

**Environmental Awareness among Student Teachers of District
Institute of Education and Training, Mamit**

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Submitted

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DECLARATION

I, H.Malsawmdawnga, hereby declare that the subject matter of this dissertation is the record of work done by me, that the contents of this dissertation did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the dissertation has not been submitted by me for any research degree in any other University/Institute.

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CERTIFICATE

This is to certify that the dissertation entitled, “ENVIRONMENTAL AWARENESS AMONG STUDENT TEACHERS OF DISTRICT INSTITUTE OF EDUCATION AND TRAINING, MAMIT” is the bonafied research conducted by Mr. H.Malsawmdawnga under my supervision. Mr. H.Malsawmdawnga worked methodically for his dissertation being submitted for the degree of Master of Philosophy in the Department of Education, Mizoram University.

This is to further certify that the research conducted by Mr. H.Malsawmdawnga has not submitted an application of this or any other University/Institute.

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ABBREVIATIONS

NPE	: National Policy on Education
DIET	: District Institute of Education and Training, Mamit
NCTE	: National Council of Teacher Education
D.El.Ed.	: Diploma in Elementary Education
NCERT	: National Council of Educational Research and Training
NSS	: National Service Scheme
NCC	: National Cadet Corps
SUPW	: Socially Useful Productive Work
EVS	: Environmental Studies

CHAPTER – I

INTRODUCTION

1.1 Environment

The word 'Environment' is derived from the French word Environner, which means to encircle or surround. All the biological and non-biological entities surrounding us are included in environment. As per Environment (Protection) Act, 1986, environment includes all the physical and biological surroundings of an organism along with their interactions. Environment is thus defined as “the sum total of water, air and land and the inter-relationships that exist among them and with the human beings, other living organisms and materials(Environmental Act, 1986).

In other words, Environment is the combination of physical and biological situation and is known as “Biosphere”. Which is comprised of three parts: Atmosphere (Air), Lithosphere (Soil) and Hydrosphere (Water). The explosion of scientific knowledge during the past centuries, development of new technologies, modernization and urbanization have caused serious environmental crisis. According to Douglas and Holland(1947), “The term environment is used to describe, in the aggregate, all the external forces, influences and conditions, which affect the life, nature, behavior and growth, development and maturity of living organism”.

The UN World Conference on the environment in Stockholm in 1972, the Global Forum in 1992, the Earth Summit held in Rio de-Janeiro in 1992 and in Johannesburg in 2002, and the activities organized by the government and non-government organizations of different countries generated awareness among masses towards environment, consequently efforts are being made to resist environmental degradation. The Stockholm Conference in 1972 especially recommended that UNESCO and other international agencies will establish an international programme in environmental education. The programme will be interdisciplinary in approach to be organized in school and out of school encompassing all levels of education, directed towards the general public particularly the ordinary citizens in both rural and urban areas, youth and adults alike, with a view to educating them to manage and

protect their environment. The close connection between education and environmental awareness can thus be established.

1.2 Environmental Awareness

Environmental awareness is a very significant area to which our education today cannot turn a deaf ear owing to the fact that we live in a world where issues related to our environment are a reality. According to Péri Rasolondraibe(1991), “The delicate balance of the earth’s small and fragile biosphere, which makes it a home to millions of species and subspecies of animals and plants both aquatic and terrestrial, is dangerously threatened”. As a result, several attempts and projects have been made at various levels to effectively address the present situation where our ecosystems are in danger of catastrophe.

“Environmental awareness is that which provides power and understanding to take decisions individually and collectively and initiate actions for social, cultural, and economic survival, growth and development and for conservation of nature and natural resources” (Belgrade International Workshop, 1975). In simple words, environmental awareness is to understand the fragility of our environment and the importance of its protection. Now environment has become the burning issue for all the academicians, policymakers and governments of the world.

To meet the present very dangerous environmental situation, it is essential that everyone makes a contribution and which will emerge from the environmental knowledge. It is universally acknowledged that education is an effective means for social reconstruction and to a great extent it offers solutions to the problems a society is faced with. It is intimately connected with society and is conditioned by the ethos, culture and character of a nation.

Good physical environment and social environment decide the quality of life. While physical environment is highly stressed; the social environment is being neglected. There has been a gradual erosion of ethical and moral values, which are excluded from the school curriculum. Proper utilization of environment, protection

and nourishment are needed for the healthy life of the population. Then one can at least control pollution- water, land, air and sound pollution. The problem of pollution is not confined to any part of the globe. India is still a developing country; it is not free from pollution. To protect the environment, Environmental education is inevitable – education for the environment, education about the environment and education through the environment.

In India, environmental education is introduced at various levels of education to improve the quality of environment by creating awareness among students, who are the decision makers of future. As the teachers play a vital role in national development, they must possess adequate awareness towards nature first; after that they can inculcate the require awareness, attitude and skills in students to take care of the environment.

The National Policy on Education 1986(NPE) states that protection of the environment is a value which along with certain other values must form an integral part of curriculum at all stages of education. This is because, in recent years the world scenario has changed considerably, the world community is encountering multitude of problems pertaining to natural eco system and human world as such environmental education is considered in totality. It should be an integral part of the education process and should centred on practical problems and be an inter disciplinary character. It is the educational process dealing with man's relationship with his natural and manmade surroundings and includes the relations of population, pollution, resources allocation, depletion, conservation, transportation, technology, energy and urban and rural planning to the total biosphere. It is a way of helping individuals and societies to resolve fundamental issues relating to the current and future use of the world's resources. It promotes the need for personal initiatives and social participation to achieve sustainability. It empowers individuals to maintain and restore the earth's natural systems and fosters support for the well being of future generations by promoting sustainable lifestyle. It helps the individual to know and recognize the interactions between what is natural and social in their environment and act in that environment.

The aim of education is to impart knowledge, skills and values through different approaches or strategies either in formal or non-formal mode. Education assist us to be conscious of current and futuristic problems as well as how to overcome those challenges without much loss of money, energy and time. The human development not only depends on education but also awareness and proper utilization of natural resources. In order to safeguard the environment, an individual needs to be aware of his/her environment and also should have a positive attitude towards it. Environmental Education is a process which creates awareness about environmental issues, involves us in problem solving and enables us to protect the environment. This type of education plays a vital role in bringing awareness to use resources properly, protecting the environment as well as to sustain the natural assets.

The present study aims at finding out the level of environmental awareness of student-teachers of District Institute of Education and Training(DIET), Mamit who choose teaching profession for their career. The District Institute of Education and Training(DIET) is located at Mamit town which is the district headquarters of Mamit district. Mamit district is one of the eleven districts of Mizoram state in India. The total population according to 2011 census is 86,364. The literacy rate is 84.93%(census 2011). The district is bound on the north by Hailakandi district of Assam state, on the west by North Tripura state and Bangladesh, on the south by Lunglei district and on the east by kolasib and Aizawl district. The district occupies an area of $3,025.75km^2$. Mamit town is the administrative headquarters of the district. The district has 4 rural development(R.D.) blocks and 3 legislative assembly constituencies.

Mamit town is located at $23.93^{\circ}N$ $92.48^{\circ}E$. As of 2011 India census, Mamit had a population of 7884, in which 4074 are male while 3810 are female. Mamit has an average literacy of 95.49%: male literacy is 95.86%, and female literacy is 94.92%. In Mamit, 15% of the population is under 6 years of age. The population comprises of Mizo, Reang(Bru), Chakma and other backward classes. The distance between Mamit and Aizawl is 89 km and is connected with services of Bus, Sumo etc. There is only one degree college in Mamit town under Mizoram University.

Mamit town has one government higher secondary school, three government high schools, four government middle schools, seven government primary schools, two church run comprehensive schools (ie. elementary and secondary) and one purely private run comprehensive schools (elementary cum secondary).

District Institute of Education and Training (DIET) has to primarily function as the resources centre at the district level for implementation of programs for education and training of teachers for the elementary stage of education. DIETs help in coordinating and implementing government policies at district level. Every DIET has to perform three types of functions as envisaged in the programme of action (NPE, 1986). These are as follows:

- 1) Training and orientation of elementary school teachers and headmasters, head of school complexes & education officers at block levels, instructors & supervisors of non-formal and adult education centres, members of district board of education, village education committees, community leaders, youth & other volunteers and resource persons who will conduct suitable programmes for the target groups.
- 2) Academic and resource support to the elementary and education system in the district by a) extension activities and interaction with the field, b) provision of services of a resource and learning centres for teachers and instructors, c) development of locally relevant materials, teaching aids, evaluation tools, etc. and d) serving as an evaluation centre for elementary schools.
- 3) Action research and experimentation.

DIET cannot, therefore, function in isolation and must play the role of supplementing and complementing the roles of other organization.

DIET, Mamit was established in the year 2005 to be the first and single teachers' training institute in Mamit district. It was upgraded to be a full fledged DIET in the year 2013. Provision of pre-service and in-service teachers training is the major function of the DIET, Mamit. DIET, Mamit received recognition from National Council of Teacher Education (NCTE) in the year 2016 to be able to run Diploma in Elementary Education (D.El.Ed.) course under pre service teachers

education programme. The training and orientation programmes of DIET, Mamit to the district elementary school teachers and headmasters is very beneficial for the district elementary education, such kind of programmes revive the teachers to become a better facilitators. DIET, Mamit also provides academic and resource support to the elementary education in the district in various ways. DIET, Mamit also conduct action researches systematically aiming at improvement of the district elementary education. The intake capacity of DIET, Mamit for D.El.Ed programme is 100(ie. Two units = 50+50).

1.3 Rationale of the Study and Research Questions

Clean environment is the one of the most important parts of our lifestyle. Environment affects the health, particularly more of children. So, there was an urgent need to develop more environmental awareness among the students of all levels in future. The environmental awareness will encourage people to use energy and water more efficiently and recycle household waste. Here, teachers' training institutes have a particular important role in raising the level of environmental awareness both directly and indirectly at large. Hence, it is felt that there is a need to investigate the environmental awareness level of student teachers of DIET, Mamit.

Environmental awareness has become inevitable in the context of increasing threat of environmental degradation, pollution and consequently a deteriorating quality of life. The problem is global but its effects are more disastrous for the developing countries which are poorly equipped with technology and techniques of managing environment and also low level of education. It is imperative therefore to protect and conserve environment while making judicious and rational use of the resources rather than mindlessly exploiting the environment without thinking about the future. Part of the problem however arises from ignorance about the environment and the needs for its protection. It is this dimension of the problem that can be tackled through education. Educational institutions have a particularly important role in raising the level of awareness about environment not only among the students but also among the people at large. Here, the prospective teachers can contribute a lot

towards environmental awareness. So, it is essential to investigate the environmental awareness level of the student teachers.

No organism can live alone in this world. Hence most organisms live together in a community, called 'biological community'. The success of this community depends upon its interrelation and interaction with the physical environment such air, water, light, heat and soil. Man is the only organism who can control and influence the environment according to his own needs. This has been possible due to human ingenuity translated into scientific discoveries and inventions. However all actions have not met with desirable results. Willingly or not, man has crossed the limits while intervening into the nature and has often broken the laws of nature, causing harm to nature and to himself. Thus, over population, contributed in various ways the general deterioration of the environment. The situation is such that today millions of people are without the basic human needs of food, shelters, cloth, health, education and employment. To save human society from further disaster, environmental awareness is necessary. So, it is essential to have a good environmental awareness for the prospective teachers as they can play a vital role to pass on the awareness.

