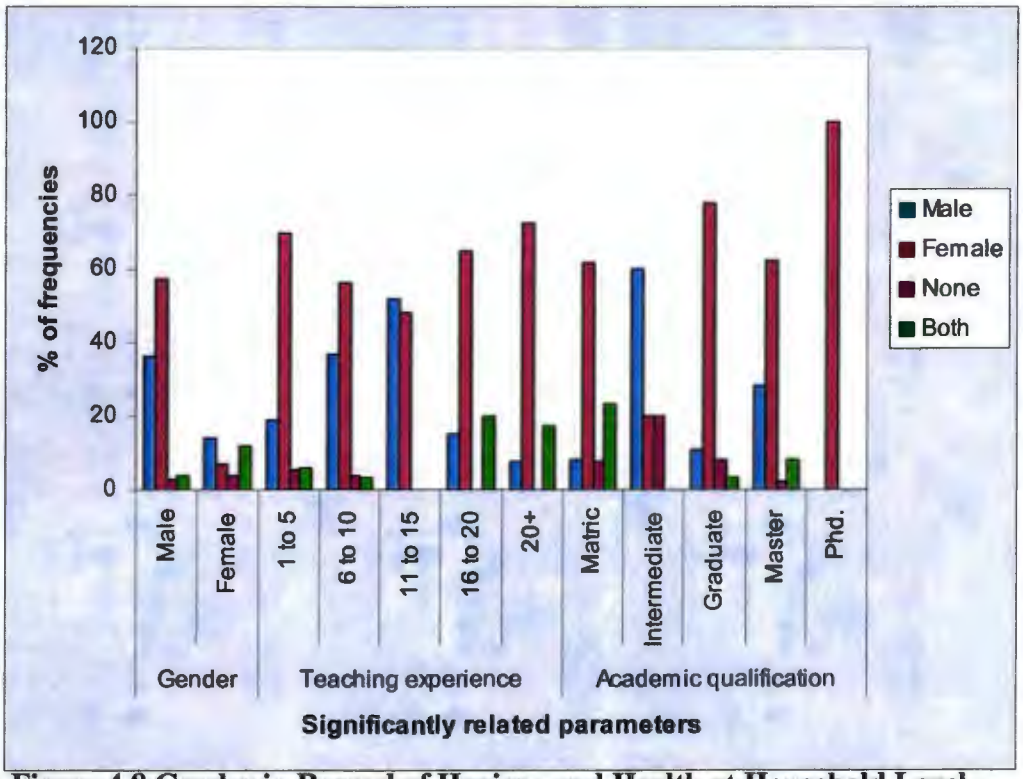

Figure 4.8 Gender in Regard of Hygiene and Health at Household Level

Figure 4.8 shows the gender involvement in hygiene and health at household level. All three parameters gender, teaching experience and academic qualification clearly show that females are more concerned with hygiene and health at household level.