It is a well-known fact that the world is currently facing various global problems like global warming, greenhouse effect, acid rain, deforestation, overpopulation and different types of pollutions. These are not only problems at global level, but everyday challenges and experiences at national, regional and local levels also. In this situation, environmental awareness is greatly needed. Environmental awareness has implicitly great importance in the present time since our lives depend to a large measure on our response to emerging problems related to the environment. The Supreme Court had to direct UGC(1991) to prescribe courses on environment at all levels of higher education and the NCERT(2003) to prepare a model syllabus for Environmental Education. It, then, directed all the state governments to execute Environmental Education at all stage of education. The National Policy on Education(1986) stated that protection of environment is a value, which must form integral part of curriculum at all stages of education. Louis Vernal(2006) indicated that the Ministry of Environment and Forest has formulated the policy to create awareness among all sections of society through national

environment awareness campaigns, setting up of paryavaran vahinis, eco clubs, green clubs etc.

Over-exploitation of natural resources and pollution of environment are corroding the vital life support systems on which all life depends for its subsistence. So, natural systems degenerate, it will be difficult to maintain productivity of our agriculture and obtain necessities of our day-to-day life. Chemically altered environment shall make our lives more and more difficult. This is not healthy sign. We have to reverse the damaging trends. The future of entire humanity is at stake.

Much improvement in environmental quality can be achieved by individual life style decisions or by the action of local bodies. For example, couples may decide to have only two children and thus help in population control. Individual can use energy more efficiently. They can use a bicycle instead of a car thus saving a little petrol. The few drops saved by everyone shall make a huge quantity – a little less carbon dioxide shall go into the atmospheric air. Thus few grains saved by each of us shall add up to make surpluses, which will lower the prices enabling the poorest to afford it.

Samah & Talukdar(2006) outlined the consequences of deforestation: i) It threatens the existence of many wildlife species due to destruction of their natural habitate. ii) Scarcity of plants, timber, fuel etc. iii) Problems of soil erosion, loss of soil fertility and often leads to landslides. iv) Adverse changes in climate conditions by affecting hydrological cycle and wind. v) Increase changes of floods and droughts.

Environment educators strive to inculcate a positive respectful environment attitude and a responsible behavior towards environment through integrated curricular approach. Several research studies revealed that teachers with positive attitude towards environment can contribute to environmental education and their learners effectively. Action-oriented environmental education programmes are found to be more effective in contributing positive attitude among senior secondary students. In this connection, it is essential to possess a fair amount of environmental awareness to be a successful and ideal teachers.

In view of the points mentioned above, we can state with a high degree of accuracy that it is from education that we can make effective response to the present environmental problems. In fact, education is universally considered to be an effective means to bring forth positive impacts in the society. The environmental awareness level of teachers can greatly determine the attitude of the people to whom they can impart their knowledge and awareness on the issues of environment. Hence, it is essential to investigate the environmental awareness level of the student teachers of DIET, Mamit as they are the prospective teachers. Therefore, the present study is taken up to assess the level of environmental awareness among teacher trainees. Taking cognizance of the role of teachers in the society and in resolution of social issues like environmental degradation, researcher has the following questions to be answered through a systematic procedure:-

1. What is status of environmental awareness among student teachers of DIET, Mamit?
2. How much opportunities are provided to student teachers to acquire the knowledge about environment?

1.4 Statement of the Problem

The statement of the present problem under study is stated as follows:

Environmental Awareness among Student Teachers of District Institute of Education
and Training, Mamit

1.5 Operational Definitions of Key Terms

The operational definitions of the terms used in proposed study are as follows:-

- (I) Environment: Environment indicates the surroundings of an object. It denotes all the conditions, circumstances and influences surrounding and affecting an organism or group of organisms.

(II) Awareness: Awareness is the characteristic quality of man to understand and realize the things and their operations around him.

(III) Student Teachers: The term includes all the students of Diploma in Elementary Education Programme running at DIET, Mamit.

1.6 Objectives of the Study

- i. To find out the level of environmental awareness of student teachers of District Institute of Education and Training, Mamit.
- ii. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to their gender(Male & Female).
- iii. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to their Academic discipline(Science & Non-science).
- iv. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to their Inhabitation(Rural& Urban).
- v. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to occupation of their parents.
- vi. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to education of their parents.
- vii. To evaluate the curriculum of student teachers' training programme(D.El.Ed.) to find out the content related to environmental issues.

1.7 Null hypotheses of the Study

- i. There is no significant difference with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with regards to their gender.
- ii. There is no significant difference with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with regards to their academic discipline(Science & Non-science).
- iii. There is no significant difference with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with regards to their inhabitation(Rural and urban).

CHAPTER - II

REVIEW OF RELATED LITERATURE

A review of related literature is an evaluative report of information found in the literature related to the selected area of study, that is an essential part of the project because; it covers all previous research done on the topic and sets the platform on which the current research is based. Several researches have been conducted in the area of this study. While some of these studies have focused on the attitude, some have focused on the effect and still others on the relationship between certain factors in the environment. However, awareness about the environment plays a major role in most studies. The following are the some works which are the most relevant to this study.

Abraham and Arjunan(2005) conducted a study on environmental attitude and pro-environmental behaviour among secondary school children. The main objectives of the study was to find out the differential effect of gender and locale on environmental attitude and pro-environmental behavior of secondary school children. Their findings showed that secondary school students did not have a high level environmental interest. A differential effect of gender and locale were observed in their environmental interest. The boys in urban were found to have more interest in environmental matters compared to their rural counterparts. A high level positive and significant correlation was found to exist between environmental attitudes in all the groups studied.

Vernal and Louise(2006) conducted a study on pedagogy in environmental education. The findings stated that children from their earlier years should be oriented towards learning from the surroundings using the local environment as a medium for inquiry or discovery as a source of materials for realistic activities. The study further pointed out that in environmental education there is more stress on environmental actions and skills.

Raju(2007) studied the environmental ethics of higher secondary students to find out whether there is any significant difference in the environmental ethics of male and female higher secondary students, and whether there is any significant

difference in the environmental ethics of the students studying under different types of school management and also whether there is any significant difference in the environmental ethics of the students of rural and urban areas. Normative survey and cluster sampling technique was adopted to collect data. The findings stated that environmental ethics of higher secondary school students of Cuddalore district was high. Girls students had more environmental ethics when compared to boys. The communities of students did not have any influence on their environmental ethics. The type of school management where they happened to study did not have any influence on their environmental ethics. Rural higher secondary students had more environmental ethics when compared to their urban counterparts.

Maryam Larijani(2007) conducted a study on Teachers as ethical architects of environmental education. The main objectives of the study was to find out the role of teachers as an ethical architects of environmental education. The study found out the significance of the role of teachers and students in building a strong and eco-friendly generation for future. The study also emphasized the role of teachers as a sculptors of the society in re-shaping and building a strong and everlasting, peaceful harmony in life. In order to play a significant role as a an ethical architect, the study suggested that the teachers should actively participate in workshops and seminars that help in finding appropriate uses for advanced information and communication technologies for teaching about sustainability. The study also revealed that the teachers can initiate or replicate successful attempts to make the classroom serve as a model of sustainability for the community.

Kumar, Shiva, Patil and Mangala(2007) carried out a study on the impact of the environment education course on the post graduate students' attitudes towards environmental pollution, which has become a worldwide problem. The sample consisted of 120 post graduates students from department of psychology, Karnataka University, Dharward. The results were found on administering two tools- 1) Environmental Pollution Attitude Scale by Dr. M. Rajamanickam and 2) Personal Datasheet. Findings indicated that standard environmental education course influences the attitude level of the students towards environmental pollution and

related issues. There was no significant difference between male and female students in their attitude towards environmental pollution and related issues.

Dixit and Agarwal(2009) conducted a study on environmental awareness among prospective elementary teachers. The study used survey method aiming at assessing the environmental awareness of prospective elementary teachers. The study found that the environmental awareness of prospective teachers is in a positive direction. It was also found that there is no effect of gender and caste on the environmental awareness of prospective teachers. The result also indicated that the rural and urban prospective elementary teachers have a favorable awareness towards environment in this modern society.

Chandra and Amit Sharma(2010) conducted a study on significance of environmental education in present context. The main objectives of the study was to find out the importance of environmental education in the present context. The investigator used descriptive method in this study. The study found that teachers can play a very significant role in environmental education by inspiring the students to plant a tree on their birthday every year and by awakening and sensitizing the students through creative teaching about various issues like global warming, waste management, green chemistry, ecology, drainage system, acid rain, ozone layer depletion etc. The study also found that teachers can play a very significant role in environmental education by motivating the students to participate in NSS, NCC, SUPW, Scout & Guide and Red Cross for getting practical aspect of environmental education.

Patil(2012) conducted a study on environmental attitude of D.Ed., B.Ed. and M.Ed. student-teachers. The main objectives of the study was to find out the environmental attitude among D.Ed., B.Ed. and M.Ed. student-teachers. The investigator used descriptive method in this study and he revealed that there was no difference found in the Environmental Attitude of D.Ed. students-teachers and B.Ed. student-teachers. Difference was found in the Environmental Attitude of B.Ed. student-teachers and M.Ed. student-teachers. Difference was found in the Environmental Attitude of M.Ed. student-teachers and D.Ed. student-teachers. It was

found that the Environmental Attitude of M.Ed student-teachers is better than that of D.Ed. student-teachers.

Talawar and Kumar(2012) carried out a study on environmental ethics among higher secondary students. A Comparative Study Method was used in this study attempting to find out the environmental ethics of secondary school students studying in Pondicherry Union Territory Region. The study found that there is a significant difference between urban and rural students with respect to the Environmental Ethics and there is no significant difference between Science and Arts students with respect to the Environmental Ethics. There exists significant difference between government and private school students with respect to the environmental ethics. The study indicated that the level of environmental ethics of secondary school students is average – a significant difference between boys and girls with respect to the environmental ethics.

Lalremruati PC(2014) conducted a study on environmental education in elementary schools in Mizoram: An analytical study. The main objectives of the study was to find out the environmental awareness of the students in elementary schools. The investigator used descriptive method in this study and the findings of the study revealed that 68% of the students were placed in the average scorer group who scored between 72-97 marks. It was found that students from all the schools visited had at least a minimal knowledge concerning the environment. It was also found that environmental education had been introduced as an integral part of the school curriculum from class one. The study found that the inculcation of the subject from the early stage of class develop in the students and informed concern and sense of responsibility for environment.

Prakash(2014) conducted a study on developing environmental awareness, attitude & behaviour among students through eco-clubs. The main objectives of the study was to find out the nature and extent of environmental awareness among the senior secondary students and factors affecting it through this programme. The investigator used survey method in this study and the findings of the study revealed that 36.38% of environmental awareness may be attributed to the environmental

responsible behaviour and environmental protection attitude. It was found that Arts and Science students need to be appraised that there is no economy without ecology. The study also found that parent's occupation and income, environmental responsible behaviour are potent factors for developing environmental awareness among senior secondary students.

Mathivanan and Pazhanivelu(2015) conducted a study on involvement in environmental movements and environmental awareness among higher secondary students. The main objectives of the study were – to study the level of environmental awareness and the level of involvement in environmental movements of higher secondary schools students. Normative survey method was used in this study. The study found that the higher secondary students have high environmental awareness and high level of environmental movement. The result indicated that the male and female students do not differ significantly with respect to their environment awareness but the urban and rural students differ significantly in their environmental awareness. The result also indicated that the urban and rural higher secondary school students do not differ significantly in their involvement in environmental movement.