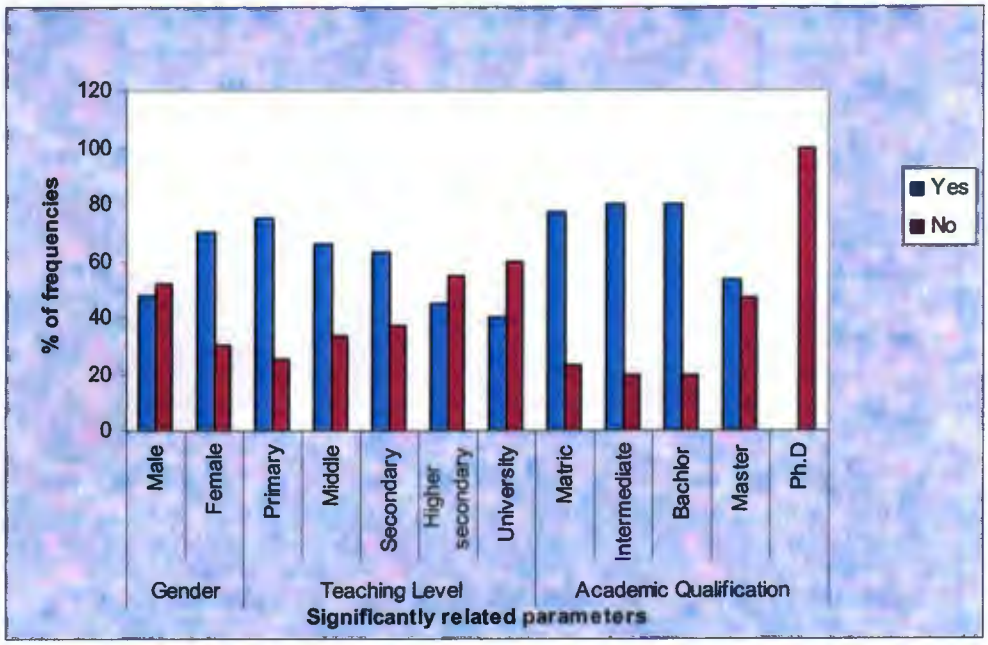

Figure 4.9 Attitude for indoor plants in office

Figure 4.9 shows the attitude of respondents towards indoor plants in office. Even though percentage frequencies for positive response were higher yet many of the respondents did not have indoor plants in their offices. Female had positive attitude for having indoor plants in their offices as compare to men. Primary teachers were more concerned to have indoor plants and academic qualification did not seem to have impact on this attitude.

Conclusions

The current study revealed that teachers were aware of their personal and family hygiene conditions and negative health impacts of mismanaged household garbage. But disposal techniques for household garbage were not hygienic in most of the cases. They usually adopted open dumping for disposal which led towards soil pollution and other related environmental problems. When moved towards pollution prevention issues at household level most of the respondents even did not know about solid waste segregation. In context of gender, females were more conscious about their own and their families' health conditions owing to their more concentrated role at household level. In all households, domestic arrangements and chores are social responsibility package awarded to women in our society. In most of the cases, females were treating drinking water before use, were more conscious for waste management, concerned about hygiene and health, seemed to give preference to packed food.

It was concluded that most of the students had concept of environmental issues and conditions and teachers were equipped with concept of Environmental Education but not with Environment Based Education. Most of the teachers were actually merging/intermingling the concepts of EE and EBE. Curricula of institutes, in the study area had environment related material but was not properly distributed in different subjects. Majority of teachers agreed that EBE could be effective approach for effective would teaching, improve the thinking and reasoning power of students, would change the attitudes and values towards nature, improve the academic performance, motivate the interest of students in studies, build more disciplined and managed environment in classrooms, develop ability to learn from known to unknown things, communicate with

an individual as well as group of students at the same time, provide better learning and teaching environment, improve overall quality of education and fulfill the diverse needs of learners. It was also concluded that it would be necessary to organize special training for the implementation of EBE but most of the institutes were non receptive to organize environment related activities and even had no intention to implement EBE. Teachers had less interest and opportunities to attend activities, sessions, conferences and seminars related to environment. While seeing from gender perspective, female teachers seemed to be more hopeful for positive outcomes of EBE approach i-e. it could be effective approach for effective teaching, to bring a change in values and attitudes towards nature, to create environmental care in our posterity and to give better environment for teaching and learning.

A strong positive relation between females and environment was found due to their social (household) responsibility and their hidden tendency of care. They provide prenatal and postnatal cares to their children and this potential makes them lawyer of environmental care. Females are biologically closer intended to nature i-e to conceive, give birth and breast feeding. There was no gender discrimination regarding educational opportunities because the study area (Islamabad and Rawalpindi) included large cities. Moreover respondents were themselves teachers and almost all had positive attitude towards female education.