Eswaranand Jayaraman(2016) carried out a study on influence of environmental education implemented at middle school level with regard to knowledge and skills. The study aimed at identifying the knowledge and skills of environmental education in middle school students. The study used normative survey method. The result indicated that there is a significant difference between the boys and girls of middle schools in terms of knowledge and skills of environmental education. It was also revealed that there is a significant difference between the rural and urban middle school students in terms of knowledge and skills of environmental education.

Vanguri(2017), conducted a study on awareness and attitude of student-teachers towards environmental education. The main objectives of the study were 1) to find out the awareness of students-teachers towards the Environmental Education; and ii) to assess the attitude of student-teachers towards the Environmental Education. Descriptive Method was used in this study. The study found that majority

of the student-teachers have been aware of environmental education and believe it as an important subject. It was also found that 52% of the student-Teachers opined that the present education system had not been taking care of environmental education.

Conclusion

A multitude of research work has indeed been accomplished with regards to environmental awareness. This is not surprising as environmental awareness has become a growing concern for people all over the world. In the light of urgent call for a more humane attitude towards the environment and the need to inculcate this from early age, the investigator considered this topic not only worthwhile but necessary so that the stake holders may successfully take part in the march for environmental safe. Besides this, the investigator also considered the collected data in this study would make up an important addition to the already existing data in relation to environmental awareness. Even though, a multitude of research works has been done in relation to environmental awareness, the present study 'environmental awareness among student teachers of District Institute of Education and Training, Mamit is the first and the only one research work for investigating the the level of environmental awareness of the student teachers of the Institute and also in the geographical location of Mizoram state.

CHAPTER - III

METHODOLOGY OF THE STUDY

Methodology of a study is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. The methodology is the general research strategy that outlines the way in which research is to be undertaken and, among other things, identifies the methods to be used in it. The significance of methodology of the study lies in solving various planning and operational problems.

3.1 Method of Study

The study is a type of institutional case study survey. Case study is an intensive study of a case which may be an individual, an institutional, a system, a community, an organization, an event, or even the entire culture. Besides content analysis technique was followed to evaluate the curriculum. Content analysis is a technique for making inferences by systematically and objectively identifying specified characteristics of message(Dipti P. Bhatt 2015).

3.2 Population and Sample: All the student teachers of District Institute of Education and Training, Mamit of 2018-2019 and 2019-2020 academic sessions were included in the study. They were 159 in number. There were 52 male respondents 107 female respondents.

3.3 Tools and Techniques Used:

- i) **Questionnaire:** For the present study, the investigator used Environmental Awareness Scale developed by Dr. Haseen Taj, Department of Education, Bangalore University.
- ii) **Interview:** The investigator prepared interview schedule and administered the interview for gathering data from the faculty members of the institute.

iii) Content Analysis of D.El.Ed curriculum: The researcher analysed the D.El.Ed. curriculum by following content analysis technique. Particularly, the compulsory subject in D.El.Ed. course, 'Pedagogy of Environmental Studies' was well analysed to let out its importance on environmental awareness for the student teachers.

3.4 Description of tools:

i) **Questionnaire:** The researcher used Environmental awareness scale prepared by Dr. Haseen Taj, Department of Education, Bangalore University. The questionnaire consists of 3 sections. The first section consists of 66 statements, the second section comprises 35 statements while the third section comprises 16 items. A test score is said to be reliable when the scores are stable and trustworthy. Stability and trustworthiness depend upon the degree to which the score is an index of the true ability or is free of chance error. Scoring system is very simple. The correct answer is awarded '1' score and incorrect answer is scored as '0'. The validity of the test depends upon the fidelity with which it measures, what it purports to measure. A test is valid when the performance which it measures corresponds to the same performance as otherwise independently defined. Validity is a relative term, and a test can be valid for a particular purpose or in a particular situation and, not in all situations.

Environmental awareness scale is given to the student teachers of District Institute of Education and training, Mamit, in which there were a total number of 159 student teachers. The investigator divided the scores into three groups: those scoring low, average and high. Student teachers who scored below 71 marks were put in the group of low scorer. Student teachers who scored between 72 – 97 marks were put in the group of average scorer and student teachers who scored above 98 marks were put in the group of high scorer.

ii) **Interview Schedule:** The investigator prepared interview schedule and administered the interview. The researchers prepared interview questions to avoid

bias and distortion. The interview scheduled was prepared only for faculty of District Institute of Education and Training, Mamit with the help of Principal and other faculty members. The interview questions were designed to reveal the actual level of the faculties on environmental awareness. The interview schedule also aimed at realizing the environmental activities performed by the institute within a specific period of time. The initial draft copy of the interview questions were prepared in consultation with the opinion of the faculty members of DIET, Mamit. The final copy of the interview questions contained 6 questions related to environmental awareness. Since the investigator spend some time with the respondents, he can understand their feelings and attitudes more clearly. It was a kind of participant observation cum interview schedule.

iii) **Content Analysis of D.El.Ed curriculum:** The researcher analyse the D.El.Ed. curriculum by following content analysis technique. Particularly, the compulsory subject in D.El.Ed. course, 'Pedagogy of Environmental Studies' was well analysed to let out its importance on environmental awareness for the student teachers. After carefull reading the lines, he investigator analysed the hidden meaning significant for the object of the study.

3.5 Procedure of Data Collection: Data for this study were collected through administering questionnaire and interview by the researcher himself. Researcher spent extended time around eighteen months at the institution.

3.6 Data Analysis/Statistical Techniques Used: The collected data were classified, organized, analyzed and interpreted systematically by using descriptive and inferential statistics like percentage and t-test.

CHAPTER - IV

ANALYSIS AND INTERPRETATION OF DATA

Analysis were done in accordance with the objective of the present study. All respondents were grouped as males and females, science and non-science, rural and urban group. They were also classified into four groups based on occupation of their parents viz. business group, manual work group, govt. servant group and others groups. Again they were classified into four groups based on educational level of their parents viz. under matric group, post matric group, graduate group and post graduate group. In order to find out the environmental awareness of the student teachers, percentage was calculated. In order to compare the environmental awareness of various groups, mean and standard deviation was calculated. The t-value was then established in order to ascertain the difference between the groups.

4.1 To study the environmental awareness of the student teachers of the District Institute of Education and Training, Mamit.

Table-4.1: Environmental awareness of student teachers of District Institute of Education and training, Mamit.

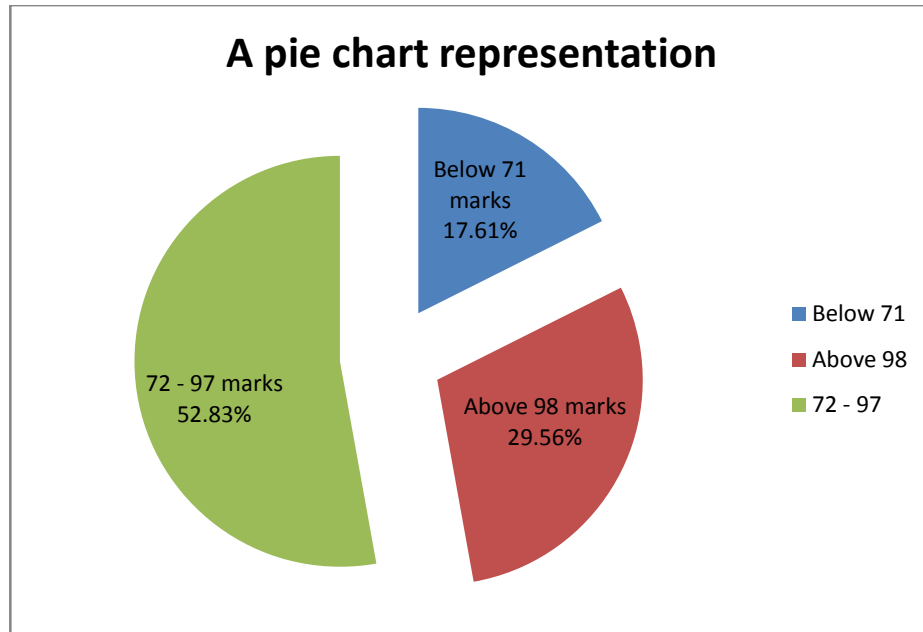
Score category (Total marks=117)	Number of students	Percentage of students
Below 71 marks	28	17.61%
Between 72 – 97 marks	84	52.83%
Above 98 marks	47	29.56%
Total	159	100%

Source: Field Study

Environmental Awareness Scale was given to the student teachers of DIET, Mamit, they were 159 in number consisting 52 male and 107 female student teachers. The investigator divided the scores into three groups those scoring low, average and high. Student teachers who scored below 71 marks were put in the group of low scorer and student teacher who scored between 72-97 marks were put in the group of average scorer and again the student teacher who scored above 98 marks were put in the group of high scorer.

The above table 4.1 revealed that 17.61% of the student teachers scored below 71 marks and were placed in the low scorer group. And 52.83% of the student teachers scored between 72 – 97 marks and they were the average scorer group while the other 29.56% of the student teachers from the high scorer group scored above 98 marks. This shows that student teachers of District Institute of Education and Training, Mamit had at least a minimal knowledge about the environment. This is not surprising that since environmental education had been introduced as an integral part of the school curriculum from class one(Lalremruati, 2014). Besides this, pedagogy of Environmental Studies is included in the curriculum of Diploma in Elementary Education(D.El.Ed). Learning environmental education from the beginning of the school helps the students in getting knowledge about the environment. Earlier studies of the subject proved helpful for the students in presenting their knowledge about the environment. It develops in the students basic understanding of the environment and its interrelationship with men and develops in them the skills to solve environmental problems. Not only the environmental education they received right from class – I to Class – XII or Graduation, the D.El.Ed curriculum is also very useful for the student teachers to gain environmental awareness.

Figure – 4.1. A chart showing the variation in environmental awareness among the student teachers .



In figure – 4.1, the blue color reflected that 17.61% of the student teachers scored below 71 marks, the red color shows that 29.56% of them scored above 98 marks and the green color reveals that 52.83% of the student teachers scored between 72 – 97 marks.

Keeping in mind the importance of the professional course of teacher education and its future implementations for elementary education, it is a matter of future inquiry that the 17.61% (28 in number) prospective teachers were scoring lower than average. Even though 71 marks is not substandard, yet the prospective teachers are expected to score higher than 71 marks in order to become an ideal teachers in the field of environmental awareness and activities. Based on the marks scored from the environmental awareness scale, the investigator revealed that 17 female student teachers scored below 71 marks while less number of male student teachers(11 in number) scored the same. All of the student teachers who scored below 71 marks were from non science group while none of the student teachers from science group scored below 71. In area wise, 23 student teachers who scored below 71 marks were from rural areas while only 5 of them were from urban areas.

4.2 To find out the variation with respect to environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their gender(male and female).

Table-4.2:Variation in environmental awareness among male and female of the student teachers.

Category	N	Mean	Standard deviation	Mean difference	df	t-value	Level of significance
Male student teachers	52	83.67	15.37	3.67	157	1.46	Not significant
Female student teachers	107	87.34	14.57				

Source: Field study

The above table – 4.2 indicated a comparative statistics on the significance of the level of difference on environmental awareness between male and female student teachers. From the total number of male, we can find out the mean of male was 83.67 in which their standard deviation was 15.37 whereas on the other hand there were 107 female student teachers in which their mean was 87.34 and the standard deviation was 14.57 and this result that the mean difference of male and female was 3.67. The t-value for the significance of difference between the mean and the standard deviation with degree of freedom(df) = 157 was 1.46. As the required t-value to determine the significance of difference at 0.01 level was 2.61 and 0.05 level was 1.98. In other words, the value of t to be significant for df 157 at 0.01 level must be 2.61 or more.