It was concluded from the study that teachers teaching at primary school level had better environmental awareness as they showed more sensitivity regarding personal hygiene and better understanding of health impacts of waste and related diseases. Similarly teachers teaching at primary school level showed better understanding of environmental and energy issues like switching off engines, service of vehicles, garbage

collection and its careful disposal etc. In context of EBE primary school teachers again responded more positively as compared to teachers teaching at higher levels and they were in favour to integrate environmental content in curriculum as EBE had ability to motivate students, to work individually as well as in groups in their opinion. EBE also had ability to provide better environment for teaching and learning and they were also in favour to organize environment based activities.

It was found that science group had better understanding and awareness regarding environment. They had better behaviours towards personal hygiene but on the other hand people from humanities group were in higher favour to incorporate EBE in institutes as they thought that EBE could improve classroom management and had ability to produce sound environmental leadership. They were also in favour to organize environment based activities.

It was also found that general environmental behaviour improved with an increase in experience. In context of EBE, people with experience from 6- 15 years had better response as compared to inexperienced or highly experienced teachers. Most of the teachers had opinion that EBE has ability to provide equal communication skills among individuals and groups, help to improve management in class rooms and provides better environment for learning. The results also showed that all experienced teachers were not fully intended to incorporate EBE in education system.

With an increase in education, understanding of concept of EBE was increased among teachers but academic qualification had no significant impact on behaviour of people as results showed a trend that most of people with matriculation up to bachelor level showed more positive attitudes towards environment as compare to people with higher academic qualification.

RECOMMENDATIONS

1. It is recommended that EBE should be implemented from class I to VII particularly and EE content should be introduced from class VII to onward in curricula, given under EEP project.

2. Teachers/students had misconception regarding Environmental Education (EE) and Environment Based Education (EBE), as they were taking them as same concept, this issue can be resolved by introducing EBE from primary to higher secondary level.

3. Education policy supports Environmental Education (EE) but not Environment Based Education (EBE) so it should be refined and framed to make uniform curricula.

4. Mass and electronic media can play strong role in introduction of environmental awareness among public that in turn will be helpful to implement EBE.

5. Governmental and non-governmental organizations (NGOs) working on environment should play their role by organizing environment related activities to highlight the significance of EBE and EE.

6. To integrate EBE into curricula skilled persons should be hired to transform current curriculum.

7. Environment based projects and activities (seminars, conferences, training workshops and debates) should be organized for teachers as they can bring positive attitudinal and behavioural changes.

8. Refresher courses on EE and EBE should be organized for teachers to train them for effective Environmental and EBE implementation.

9. Teacher training programmes i.e. B.Ed, M.Ed etc should have EE and EBE courses as compulsory courses.

10. EE and EBE content should be integrated horizontally as well as vertically in appropriate way so that curricula must have coherence in content.

11. The EE and EBE content should be evaluated by environmentalists as well as teachers before its integration in curricula.

12. EBE curricula guides should be provided to teachers so that they would be able to handle their subjects accordingly.

13. After implementing EBE teachers should be assessed to fill the remaining gaps.

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Questionnaire
(For teachers)

Gender: **a) Male** **b) Female**

Teaching experience: a) 1-5 **b) 6-10** **c)11-15** **d)16-20** **e) 20+**

Level of teaching: **a) Primary** **b) Middle** **c)Higher** **d)Intermediate** **e)University**

Academic qualification (mention subject): _____

Institution name (in which you are employee):_____

Part 1st (Awareness)

1. Do you treat drinking water?
   a) Yes b) No

2. When as the last time you treated your water?
   a) Today b)Yesterday c)in a week d) In two weeks e)A month f) don't remember

3. How do you gather wastes inside the house?
   a)In plastic bags b) in buckets c)in the yard

4. Do you believe that garbage has caused disease(s) in your household?
   Yes b) No

5. If yes, what diseases(s)?
   a)Diarrhea b) Respiratory diseases c)Typhoid d)skin diseases e) don't know

6. How often do you get rid of the garbage?
   a) Every day b) Every two day c)once per week d) Don't know

7. Does your community get rid of the garbage?
   Yes b) No c) Sometimes d) Rarely

8. If yes, what methods are used to get rid of the garbage?
   a) Burning b) Gathering in one place c)Don't know

9. How many times do you take bath?
   a) Twice a week b) Thrice a week c) Daily

10. Do you have indoor plants in your office?
    a) Yes b) No

11. Do you have indoor plants in your house?
    a) Yes b) No

12. Is there dustbin available in all rooms of your institution?
    a) Yes b) No

13. Is there dustbin available in all rooms of your house?
    a) Yes b) No

14. Do you segregate solid waste before disposing it off?
    a) Yes b) No c) to some extent

15. Do you think that waste bag should be knotted carefully before disposing it off?
    a) Yes b) No

16. Do you use energy savors in your house?
    a) Yes b) No

17. Do you rinse your mouth after very meal?
    a) Yes b) No

18. Do you wash your hands after defecation?
    a) Yes b) No

19. Do you wash your hands before taking every meal?
    a) Yes b) No c) some times

20. Do you service your vehicle regularly?
    a) Yes b) No c) have not vehicle

21. Do you switch off engine of vehicle at red signal?
    a) Yes b) No c) some times

Part 2nd (Environment Based Education)

22. Do the student have understanding of environmental concepts, issues and conditions in your opinion?
    a) Yes b) No c) To some extent

23. As a teacher, do you have an idea about environment based education?
    a) Yes b) No c) To some extent

24. Did the subject you taught contain any environment related material?
    a) Yes b) No c) To some extent

25. Do you think that the curricula at your school are based on environment Based Education?
    a) Yes b) No c) To some extent

26. Do you think that environment based education is an effective approach for effective teaching?
    a) Yes b) No c) To some extent

27. Is it necessary to organize special trainings to implement environment based education?
    a) Yes b) No c) To some extent

28. Can environment based education change the values and attitude towards nature?
    a) Yes b) No c) To some extent

29. Do you think that environment based education improves the thinking and reasoning power of students?
    a) Yes b) No c) To some extent

30. Will environment based education create care about environment among coming generations?
    a) Yes b) No c) To some extent

31. Do you think that environment based education will be a great step towards the protection of environment practically?
    a) Yes b) No c) To some extent

32. Can student's academic performance be improved by implementing environment based education?
    a) Yes b) No c) To some extent

33. Can environment based education be helpful to motivate interest of students in studies?
    a) Yes b) No c) To some extent

34. Ca environment based education build more disciplined ad managed environment in the class room?
    a) Yes b) No c) To some extent

35. Can environment based education develop the ability among students to use known things (natural objects/plants/animals etc.) to learn about unknown things?
    a) Yes b) No c) To some extent

36. Does environment based education approach help to communicated with groups and individual students at the same time?
    a) Yes b) No c) To some extent

37. Will people with academic background in humanities be equally effective to implement environment based education?
    a) Yes b) No c) To some extent

38. Do you think that environment based education will provide better environment for teaching and learning as a hole?
    a) Yes b) No c) To some extent

39. Does your institution intend to implement environment based education approach?
    a) Yes b) No c) To some extent

40. Has your institutions ever organized activities regarding environmental awareness?
    a) Yes b) No c) To some extent

41. Will environment based education implementation improves the overall quality of education?
    a) Yes b) No c) To some extent

42. Have you ever taken part in any activity /session/conference/seminar related to environment?
    a) Yes b) No c) To some extent

43. Do you think that environment based education approach has the ability to respond to the diverse needs of the learners?
    a) Yes b) No c) To some extent

44. Can environment based education provide us with a better environmental leadership?
    a) Yes b) No c) To some extent

Part 3rd (Gender based)