The finding of the t-value shows that the value of t obtained was 1.46, which was not significant at 0.01 level and this is also not significant at 0.05 level. Hence, the null hypothesis -1 ‘There is no significant difference in environmental awareness of the student teachers of District Institute of Education and training, Mamit with regards to their gender’ was accepted.

4.3 To find out the variation with respect to environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their academic discipline(Science and Non-science)

Table – 4.3:Variation of the student teachers in environmental awareness with respect to their academic discipline.

Educational variable	N	M	Standard deviation	Mean difference	df	t-value	Level of Significance
Science	16	92.76	8.27	8.3	157	1.92	Not significant
Non-Science	143	84.46	17.01				

df = degree of freedom

From table – 4.3, it was clearly seen that the t-value was not significant at 0.05 levels of significance. Therefore it may be said that the above said groups do not differ significantly in their environmental awareness. The calculated mean and standard deviation values of science group were 92.76 and 8.27 respectively while the values of mean and standard deviation of non-science group were 84.46 and 17.01 respectively. The mean difference was 8.3. Thus, the mean scored of the student teachers from science group was higher considerably and it can be said that they have better environmental awareness than that of non-science group. Therefore, the null hypothesis- 2 ‘There is no significant difference in environmental awareness of student teachers of District Institute of Education and Training, Mamit with regards to their academic discipline(Science and Non-science)’ was accepted.

4.4 To find out the variation of the student teachers of District Institute of Education and Training, Mamit in environmental awareness with reference to their inhabitation(Rural and Urban)

Table – 4.4: Difference in environmental awareness among student teachers with respect to inhabitation.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Rural	106	83.05	15.00	9.27	157	3.86	Significant
Urban	53	92.32	12.73				

*Significant at 0.05 & 0.01

Table – 4.4 revealed that the obtained t-value 3.86 was greater than the table values 1.98 at 0.05 level and 2.61 at 0.01 levels. So, it was found that the t-value was significant at 0.01 levels for environmental awareness. So, it may be said that the above said groups differ significantly in their environmental awareness. The calculated mean and standard deviation values of rural group were 83.05 and 15.00 respectively while the values of mean and standard deviation of urban group were 92.32 and 12.73 respectively. The mean difference was 1.59. Therefore, the null hypothesis- 3 ‘There is no significant difference in environmental awareness of student teachers of District Institute of Education and Training, Mamit with regards to their inhabitation(rural and urban)’ was rejected.

The mean scored of the urban group was higher than rural group, which shows that the urban group have more environmental awareness. Various studies in this case proved that student teachers from urban areas were more enthusiastic in participating in environmental awareness campaign programme. It was also said that the student teachers gained environmental awareness and knowledge through environmental protection activities organized by government and non-government organizations.

4.5 To find out the variation of student teachers of District Institute of Education and Training, Mamit with respect to environmental awareness within parents' occupational variables. (Here, the student teachers were classified into four groups based on the occupation of their respective parents viz. business, govt. servant, manual works and others group. Here, 'others group' implies any other occupation other than business, govt. servant and manual work. Hint: Student teachers under business group implies the occupation of their parents is business.)

Table – 4.5 :Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Business	33	90.79	12.71	7.65	59	2.11	Significant at 0.05
Manual work	28	83.14	15.60				

Table – 4.5 revealed that t-value was significant at 0.05 levels of significance. Therefore it may be said that the student teacher from business group do differ significantly in their environmental awareness. The calculated mean and standard deviation values of business group were 90.79 and 12.71 respectively while the values of mean and standard deviation of manual work group are 83.14 and 15.60 respectively. The mean difference was 7.65. In other words, the the mean scored by the business group shows that they have better environmental awareness.

Table – 4.6: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Business	33	90.79	12.71	3.55	82	1.12	Not significant
Govt. Servant	51	87.24	14.98				

From table-4.6, it was clearly seen that the t-value was not significant at 0.05 levels of significance. The mean value of business group was found to be 90.79, which was higher than the scores of Govt. servant group. The calculated mean and standard deviation values of business group are 90.79 and 12.71 respectively while the values of mean and standard deviation of Govt. servant group were 87.24 and 14.98 respectively. The mean difference was 3.55. This shows a considerable increase in environmental awareness among business group.

Table – 4.7: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Business	33	90.79	12.71	7.47	78	2.32	Significant at 0.05
Others	47	83.32	15.13				

Table – 4.7 indicated that t-value was significant at 0.05 levels of significance. Therefore it may be said that business group do differ significantly in their environmental awareness. It was found that the calculated mean and standard deviation values of business group were 90.79 and 12.71 respectively while the values of mean and standard deviation of others group are 83.32 and 15.13 respectively. The mean difference was 7.47.

Table – 4.8: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Manual work	28	83.14	15.60	4.1	77	1.15	Not significant
Govt. Servant	51	87.24	14.98				

From table – 4.8, it was cleared that the t-value was not significant at 0.05 and 0.01 levels of significance. The mean value of Govt. servant group was found to be 87.24, which is higher than the scores of manual work group with the mean difference of 4.1, this shows a considerable increase in environmental awareness among Govt. servant group.

Table – 4.9: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Manual work	28	83.14	15.60	0.18	73	0.05	Not significant
Others	47	83.32	15.13				

From table- 4.9, it was cleared that the t-value was not significant at 0.05 and 0.01 levels of significance. The mean value of the two groups are almost same. The mean value of manual work group was 83.14 while the mean value of others group is 83.32. Others group here meant any other occupation of parents other than business,

govt. servant and manual work. The mean difference was only 0.18. This shows that there was no considerable difference in environmental awareness between the two groups.

Table – 4.10: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Govt. Servant	51	87.24	14.98	3.92	96	1.29	Not significant
Others	47	83.32	15.13				

Table – 4.10 revealed that the t-value was not significant at 0.05 and 0.01 levels of significance. Meanwhile, the mean value of Govt. servant group was found to be 82.24, which is higher than the scores of others group with the mean difference of 3.92. This shows a Govt. servant group have better environmental awareness than others group.

It can be said from the above analysis and interpretation of data that the business group are the best group in environmental awareness. The mean value scored by business group is 90.79, which is the highest mean value among the groups. No higher mean value is scored by the other groups other than business group. To conclude, no significant difference was found between more pairs of parents' occupational variables while significant difference was found between only two pairs of parents' occupational variables with respect to environmental awareness among student teachers of DIET, Mamit .

4.6 To find out the variation of student teachers of District Institute of Education and Training, Mamit in environmental awareness with reference to the educational level of their parents. (Here, the student teachers were classified into four groups based on the level of education of their respective parents viz. under matric, post matric, graduate and post graduate group. The word ‘matric’ here means class ten. Hint: The student teacher under graduate group implies the educational level of his/her parents is graduate.)

Table-4.11: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Under matric	93	84.81	15.59	1.70	144	0.64	Not significant
Post matric	53	86.50	14.63				

Table- 4.11 clearly indicated that the t-value was not significant at 0.05 and 0.01 levels of significance. The mean value of under matric group was 84.81 while the mean value of post matric group was 86.50. The mean difference was only 1.70.

Table- 4.12: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Under matric	93	84.81	15.59	7.94	103	1.72	Significant at 0.01
Graduate	12	92.75	8.98				

Table – 4.12 revealed that t-value was significant at 0.05 and 0.01 levels of significance. Therefore, it may be said that under matric group do differ significantly to graduate group in their environmental awareness. The calculated mean and standard deviation values of under matric group were 84.81 and 15.59 respectively while the values of mean and standard deviation of graduate group were 92.75 and 18.98 respectively. The mean difference was 7.94.

Table-4.13: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Under matric	93	84.81	15.59	5.70	93	0.51	Not significant
Post graduate	2	90.5	9.5				

Table – 4.13 revealed that t-value was not significant at 0.05 levels of significance. Therefore it may be said that under matric group do not differ significantly to post graduate group in their environmental awareness. The calculated mean and standard deviation values of under matric group were 84.81 and 15.59 respectively while the values of mean and standard deviation of post graduate group were 90.5 and 9.5 respectively. The mean difference was 5.70.

Table-4.14: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Post matric	53	86.50	14.63	6.25	63	1.42	Not significant
Graduate	12	92.75	8.98				

Table – 4.14 indicated that t-value was not significant at 0.05 and 0.01 levels of significance. Therefore it may be said that post matric group do not differ significantly to graduate group in their environmental awareness. The calculated mean and standard deviation values of post matric group were 86.50 and 14.63 respectively while the values of mean and standard deviation of graduate group were 92.75 and 8.98 respectively. The mean difference was 6.25. The mean value of post graduate group is higher than that of post matric group, this shows that the graduate group have better awareness in the field of environment, but the difference is not statistically significant.

Table-4.15: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Post matric	53	86.50	14.63	4	53	0.38	Not significant
Post graduate	2	90.5	9.5				

Table – 4.15 revealed that t-value was not significant at 0.05 and 0.01 levels of significance. Therefore it can be said that post matric group do not differ significantly to post graduate group in their environmental awareness. The calculated mean and standard deviation values of post matric group were 86.50 and 14.63 respectively while the values of mean and standard deviation of post graduate group were 90.5 and 9.5 respectively. The mean difference was 4. The mean value of post graduate group was higher than that of post matric group, this shows that the post graduate group have better awareness than that of post matric group in the field of environment.

Table-4.16: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Graduate	12	92.75	8.98	2.25	12	0.32	Not significant
Post graduate	2	90.5	9.5				

Table – 4.16 revealed that t-value was not significant at 0.05 and 0.01 levels of significance. Therefore it can be said that graduate group do not differ significantly to post graduate in their environmental awareness. The calculated mean and standard deviation values of graduate group were 92.75 and 8.98 respectively while the values of mean and standard deviation of post graduate group were 90.5 and 9.5 respectively. The mean difference was 2.25. The mean value of graduate group was higher than that of post graduate group, this shows that the graduate group have better awareness than that of post graduate group in the field of environment.

It is cleared from the above data analysis and interpretation that the mean values of post matric group was higher than the mean value of under matric group, this shows a considerable increase in environmental awareness among post matric group. Graduate group have better environmental awareness than that of under matric group whereas post graduate group have better environmental awareness than

that of under matric group. Graduate group have better awareness than post matric group in the field of environment while post graduate group have better awareness than that of post matric group in the field of environment. Graduate group have better awareness than that of post graduate group in the field of environment. Therefore, to conclude, no significant difference was found between almost all the pairs of parents' educational variables/levels while significant difference was found between only one pair of mothers' educational variables/levels among student teachers of DIET, Mamit with respect to environmental awareness.

4.7 Analysis of the curriculum of Diploma in Elementary Education(D.El.Ed).

The D.El.Ed curriculum covers a vast area, the course was divided into four semesters. The following are the semester break-up and curriculum structure:

Table – 4.17:Semester Break-up and Curriculum Structure

Sl.No.	Course Title	Suggested periods per week	Maximum marks
I Semester	Theory		
1.	Childhood and the Development of Children	4-5	100
2.	Contemporary Indian Society	4-5	100
3.	Education, Society, Curriculum and Learner	4-5	100
4.	Cognition, Learning and the Socio-Cultural Context	4-5	100
5.	Proficiency in English	4-5	50
		Total marks	450
II Semester	Theory		
1.	Towards Self-Understanding and Evolving an Educational Vision I	2-3	50
2.	Pedagogy across the Curriculum	2-3	50
3.	Mathematics Education for the Primary School Child	4-5	100
4.	Proficiency in Hindi	2-3	50
	Practicum		
5.	Work and Education	2-3	50

6.	Children's Physical and Emotional Health, School Health and Education	4-5	100
	Pre Internship : 2 weeks		50
III Semester	Theory		
1.	<i>Pedagogy of Environmental Studies</i>	4-5	100
2.	Pedagogy of Mizo	4-5	100
3.	Towards Self-Understanding and Evolving an Educational Vision II	2-3	50
4.	Understanding Language, Early Literacy and Language Education	4-5	100
5.	Diversity, Gender and Inclusive Education	4-5	100
		Total Marks	450
IV Semester	Theory		
1.	School Culture, Leadership and Change	4-5	100
2.	Optional Course(Any One) i) Pedagogy of english language ii) Pedagogy of science iii) Pedagogy of social science iv) Pedagogy of mathematics	4-5	100
	Practicum		
3.	Creative drama, fine arts and education	2-3	50
4.	School internship : 16 weeks		200
		Grand total	1800

It was clearly revealed from the above programme structure that no other Semester deals environmental related subject other than the III Semester. 'Pedagogy of Environmental Studies' is included in the third Semester course. Meanwhile, 'Pedagogy of Environmental Studies' is compulsory subject for all. It should be noted that this course is not on environmental studies, but it is about how to teach environmental studies. This assumed that whosoever is admitted to the programme is well versed in the content domain of environmental studies. Analysis of Pedagogy of Environmental Studies in relation to environmental awareness is given below:

Table – 4.18: Analysis of Pedagogy of Environmental Studies

Unit of Study

	Unit 1: Concept of Environmental Studies
1.	Scope of EVS as a curricular area at the primary level
2.	Curriculum organization: a) EVS as an integral area of study that draws upon understanding from Science and Social science b) EVS as EVS(Science) and EVS (Social Science)
	Unit 2: Understanding Children’s Ideas
1.	Perspectives in EVS learning – Piaget, Vygotsky, Bruner and Ausubel
2.	Research on Children’s ideas – Preconceptions, Alternative conceptions.
3.	Implications of understanding children’s ideas for classroom transactions.
	Unit 3: Classroom Transactions and Assessment
1.	Ways of conducting enquiry: observation, activities, discussion and small group work, field visits, project, survey, experience etc.
2.	Process skills in EVS <i>Student teachers</i> organize simple activities for children like experiments to see what floats and what sinks in water, visit to nearby clinic, pond, stable, market, grouping flowers, seeds, leaves, analysis of newspaper reports by children. This will give them a chance to understand how children engage with ideas, make linkage, classify, analyse kinds of questions and reporting assessment for further learning.
3.	Different ways of assessment and reporting assessment using children’s photographs, drawing, narratives, children’s discussion etc. while teaching in school. They prepare students’ portfolios and report children’s progress on various indicators such as expression, concern for justice, equality etc.
	Unit 4: Planning for Teaching
1.	Concept maps and thematic web charts
2.	Evolving a unit plan framework
3.	Resource pool of materials
4.	Reflecting on classroom practices
	Unit 5: Understanding of Textbook and Pedagogy
1.	Content, approaches and methods of teaching EVS – Interactive and participatory methods, teacher as facilitator.
2.	Themes, structure of the unit, nature of exercises and its implications.
3.	Indicators of Learning.

The course of study aimed at preparing teachers to understand the philosophical and epistemological basis of EVS as a composite area of study that draws upon science and social science. The content related to concepts in science and social science is embedded within the course. As student understand children’s ideas,

it is also an opportunity for the teacher educator to help them revisit and challenge their own conceptual understanding, identify misconceptions and advance towards a better understanding.

This course along with the courses in child studies and contemporary studies will help the future teachers gain a deeper understanding of the ways in which children make sense of their physical and social environment and this insight will enrich their classroom teaching and learning. This course have the following specific objectives:-

- i) To help student teachers understand the scope of EVS and examine different perspectives of curriculum organization.
- ii) To facilitate student teachers to probe children's ideas in science and social science.
- iii) To prepare student teachers to plan for and carry out classroom transaction in the light of various theoretical viewpoints of learning and children's ideas.
- iv) To prepare student teachers to assess children's learning using different modes.

From the above highlight of the D.El.Ed course especially 'Pedagogy of Environmental Studies', following the course outline, it may be said that the student teachers have a good chance to have an environmental activities like observation, field visits, visit to nearby parks etc. The student teachers are to give a chance to have activities as per the course outline such as grouping flowers, seeds, leaves etc. Drawing a picture and shooting a photograph to show the importance and beauty of environment and all other activities said above may enhance the awareness in the field of environment.

4.8 Analysis of Interview results.

An interview was conducted to 10 lecturers of District Institute of Education and Training , Mamit in relation to the environmental awareness. The questions and answers obtained from the interview were shown in the table below.

Table – 4.19: Interview questions and answers.

Sl/No	Questions which were asked to lecturers in an interview.	Answers	
		‘Yes’ In percent with number within bracket	‘No’ In percent with number within bracket
1.	Have you attended any training programme offered concerning environmental awareness?	10%(1)	90%(9)
2.	Do you have any special qualification or certificate in the field of environmental education?	00%(0)	100%(10)
3.	Is environmental studies subject included in D.El.Ed. course?	100%(10)	00%(0)
4.	Does the Institute take part in local environment campaign?	100%(10)	00%(0)
5.	Do the student teachers participate in environmental activities organized by Government or other organizations?	100%(10)	00%(0)
6.	Does the Institute offer any special activity related to environmental awareness?	100%(10)	00%(0)

From the table – 25 above, was clearly seen that only one lecturer have attended environmental awareness training programme and most of them did not

attend the said programme. The table also revealed that all of the lecturers have no special qualification in environmental education. All of the lecturers said that the environmental studies subject was included in D.El.Ed course. So also it was evident from the above table that the Institute take part in local environment campaign. It was also cleared from the above table that 100 percent of the student teachers participated in environmental activities organized by Government or other organizations. It was also known from the above table that the Institute offer special activities related to environmental awareness.

Besides the above discussion, the lecturers mentioned the following special activities related to environmental awareness which were offered and organised by the institute(Data is based on field diary):-

- i) Field trip to Phawngpui mountain(Blue mountain) during academic session of 2018-2019.
- ii) Plantation of trees on Green Mizoram day every year.
- iii) Visit to nearby river and garden collecting used plastics for cleanliness drive.
- iv) Planting trees and flowers in the DIET campus during the planting season in following the programme set by the faculty in charge of the institute.
- v) Making paper bags to replace polithyn bags.

The study has revealed that the student teachers of District Institute of Education and Training, Mamit acquired and gained environmental awareness from the school curriculums. The school syllabus and school environmental activities contributed a lot to increase their environmental awareness. It was seen from the data interpretation and analysis that almost all the student teachers of District Institute of Education and training,Mamit had at least a required knowledge about the environment while a small number of them were not well equipped with that knowledge. It was apparently cleared that the student teachers may be able to guide and teach their students properly in the field of environment. The Diploma in Elementary Education(D.El.Ed) curriculum also contributed a lot to inculcate

environmental awareness and a sense of responsibility to preserve environment as the 'Pedagogy of Environmental Studies' is the compulsory subject for all in D.El.Ed course. The Institute also offered special activities related to environmental awareness. Meanwhile, it is strongly recommended and suggested that the course of study in D.El.Ed curriculum should be enlarged to cover more environmental awareness programme to produce ideal teachers in the field of environment.

Since the most of student teachers are reflecting average awareness about environmental issues and moreover 28(17.61%) are scoring below average, this situation put a threat to the basic purpose of the course on pedagogy of environmental studies. While any course on pedagogy elements mastery in content area, here it is revealed that only 47(29.56%) out of 159 student teachers pursuing D.El.Ed. programme were showing mastery level awareness in environmental studies. Therefore, it is recommended that content on environmental issues and course of the D.El.Ed. programme should be integrated.

CHAPTER - V

MAJOR FINDINGS, DISCUSSIONS, CONCLUSIONS, RECOMMENDATION AND SUGGESTIONS FOR FURTHER RERSEARCH

5.0 Major Findings

5.1 Findings relating to the environmental awareness of the student teachers of District Institute of Education and Training, Mamit

From the analysis of data collected, it was found that 17.61% of the student teachers scored below 71 marks and were placed in the low scorer group. And 52.83% of the student teachers scored between 72 – 97 marks and they were the average scorer group while the other 29.56% of the student teachers from the high scorer group scored above 98 marks. This shows that student teachers of District Institute of Education and Training, Mamit had at least a minimal knowledge about the environment. It was found that more than half of the total student teachers possess a good environmental awareness scoring between 72-97 marks from the environmental awareness scale. It was also found from the analysis of data that 28 student teachers need more environmental education for the reason that they scored below 71 marks while 47 student teachers have a very good environmental awareness scoring above 98 marks in the environmental awareness scale.

This was not surprising that since environmental education had been introduced as an integral part of the school curriculum from class I. Besides this, pedagogy of Environmental Studies was included in the curriculum of Diploma in Elementary Education(D.El.Ed). Learning environmental education from the beginning of the school helps the students in getting knowledge about the environment. Earlier studies of the subject proved helpful for the students in presenting their knowledge about the environment. It develops in the students basic understanding of the environment and its interrelationship with men and develops in them the skills to solve environmental problems. Not only the environmental

education they received right from class – I to Class – XII or Graduation, the D.El.Ed curriculum was also very useful for the student teachers to possess environmental awareness.

5.2 Findings relating to the variation in environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their gender(Male and Female).

It was found from the study that there was no significant difference with respect to environmental awareness between male and female student teachers. Female group scored higher mean than that of male group and the mean difference between male and female student teachers was 3.67, but the difference is not significant on the basis of the 't'-test at 0.05 level. A female group scored lower standard deviation than the score of male(A lower standard deviation means that more of the numbers are close to the average). According to this study, it was proved that gender is not determining factor in environmental awareness. It was found that male and female student teachers have equal chance to get environmental knowledge and environmental awareness is not dependent on gender among student teachers of DIET,Mamit..

5.3 Findings relating to the variation in environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their academic discipline(Science and Non-science).

It was found that the science and non-science groups do not differ significantly in their environmental awareness. The calculated mean and standard deviation values of science group were 92.76 and 8.27 respectively while the values of mean and standard deviation of non-science group were 84.46 and 17.01 respectively. The mean difference was 8.3. Thus, the mean scored of the student teachers from science group was higher considerably and it was found from the study that they have better environmental awareness than that of non-science group. The student teachers having science background are proved to be more aware in this

study. It may be because of the contents or knowledge related to environment which is included particularly in science stream curriculum.

5.4 Findings relating to the variation in environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their inhabitation(Rural and Urban).

The study found that the rural and urban groups differ significantly in their environmental awareness. The mean scored of the urban group was higher than that of the score value of rural group. The differential studies in this case proved that urban student teachers were more enthusiastic in participating in environmental awareness campaign programme. The student teachers from urban area have better chance to gain environmental awareness and knowledge through environmental protection activities organized by government and non-government organizations. The study revealed that the student teachers from urban areas in general have more sources of information than that of student teachers from rural areas.