45. Who arranges/brings the drinking water for house hold use?
    a) Male b) Female c) Male children d) Female Children e) None of them

46. Who treats/boil the drinking water before use?
    a) Male b) Female c) Male children d) Female Children e) none of them

47. Who has mostly suffered from diseases in the house hold?
    a) Male b) Female c) Male children d) Female Children e) none of them

48. Who has manages the waste at household level?
    a) Male b) Female c) Male children d) Female Children e) none of them

49. Who is more conscious for getting rid of waste?
    a) Male b) Female c) none of them

50. Who gives higher preference to the use of cloth bags or paper bags over plastic bags?
    a) Male b) Female c) none of them

51. Do females enjoy same proportion of food at household level?
    Yes b) No

52. Who mostly governs the selection of food items at household level?
    a) Male b) Female c) Both

53. Who is more conscious regarding hygiene and health at household level?
    a) Male b) Female c) None

54. Who prefers packed food in your house?
    a) Male b) Female c) None

55. Who arranges/brings fuel for household
    a) Male b) Female c) None

56. Do women of your house participate in farming activity?
    Yes b) No

57. Do women of your house contribute to the total economy of your family?
    Yes b) No

58. Do women of your house spent same amount of money for purchasing personal items (cloths,shoes,makeup etc.)?
    Yes b) No

59. Do women of your house contribute equally in purchasing general items?
    Yes b) No

60. Are women in your house given equal educational opportunities regarding finance and other facilities?
    a) Yes b) No

سوال نامہ

(برائے اساتذہ)

جنس: ☐ مرد ☐ عورت ادارے کا نام:

پڑھانے کا تجربہ: ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 20+

پڑھانے کا درجہ: ☐ پرائمری ☐ سیکنڈری ☐ بیئر ☐ انٹرمیڈیٹ ☐ یونیورسٹی

تعلیم: مضمون جو آپ پڑھاتے ہیں؟

﴿حصہ اول﴾

معلومات عامہ

1۔ کیا آپ پینے کے پانی کو صاف کرتے ہیں؟

☐ ہاں ☐ نہیں

2۔ آخری بار آپ نے پانی کی صفائی کب کی تھی؟

☐ آج ☐ کل ☐ ہفتہ پہلے ☐ دو ہفتے پہلے ☐ مہینہ پہلے ☐ معلوم نہیں

3۔ آپ گھر میں کچرے کو کس طرح اکٹھا کرتے ہیں؟

☐ پلاسٹک کے تھیلوں میں ☐ کوڑا دان میں ☐ صحن میں

4۔ آپ کے خیال میں کیا کوڑا کرکٹ گھروں میں بیماریوں کا سبب بنتا ہے؟

☐ ہاں ☐ نہیں

5۔ اگر ہاں تو پھر کونسی بیماریوں کا سبب بنتا ہے؟

☐ سانس کی بیماریوں کا ☐ جلدی بیماریوں کا ☐ ہیضائڈ ☐ مکھی و تے ☐ معلوم نہیں

6۔ آپ کوڑے کو کتنی بار ٹھکانے لگاتے ہیں؟

☐ ہر روز ☐ ہر دو دن بعد ☐ ہفتہ میں ایک بار ☐ معلوم نہیں

7۔ کیا آپ کی کمیونٹی کوڑے کو ٹھکانے لگاتی ہیں؟

☐ ہاں ☐ نہیں ☐ کبھی کبھی ☐ بہت کم

8۔ اگر ہاں تو کوڑا کرکٹ سے چھٹکارے کے لیے کون سا طریقہ کار اپنایا جاتا ہے؟

☐ آگ لگا کر ☐ ڈھیر لگا کر ☐ زمین میں دبا کر ☐ معلوم نہیں

9۔ آپ ہفتے میں کتنی بار نہاتے ہیں؟

☐ دو دفعہ ☐ تین دفعہ ☐ روزانہ

10۔ کیا آپ کے دفتر میں پودے ہیں؟

☐ ہاں ☐ نہیں

11۔ کیا آپ کے گھر میں پودے ہیں؟

☐ ہاں ☐ نہیں

12۔ کیا آپ کے ادارے کے تمام کمروں میں کوڑا دان ہیں؟

☐ ہاں ☐ نہیں

13۔ کیا آپ کے گھر کے تمام کمروں میں کوڑا دان ہے؟

☐ ہاں ☐ نہیں

14 کیا آپ کوڑے کو ٹھکانے لگانے سے پہلے چھانٹی کرتے ہیں؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

15 کیا آپ کے خیال میں کوڑے کے تھیلے کو ٹھکانے لگانے سے پہلے ٹھیک طرح سے باندھنا چاہیے؟

☐ ہاں ☐ نہیں

16۔کیا آپ گھر میں نرجی سیور استعمال کرتے ہیں؟

☐ ہاں ☐ نہیں

17۔کیا آپ ہر کھانے کے بعد کلی کرتے ہیں؟

☐ ہاں ☐ نہیں

18۔کیا آپ رفع حاجت کے بعد ہاتھ دھوتے ہیں؟

☐ ہاں ☐ نہیں

19۔کیا آپ ہر کھانے سے پہلے ہاتھ دھوتے ہیں؟

☐ ہاں ☐ نہیں

20۔کیا آپ اپنی گاڑی کو باقاعدگی سے مرمت کرواتے ہیں؟

☐ ہاں ☐ نہیں

21۔کیا آپ سرخ اشارے پر اپنی گاڑی بند کر دیتے ہیں؟

☐ ہاں ☐ نہیں

﴿حصہ دوئم﴾

ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم

22۔کیا آپ کی رائے میں آپکے طلباء/ طالبات ماحولیاتی حالات، معاملات اور خیالات کے بارے میں آگاہی رکھتے ہیں؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

23۔بحیثیت استاد، کیا آپ ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کے بارے میں کچھ جانتے ہیں؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

24۔کیا آپ جو مضمون پڑھاتے ہیں اس میں ماحول سے متعلقہ مواد ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

25۔کیا آپ کے خیال میں آپ کے سکول کا نصاب ماحولیاتی بنیادوں وضع کردہ نظام تعلیم پر ترتیب شدہ ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

26۔کیا ایک موثر تدریس کے لیے ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم ایک موثر ذریعہ ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

27۔کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کے نفاذ کے لیے خصوصی تربیت/مشقوں کی ضرورت ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

28۔کیا آپ نے کبھی ماحول سے متعلقہ سیمینار۔سرگرمی۔اجلاس۔یا کانفرنس میں حصہ لیا ہے؟

☐ ہاں ☐ نہیں

29۔کیا آپ کے خیال میں ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم طلباء و طالبات کی مختلف ضروریات کو پورا کر سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

30۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم فطرت سے متعلق اقدار اور رویوں کو تبدیل کر سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

31۔ کی آپ کی رائے میں ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم طالبعلموں کی فکری اور عقلی صلاحیتوں کو بہتر بناتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

32۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم آنے والی نسلوں میں ماحول کی حفاظت کو اجاگر کر سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

33۔ کیا آپ کی رائے میں ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم ماحول کی حفاظت کے لیے عملی قدم ہو سکتا ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

34۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کا نفاذ طلباء وطالبات کی تعلیمی کارکردگی کو بہتر کر سکتا ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

35۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم طلبا مطالبات کی پڑھائی میں دلچسپی کو متحرک کرنے میں مددگار ہو سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

36۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کمرہ جماعت میں نظم وضبط پیدا کر سکتا ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

37۔ کیا آرٹس گروپ سے متعلقہ افراد بھی ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کے لیے موثر ثابت ہو سکتے ہیں؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

38۔ کیا آپ کے خیال میں ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم مجموعی طور پر درس وتدریس کے لیے بہتر ماحول مہیا کر سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