5.5 Findings relating to variation with respect to environmental awareness among the student teachers of District Institute of Education and Training, Mamit with reference to the occupation of their parents.

The study found that the student teacher from business group do differ significantly in their environmental awareness than that of manual work group. In other words, the student teachers from business group have better environmental awareness than that of manual work group(Student teachers under business group implies the occupation of their parents is business, so also Student teachers under manual group indicates the occupation of their parents is manual work).

It was found that even though the mean value of business group is higher than that of the scores of govt. servant group, there was no significant difference with respect to environmental awareness between business group and Govt. servant groups(Student teachers under Govt. Servant group implies their parents are Govt. servant).

The study found that the business group do differ significantly from others group with respect to environmental awareness(Others group here meant any other occupation of parents other than business, govt. servant and manual work).

It was found that there was no significant difference between manual work group and govt. servant group.

The study found that there was no significant difference with respect to environmental awareness between manual and others groups. It was also found that there was no significant difference with respect to environmental awareness between manual work and others groups.

Further, the study found that there was no significant difference with respect to environmental awareness between the Govt. servant and others groups.

It was found that the business group were the best group in environmental awareness. The mean value scored by business group was 90.79, which is the highest mean value among the groups. No higher mean value is scored by the other groups other than business group. To conclude, no significant difference was found between more pairs of parents' occupational variables while significant difference was found between only two pairs of parents' occupational variables with respect to environmental awareness among student teachers of DIET, Mamit . The study proved that environmental awareness among the student teachers of DIET, Mamit is not dependent on the occupation of their parents.

5.6 Findings relating to variation with respect to environmental awareness among the student teachers of District Institute of Education and Training, Mamit with reference to the educational level of their parents.

The study found that there was no significant difference between under matrixt group and post matrixt group with respect to environmental awareness. But, the mean values of post matrixt group was higher than the mean value of under matrixt group, this shows a considerable increase in environmental awareness among post matrixt group.

It was found that the under matric group do differ significantly from graduate group in their environmental awareness. The study also found that the under matric group do not differ significantly to post graduate group in their environmental awareness.

The study also found that the post matric group do not differ significantly from graduate group in their environmental awareness. On the other hand, the mean value of post graduate group was higher than that of post matric group, this shows that the graduate group have better awareness in the field of environment.

It was also found that the post matric group do not differ significantly from post graduate in their environmental awareness. On the other hand, the mean value of post graduate group was higher than that of post matric group, this shows that the post graduate group have better awareness than that of post graduate group in the field of environment.

The study also found that the graduate group do not differ significantly from post graduate in their environmental awareness. On the other hand, the mean value of graduate group was higher than that of post graduate group, this revealed that the graduate group have better awareness than that of post graduate group in the field of environment. Therefore, to conclude, no significant difference was found between almost all the pairs of parents' educational variables/levels while significant difference was found between only one pair of mothers' educational variables/levels among student teachers of DIET, Mamit with respect to environmental awareness. Hence, the study proved that environmental awareness among student teachers of DIET, Mamit is not dependent on their parents' educational level.

5.7 Findings from the analysis of the curriculum of D.El.Ed.

It was found from the analysis that the D.El.Ed curriculum was break-up into four semesters, each semester last six months and the whole semesters can be accomplished within two years. It is found that no other semester deals environmental related subject other than the III semester. Pedagogy of Environmental Studies is included in the third semester. From the analysis of the Pedagogy of Environmental Studies, it was found that the main aim of the course was to prepare teachers to understand the philosophical and basis of EVS as a composite area of study that draws upon science and social science. However, it was found that the 'Pedagogy of Environmental Studies' and the content of environmental issues are not well integrated. As student understand children's ideas, it is also an opportunity for the teacher educator to help them revisit and challenge their own conceptual understanding, identify misconceptions and advance towards a better understanding.

This course along with the courses in child studies and contemporary studies will help the future teachers gain a deeper understanding of the ways in which children make sense of their physical and social environment and this insight will enrich their classroom teaching and learning. This course have the following specific objectives:-

- i) To help student teachers understand the scope of EVS and examine different perspectives of curriculum organization.
- ii) To facilitate student teachers to probe children's ideas in science and social science.
- iii) To prepare student teachers to plan for and carry out classroom transaction in the light of various theoretical viewpoints of learning and children's ideas.
- iv) To prepare student teachers to assess children's learning using different modes.

From the above highlight of the D.El.Ed course especially 'Pedagogy of Environmental Studies' following the course outline, it is found that the student teachers have a good chance to have an environmental activities like observation, field, visit to nearby parks etc. The student teachers are to give a chance to have activities as per the course outline such as grouping flowers, seeds, leaves etc. Drawing a picture and shooting a photograph to show the importance and beauty of environment and all other activities said above may enhance the awareness in the field of environment.

5.8 Findings from the interview

An interview was conducted to 10 lecturers of District Institute of Education and Training, Mamit in relation to the environmental awareness. It was found from the interview that only one lecturer have attended environmental awareness training and most of them did not attend the said programme. It was also found that all of the lecturers have no special qualification in environmental education. All of the lecturers said that the environmental studies subject is included in D.El.Ed course. It was also found that the Institute take part in local environment campaign programme. It was also found that 100 percent of the student teachers participated in environmental activities organized by Government or other organizations. It was also known from the study that the Institute offer special activities related to environmental awareness.

Besides the above findings, it was also found that the Institute offer the following special environment related activities:-

- i) Field trip to Phawngpui mountain(Blue mountain) during academic session of 2018-2019.
- ii) Plantation of trees on Green Mizoram day every year.
- iii) Visit to nearby river and garden collecting used plastics for cleanliness drive.
- iv) Planting trees and flowers in the DIET campus during the planting season in following the programme set by the faculty in charge of the institute.

- v) Making paper bags to replace polithyn bags.

The environmental awareness can be promoted both directly and indirectly by the teachers through the students. There can be a favorable promotion of environmental awareness through activity based learning both in the classrooms and outside the classrooms. It is advantageous to find that the Institute deploys activity based learning for promoting environmental awareness.

5.9 Discussions

The research clearly highlight the fact that student teachers of District Institute of Education and Training, Mamit had at least a minimal knowledge about the environment. It was found that more than half of the total student teachers possess a good environmental awareness. This was not surprising that since environmental education had been introduced as an integral part of the school curriculum from class one. Besides this, pedagogy of Environmental Studies is included in the curriculum of Diploma in Elementary Education(D.El.Ed). Learning environmental education from the beginning of the school helps the students in getting knowledge about the environment. Earlier studies of the subject proved helpful for the students in presenting their knowledge about the environment. It develops in the students basic understanding of the environment and its interrelationship with men and develops in them the skills to solve environmental problems. Not only the environmental education they received right from class – I to Class – XII or Graduation, the D.El.Ed programme was also very useful for the student teachers to possess environmental awareness. It was also revealed from the study that teachers can play a very important role to inculcate environmental awareness to learners. Vanguri(2017), in his research, “Awareness and attitude of student-teachers towards environmental education”, made similar finding to the present research.

Some researchers are of the view that there is no effect of gender and caste on environmental awareness of prospective teachers. While Some researchers revealed that there was no significant difference between male and female students towards environmental awareness, some other researchers concluded that there was a

significant difference between male and female with respect to environmental awareness and ethics. The present study matched some studies while some other studies were not matched the present study.

Similar findings was made by Vernal and Louise(2006), in their study, "Pedagogy in environmental education". The findings stated that children from their earlier years should be oriented towards learning from the surroundings using the local environment as a medium for inquiry or discovery as a source of materials for realistic activities. The study revealed out that in environmental education there was more stress on environmental actions and skills.

The present research finding was in tune with the research finding of Maryam Larijani(2007), in his study, "Teachers as ethical architects of environmental", he found that the significance of the role of teachers and students in building a strong and eco-generation for future. The study also emphasized the role of teachers as a sculptors of the society in re-shaping and building a strong and everlasting, peaceful harmony in life. In order to play a significant role as a an ethical architect, the study suggested that the teachers should actively participate in workshops and seminars that help in finding appropriate uses for advanced information and communication technologies for teaching about sustainability. The study also revealed that the teachers can initiate or replicate successful attempts to make the classroom serve as a model of sustainability for the community.

A closely related findings was also made by Chandra and Amit Sharma(2010), in their study, "Significance of environmental education in present context". The study found that teachers can play a very significant role in environmental education by inspiring the students to plant a tree on their birthday every year and by awakening and sensitizing the students through creative teaching about various issues like global warming, waste management, green chemistry, ecology, drainage system, acid rain, ozone layer depletion etc. The study also found that teachers can play a very significant role in environmental education by motivating the students to participate in NSS, NCC, SUPW, Scout & Guide and Red Cross for getting practical aspect of environmental education.

So also a very similar findings was made by Lalremruati PC(2014), in her study, “Environmental education in elementary schools in Mizoram: An analytical study”. She found that the students from all the schools visited had at least a minimal knowledge concerning the environment. It was also found that environmental education had been introduced as an integral part of the school curriculum from class 1. The study found that the inculcation of the subject from the early stage of class develop in the students and informed concern and sense of responsibility for environment.

A contradictory finding against the present research finding was made by Eswaranand Jayaraman(2016), in their research, “Influence of environmental education implemented at middle school level with regard to knowledge and skills”, they found that there is a significant difference between the boys and girls of middle schools in terms of knowledge and skills of environmental education. Inconsistently, the present study found that there was no significant difference in environmental awareness between male and female.

Similar finding with the present study was made by Kumar, Shiva,Patil and Mangala(2007), in their study, “Impact of environment education course on the postgraduate students’ attitudes towards environmental pollution, which has become a world wide problem”. They found that there was no significant difference between male and female students in their attitude towards environmental pollution and related issues. As mentioned erlier, it was found that there is no significant difference with respect to environmental awareness between male and female in the present research.

Raju(2007) studied the environmental ethics of higher secondary students to find out whether there was any significant difference in the environmental ethics of male and female higher secondary students, and whether there was any significant difference in the environmental ethics of the students studying under different types of school management and also whether there was any significant difference in the environmental of the students of rural and urban areas. The findings stated that environmental ethics of higher secondary school students of Cuddalore district was

high. Girls students had more environmental ethics when compared to boys. The communities of students did not any influence on their environmental ethics. The type of school management where they happened to study did not have any influence on their environmental ethics. Rural higher secondary students had more environmental ethics when compared to their urban counterparts. A contradictory finding was made in this research.

Similar finding with the present study was made by Dixit and Agarwal(2009), they conducted a study on environmental awareness among prospective elementary teachers. The study used survey method aiming at assessing the environmental awareness of prospective elementary teachers. The study found that the environmental awareness of prospective teachers was in a positive direction. It was also found that there was no effect of gender and caste on the environmental awareness of prospective teachers. Similarly, it was found in this research that there was no significant difference in environmental awareness between male and female.

The same finding was formed by Mathivanan and Pazhanivelu(2015), they conducted a study on involvement in environmental movements and environmental awareness among higher secondary students. Their study found that the higher secondary students have high environmental awareness and high level of environmental movement. The result indicated that the male and female students do not differ significantly with respect to their environment awareness but the urban and rural students differ significantly in their environmental awareness. The result also indicated that the urban and rural higher secondary school students do not differ significantly in their involvement in environmental movement. So, the finding was in tune with the present research finding. It was also found in this research that there was no significant difference in environmental awareness between male and female.