39۔ کیا آپکا ادارہ ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کے نفاذ کا ارادہ رکھتا ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

40۔ کیا آپ کے ادارے نے ماحولیاتی آگاہی کے کبھی کچھ اقدامات کیے ہیں (یا) سرگرمیاں ترتیب دی ہیں؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

41۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم کا نفاذ مجموعی طور پر تعلیم کے معیار کو بہتر بنا سکتا ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

42۔ کیا ماحولیاتی بنیادوں پر وضع کردہ نظام تعلیم ہمیں ماحول سے متعلق بہتر راہنمائی فراہم کر سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

﴿حصہ سوئم﴾

جنس پر مبنی

43۔ کیا ماحولیاتی بنیادوں پر تعلیم ہمیں ماحول سے متعلق بہتر راہنمائی کر سکتی ہے؟

☐ ہاں ☐ نہیں ☐ کسی حد تک

44۔ آپ کے گھر میں گھریلو استعمال کے پانی کا انتظام کون کرتا ہے؟

☐ مرد ☐ عورت ☐ بچہ ☐ بچی ☐ کوئی بھی نہیں

45۔ آپ کے گھر میں استعمال سے پہلے پانی کو کون ابالتا ہے؟

☐ مرد ☐ عورت ☐ بچہ ☐ بچی ☐ کوئی بھی نہیں

46۔ گھر میں کون بیماریوں کا زیادہ شکار ہوتا ہے؟

☐ مرد ☐ عورت ☐ بچہ ☐ بچی ☐ کوئی بھی نہیں

47۔ گھریلو سطح پر کوڑا کرکٹ ٹھکانے، سینے کا کام کون کرتا ہے؟

☐ مرد ☐ عورت ☐ بچہ ☐ بچی ☐ کوئی بھی نہیں

48۔ کچرے سے چھٹکارا پانے کے بارے میں کون زیادہ فکر مند ہوتا ہے؟

☐ مرد ☐ عورت ☐ بچہ ☐ بچی ☐ کوئی بھی نہیں

49۔ پلاسٹک کے تھیلوں پر کپڑے یا کاغذ کے تھیلوں کو کون ترجیح دیتا ہے؟

☐ مرد ☐ عورت ☐ بچہ ☐ بچی ☐ کوئی بھی نہیں

50۔ کیا عورتیں گھر میں مردوں کی نسبت خوراک کا ایک جیسا تناسب حاصل کرتی ہیں؟

☐ ہاں ☐ نہیں

51۔ گھر میں پکانے والی چیزوں کا انتخاب کون کرتا ہے؟

☐ مرد ☐ عورت ☐ دونوں

52۔ گھر میں صحت اور حفظان صحت کے بارے میں زیادہ کون فکر مند ہوتا ہے؟

☐ مرد ☐ عورت ☐ دونوں

53۔ آپکے گھر میں پیک شدہ غذا کو کون ترجیح دیتا ہے؟

☐ مرد ☐ عورت ☐ دونوں

54۔ آپکے گھریلو استعمال کے لیے ایندھن کون لاتا ہے؟

☐ مرد ☐ عورت ☐ دونوں

55۔ کیا آپ کے گھر، عورتیں زرعی سرگرمیوں میں حصہ لیتی ہیں؟

☐ ہاں ☐ نہیں

56۔ کیا ذاتی اشیاء کی خریداری کے لیے آپ کی گھر کی خواتین مردوں کے برابر خرچ کرتی ہیں؟

☐ ہاں ☐ نہیں

57۔ کیا گھریلو چیزوں کی خریداری میں خواتین برابر کا حصہ ڈالتی ہیں؟

☐ ہاں ☐ نہیں

58۔ کیا آپ کے گھر کی خواتین کو تعلیم کے حصول کے برابر مالی اور دوسری سہولتیں میسر ہیں؟

☐ ہاں ☐ نہیں