A very close closely related finding with the present study was made by Talawar and Kumar(2012), in their study, “Environmental ethics among higher secondary students”, they found that there was no significant difference between science and non-science students with respect to environmental ethics. In this

research, it was found out that science and non-science groups do not differ significantly in their environmental awareness.

The finding of the present study was in tune with the finding of Talawar and Kumar(2012), in their research, “A study on environmental ethics among higher secondary students”, They found out that there is significant difference between urban and rural students with respect to the environmental ethics. In this research, it is found that the rural and urban groups differ significantly in their environmental awareness. Different studies in this case proved that urban student teachers were more enthusiastic in participating in environmental awareness campaign programme. It was also found that the student teachers gained environmental awareness and knowledge through environmental protection activities organized by government and non-government organizations. Similar finding was also made by Mathivanan and Pazhanivelu(2015), in their study, “Involvemental movements and environmental awareness among higher secondary school students”, they found that urban and rural students differ significantly in their environmental awareness while Dixit and Agarwal(2009), found that the rural and urban prospective elementary teachers have a favorable awareness towards environment in this modern society in their research, “Environmental awareness among prospective elementary teachers”. Abraham and Arjun(2005), in their study, “Environmental attitude and pro-environmental behaviour among secondary school children”, found that boys in urban were found to be more interest in environmental matters compared to their rural counterparts.

The study found that the student teacher from business group do differ significantly in their environmental awareness with reference to occupation of parents. In other words, it was found that the business group have better environmental awareness. This shows a considerable increase in environmental awareness among business group. The study found that the business group do differ significantly from others group with respect to environmental awareness. The study found that there was no significant difference with respect to environmental awareness between manual and others groups. The study found that there was no

significant difference with respect to environmental awareness between the Govt. servant and others groups. It was found that the business group were the best group in environmental awareness. Prakash(2014), in his study, “Developing environmental awareness, attitude & behaviour among students through eco-clubs”, also found that parents’ occupation and income, environmental responsible behaviour were potent factors for developing environmental awareness among senior secondary students.

The study found that there was no significant difference with respect to environmental awareness between under matrixt group and post matrixt group with reference to education of father. It was also found that there was no significant difference between under matrixt group and graduate group with respect to environmental awareness as shown in chapter-5. In other words, under matrixt group do not differ significantly in their environmental awareness. The graduate group have better awareness in the field of environment. It was found that there was significant difference with respect to environmental awareness between under matrixt and post graduate groups. In other words, it may be said that under matrixt group do differ significantly in their environmental awareness. The study found that the post matrixt group do not differ significantly to graduate group in their environmental awareness. The mean value of post matrixt group was higher than that of graduate group, this shows that the post matrixt group have better awareness in the field of environment. The study found that the post matrixt group do differ significantly to post graduate in their environmental awareness. The study found that the graduate group do differ significantly to post graduate with respect to environmental awareness. The graduate group have better awareness than that of post graduate group in the field of environment.

The study found that there was no significant difference between under matrixt group and post matrixt group in their environmental awareness with reference to education of mother as shown in chapter-5. It was found that the under matrixt group do differ significantly to graduate group in their environmental awareness. The study found that the under matrixt group do not differ significantly to post graduate group in their environmental awareness. The study also found that the post matrixt

group do not differ significantly to graduate group in their environmental awareness. The graduate group have better awareness in the field of environment. It was also found that the post matric group do not differ significantly to post graduate in their environmental awareness. The post graduate group have better awareness than that of post graduate group in the field of environment. The study also found that the graduate group do not differ significantly to post graduate in their environmental awareness. The graduate group have better awareness than that of post graduate group in the field of environment.

It was found from the analysis that D.El.ED. curriculum was break-up into four semester, each semester last six months and the whole semesters can be accomplished within two years. No other semester deals environmental related subject other than the third semester. Pedagogy of Environmental Studies was included in the third semester course. The main aim of Pedagogy of Environmental Studies was to prepare teachers to understand the philosophical and epistemological basis of EVS as a composite area of study that draws upon science and social science. The content related to concept in science and social science was embedded within the course. As student understand children's ideas, it was also an opportunity for the educator to help them revisit and challenge their own conceptual understanding, identify misconceptions and advance towards a better understanding.

This course along with the courses in child studies and contemporary studies will help the future teachers gain a deeper understanding of the ways in which children make sense of their physical and social environment and this insight will enrich their classroom teaching and learning. This course have the following specific objectives:-

- i) To help student teachers understand the scope of EVS and examine different perspectives of curriculum organization.
- ii) To facilitate student teachers to probe children's ideas in science and social science.

iii) To prepare student teachers to plan for and carry out classroom transaction in the light of various theoretical viewpoints of learning and children's ideas.

iv) To prepare student teachers to assess children's learning using different modes.

It was found that the student teachers have a good chance to have an environmental activities like observation, field visits, visit to nearby parks etc. The student teachers are to given a chance to have activities as per the course outline such as grouping flowers, seeds, leaves etc. Drawing a picture and shooting a photograph to show the importance and beauty of environment and all other activities said above may enhance the awareness in the field of environment.

It was found from the interview that only one lecturer have attended environmental awareness training programme and most of them did not attend the programme. It is also found that all of the lecturers have no special qualification in environmental education. The environmental studies subject was included in D.El.Ed course. It was also found that the Institute take part in local environment campaign. It was also found that all the student teachers participated in environmental activities organized by Government or other organizations. It is also found from the interview that the Institute offer special activities related to environmental awareness. It is also found that the Institute offer the following special environment related activities:-

- i) Field trip to Phawngpui mountain(Blue mountain) during academic session of 2018-2019.
- ii) Plantation of trees on Green Mizoram day every year.
- iii) Visit to nearby river and garden collecting used plastics for cleanliness drive.
- iv) Planting trees and flowers in the DIET campus during the planting season in following the programme set by the faculty in charge of the institute.
- v) Making paper bags to replace polithyn bags.

The discussion of the research findings examined above let out a variety of findings in relation to environmental awareness. Some previous research findings were in contrary with the present research findings while some other findings were in tune with the present findings. While Some researchers revealed that there was no significant difference between male and female students towards environmental awareness, some other researchers concluded that there was a significant difference between male and female with respect to environmental awareness and ethics. The present study matched some studies as reviewed here while some other studies were not matched the present study. This was not surprising as environmental awareness had become a growing concern for people all over the world. In the light of urgent call for a more humane attitude towards the environment and the need to inculcate this from early age, the investigator considered this topic not only worthwhile but necessary so that the stake holders may successfully take part in the march for environmental safe. Besides this, the investigator also considered the collected data in this study would make up an important addition to the already existing data in relation to environmental awareness.

5.10 Conclusions

On the basis of the present study, it can be said that the environmental awareness of student teachers was in a positive direction. This was a healthy sign. The investigator concluded that most of the student teachers of District Institute of Education and Training, Mamit have an environmental awareness and its related problems since environmental education have been introduced from the early stage of class-I. This awareness will surely enable the student teachers to teach their future students about the reality of environmental problems to be able to tackle the problems by themselves. Today men and women have equal right to be educated; in this progressive era, everybody has equal chance to get educated. Hence, it was concluded that there was no effect of gender on the environmental awareness of student teachers of District Institute of Education and Training, Mamit. Then, there was no significant difference in environmental awareness between male and female.

This may also be an impact of mizo society which is not having much gender discrimination.

The student teachers of District Institute of Education and Training, Mamit have different backgrounds, the investigator classified them into two groups based on their respective academic disciplines viz. science group and non-science group in this study. The following conclusions are made: Science group have more environmental awareness than that of non-science group. Meanwhile, there is no significant difference between non-science and science students in environmental awareness among student teachers of District Institute of Education and Training, Mamit. As we know, science has lessened the distance throughout the world by great inventions like electricity, vehicles, TV, radio, computers, Internet, magazines, newspapers etc. Hence a person whether in rural areas, comes to know about all things. So, in this modern society the rural and urban student teachers have favorable awareness towards environment.

However, in this study, the mean scored of the urban group was higher than rural group, which revealed that the urban group have more environmental awareness. The differential studies in this case proved that urban student teachers were more enthusiastic in participating in environmental awareness campaign programme. It was also said that the student teachers gained environmental awareness and knowledge through environmental protection activities organized by government and non-government organizations. Then, it was concluded that there was significant difference between rural and urban in environmental awareness among Student Teachers of District Institute of Education and Training, Mamit.

In this research, the investigator classified the student teachers into four groups based on their fathers' occupation viz. business group, manual group, government servant group and others group in order to find out the relationship between environmental awareness and occupation of father. It was also concluded that the business group were the best group in environmental awareness. The mean value scored by business group was 90.79, which was the highest mean value among the groups. No higher mean value was scored by the other groups other than business group. Therefore, a close relationship between environmental awareness and occupation of parents was found among Student Teachers of District Institute of

Education and Training, Mamit. Thus, there was no relationship between environmental awareness and occupation of parents among Student Teachers of District Institute of Education and Training, Mamit.

In this study, the student teachers were also classified into four groups based on the level of education of their respective father viz. under matric, post matric, graduate and post graduate. It was also concluded that the mean values of post matric group was higher than the mean value of under matric group, this shows a considerable increase in environmental awareness among post matric group. Meanwhile, the mean value of graduate group was higher than that of under matric group, this shows that the graduate group have better awareness in the field of environment. The mean value of post matric group was higher than that of graduate group, this shows that the post matric group have better awareness in the field of environment. Post matric group have better awareness than that of post graduate group in the field of environment whereas graduate group have better awareness than that of post graduate group in the field of environment. Thus, there was no relationship between environmental awareness and education of father among Student Teachers of District Institute of Education and Training, Mamit.

The student teachers were also classified into four groups in the present study based on the level of education of their respective mother viz. under matric, post matric, graduate and post graduate. It was concluded that the mean values of post matric group was higher than the mean value of under matric group, this shows a considerable increase in environmental awareness among post matric group. Graduate group have better environmental awareness than that of under matric group whereas post graduate group have better environmental awareness than that of under matric group. Graduate group have better awareness than post matric group in the field of environment while post graduate group have better awareness than that of post matric group in the field of environment. Graduate group have better awareness than that of post graduate group in the field of environment. Hence, there was no relationship between environmental awareness and education of mother among Student Teachers of District Institute of Education and Training, Mamit.

Environmental education should be activity learning in order to make learning more effective and real. Teachers, thus, become the key to the successful transaction of environmental education in schools. They play a crucial role in building necessary abilities and competencies in children for exploring, understanding, appreciating and participating in environmental protection and conservation. In order to achieve this, the teacher needs to be empowered to create awareness, attitude and concern in children and facilitate them in understanding and solving environmental problems. This calls for a systematic training in the content and pedagogy of environmental education for students. As the teacher play a vital role in national development, they must possess adequate awareness towards nature first, after that they can inculcate the required awareness, attitude and skills in students to take care of the environment. The present study can contribute a lot to rise the level of the student teachers on environmental awareness.

5.11 Recommendations

- * Workshops and seminars on environmental awareness.
- * The content of environmental issues and course of D.El.Ed. programme should be integrated.
- * Assigning more projects on different topics concerning environmental education like rainwater harvesting, recycling, waste management, collection of different parts of plants, survey of various plants and animals etc.
- * Arranging more field visits and educational tour to natural places – mountains, rivers, zoos, museum, industries, factories etc.
- * Developing dustbin culture in the student teachers.
- * Promoting campaign with the help of students against use of plastic carry bags.

- * Celebrating important days like World Forest Day, World Environment Day, World Population Day etc.
- * Inspiring the students to plant a tree on their birthday every year.
- * Arranging co-scholastic activities regarding environmental awareness.

5.12 Suggestions For Further Research

No study is completed and perfect in itself. Every study raises further issues involved in the investigation. The present study also raises some issues within the context of the study and the following are suggested for further research:

- 1). Significance of Environmental Education in the Present Context
- 2). Environmental awareness and attitudes among college students.
- 3). Environmental education in high schools in Mizoram: An analytical study.
- 4). The role of Government for promoting environmental awareness.
- 5). Involvement in Environmental Movements and Environmental Awareness among Higher Secondary Students.

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ABSTRACT

**ENVIRONMENTAL AWARENESS AMONG STUDENT
TEACHERS OF DISTRICT INSTITUTE OF EDUCATION AND
TRAINING, MAMIT**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF
PHILOSOPHY**

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**DEPARTMENT OF EDUCATION
SCHOOL OF EDUCATION AND HUMANITIES
JANUARY, 2021**

Introduction

“Environmental awareness is that which provides power and understanding to take decisions individually and collectively and initiate actions for social, cultural, and economic survival, growth and development and for conservation of nature and natural resources” (Belgrade International Workshop, 1975). In simple words, environmental awareness is to understand the fragility of our environment and the importance of its protection. Now environment has become the burning issue for all the academicians, policymakers and governments of the world. Environmental awareness is a very significant area to which our education today cannot turn a deaf ear owing to the fact that we live in a world where issues related to our environment are a reality. According to Péri Rasolondraibe(1991), “The delicate balance of the earth’s small and fragile biosphere, which makes it a home to millions of species and subspecies of animals and plants both aquatic and terrestrial, is dangerously threatened”. As a result, several attempts and projects have been made at various levels to effectively address the present situation where our ecosystems are in danger of catastrophe.

The aim of education is to impart knowledge, skills and values through different approaches or strategies either in formal or non-formal mode. In order to safeguard the environment, an individual needs to be aware of his/her environment and also should have a positive attitude towards it. Environmental Education is a process which creates awareness about environmental issues, involves us in problem solving and enables us to protect the environment. The present study aims at finding out the level of environmental awareness of student-teachers of District Institute of Education and Training(DIET), Mamit who choose teaching profession for their career.

Rationale of the Study

Clean environment is one of the most important parts of our lifestyle. Environment affects the health, particularly more of children. There was an urgent need to develop more environmental awareness among the students of all levels, the prospective teachers can contribute a lot towards environmental awareness. The environmental awareness will encourage people to use energy and water more efficiently and recycle household waste. In fact, education is universally considered to be an effective means to bring forth positive impacts in the society. Teachers possess a very good chance to spread environmental awareness to the students and to the society as a whole. So, it is essential to possess a fair amount of environmental awareness to be a successful and an ideal teacher. The environmental awareness level of teachers can greatly determine the attitude of the people to whom they can impart their knowledge and awareness on the issues of environment. Teachers' Training Institutes have a particularly important role in raising the level of environmental awareness both directly and indirectly at large. Hence, it is essential to investigate the environmental awareness level of student teachers of DIET, Mamit as they are the prospective teachers.

Objectives of the Study

- i. To find out the level of environmental awareness of student teachers of District Institute of Education and Training, Mamit.
- ii. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to their gender(Male & Female).
- iii. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to their academic discipline(Science & Non-science).
- iv. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to their Inhabitation(Rural& Urban).

- v. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to occupation of their parents.
- vi. To find out the variation with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with reference to education of their parents.
- vii. To evaluate the curriculum of student teachers' training programme(D.El.Ed.) to find out the content related to environmental issues.

Null hypotheses of the Study

1. There is no significant difference with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with regards to their gender.
2. There is no significant difference with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with regards to their academic discipline(Science & Non-science).
3. There is no significant difference with respect to environmental awareness among student teachers of District Institute of Education and Training, Mamit with regards to their inhabitation(Rural and urban).

Review of Related Literature

A multitude of research works has been done in relation to environmental awareness. However, the present study 'environmental awareness among student teachers of District Institute of Education and Training, Mamit is the first and the only one research work for investigating the environmental awareness of the student teachers of the Institute and also in the geographical location of Mizoram state.

Dixit and Agarwal(2009) conducted a study on environmental awareness among prospective elementary teachers. The study found that there is no effect of gender and caste on the environmental awareness of prospective teachers.

Chandra and Amit Sharma(2010) conducted a study on significance of environmental education in present context. The study found that teachers can play a very significant role in environmental education by motivating the students to participate in NSS, NCC, SUPW, Scout & Guide and Red Cross for getting practical aspect of environmental education.

Lalremruati PC(2014) conducted a study on environmental education in elementary schools in Mizoram: An analytical study. It was found that environmental education had been introduced as an integral part of the school curriculum from class one in Mizoram. The study also found that the inculcation of the subject from the early stage of class develop in the students and informed concern and sense of responsibility for environment.

Population and Sample

All the student teachers of District Institute of Education and Training, Mamit of 2018-2019 and 2019-2020 academic sessions were included in the study. They are 159 in number. There are 52 male respondents and 107 female respondent.

Tools for collection of data

1. For the present study, the investigator used Environmental Awareness Scale developed by Dr. Haseen Taj, Department of Education, Bangalore University.
2. The investigator prepared interview schedule and administered the interview for gathering data from the faculties of the institute.
3. Content Analysis of D.El.Ed curriculum: The researcher analyse the D.El.Ed. curriculum by following content analysis technique. Particularly, the compulsory subject in D.El.Ed. course, 'Pedagogy of Environmental Studies' was well analysed to let out its importance on environmental awareness for the student teachers.

Analysis And Interpretation of Data

Analysis were done in accordance with the objective of the present study. All respondents were grouped as males and females, science and non-science, rural and urban group. The analysis of data was carried out with the help of appropriate statistical techniques like percentage, mean, standard deviation and t-test.

1. To study the environmental awareness of the student teachers of the District Institute of Education and Training, Mamit.

Table 1: Environmental awareness of student teachers of District Institute of Education and Training, Mamit.

Score category (Total mark = 117)	Number of students	Percentage of students
Below 71 marks	28	17.61%
Between 72 – 97 marks	84	52.83%
Above 98 marks	47	29.56%
Total	159	100%

Source: Field Study

Environmental Awareness Scale was given to the student teachers of DIET, Mamit, they were 159 in number consisting 52 male and 107 female student teachers. The investigator divided the scores into three groups those scoring low, average and high. Student teachers who scored below 71 marks were put in the group of low scorer and student teacher who scored between 72-97 marks were put in the group of average scorer and again the student teacher who scored above 98 marks were put in the group of high scorer.

The above table 4.1 revealed that 17.61% of the student teachers scored below 71 marks and were placed in the low scorer group. And 52.83% of the student teachers scored between 72 – 97 marks and they were the average scorer group while the other 29.56% of the student teachers from the high scorer group scored above

98 marks. This shows that student teachers of District Institute of Education and Training, Mamit had at least a minimal knowledge about the environment.

2. To find out the variation with respect to environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their gender(male and female).

Table-2

Variation in environmental awareness among male and female of the student teachers.

Category	N	Mean	Standard deviation	Mean difference	df	t-value	Level of significance
Male	52	83.67	15.37	3.67	157	1.46	Not significant
Female	107	87.34	14.57				

Source: Field study

The above table - 2 indicated a comparative statistics on the significance of the level of difference on environmental awareness between male and female. From the total number of male, we can find out the mean of male was 83.67 in which their standard deviation was 15.37 whereas on the other hand there were 107 female student teachers in which their mean was 87.34 and the standard deviation was 14.57 and this result that the mean difference of male and female was 3.67. The required t-value to determine the significance of difference at 0.01 level was 2.61 and 0.05 level was 1.98. The finding of the t-value shows that the value of t obtained was 1.46, which was not significant at 0.01 level and this is also not significant at 0.05 level. Hence, the null hypothesis -1 'There is no significant difference in environmental awareness of the student teachers of District Institute of Education and training, Mamit with regards to their gender' was accepted.

3. To find out the variation with respect to environmental awareness of the student teachers of District Institute of Education and Training, Mamit with reference to their academic discipline(Science and Non-science)

Table – 3

Variation of the student teachers in environmental awareness with respect to their academic discipline.

Educational variable	N	M	Standard deviation	Mean difference	df	t-value	Level of Significance
Science	16	92.76	8.27	8.3	157	1.92	Not significant
Non-Science	143	84.46	17.01				

df = degree of freedom

From table – 3, it was clearly seen that the t-value was not significant at 0.05 levels of significance. Therefore it may be said that the above said groups do not differ significantly in their environmental awareness. The calculated mean and standard deviation values of science group were 92.76 and 8.27 respectively while the values of mean and standard deviation of non-science group were 84.46 and 17.01 respectively. The mean difference was 8.3. Thus, the mean scored of the student teachers from science group was higher considerably and it can be said that they have better environmental awareness than that of non-science group. Therefore, the null hypothesis- 2 ‘There is no significant difference in environmental awareness of student teachers of District Institute of Education and Training, Mamit with regards to their academic discipline(Science and Non-science)’ was accepted.

4. To find out the variation of the student teachers of District Institute of Education and Training, Mamit in environmental awareness with reference to their inhabitation(Rural and Urban)

Table – 4

Difference in environmental awareness among student teachers with respect to inhabitation

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Rural	106	83.05	15.00	9.27	157	3.86	Significant at 0.05 & 0.01
Urban	53	92.32	12.73				

Table – 4 revealed that the obtained t-value 3.86 was greater than the table values 1.98 at 0.05 level and 2.61 at 0.01 levels. So, it was found that the t-value was significant at 0.01 levels for environmental awareness. So, it may be said that the above said groups differ significantly in their environmental awareness. The calculated mean and standard deviation values of rural group were 83.05 and 15.00 respectively while the values of mean and standard deviation of urban group were 92.32 and 12.73 respectively. The mean difference was 9.27. Therefore, the null hypothesis- 3 ‘There is no significant difference in environmental awareness of student teachers of District Institute of Education and Training, Mamit with regards to their inhabitation(rural and urban)’ was rejected.

5. To find out the variation of student teachers of District Institute of Education and Training, Mamit with respect to environmental awareness within parents’ occupational variables. (Here, the student teachers were classified into four groups based on the occupation of their respective parents viz. business, govt. servant, manual works and others group. Here, ‘others group’ implies any other occupation other than business, govt. servant and manual work. Hint: Student teachers under business group implies the occupation of their parents is business.)

Table – 4.5 :Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Business	33	90.79	12.71	7.65	59	2.11	Significant at 0.05
Manual work	28	83.14	15.60				

Table – 4.5 revealed that t-value was significant at 0.05 levels of significance. Therefore it may be said that the student teacher from business group do differ significantly in their environmental awareness. The calculated mean and standard deviation values of business group were 90.79 and 12.71 respectively while the values of mean and standard deviation of manual work group are 83.14 and 15.60 respectively. The mean difference was 7.65. In other words, the the mean scored by the business group shows that they have better environmental awareness.

Table – 4.6:Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Business	33	90.79	12.71	3.55	82	1.12	Not significant
Govt. Servant	51	87.24	14.98				

From table-4.6, it was clearly seen that the t-value was not significant at 0.05 levels of significance. The mean value of business group was found to be 90.79, which was higher than the scores of Govt. servant group. The calculated mean and standard deviation values of business group are 90.79 and 12.71 respectively while the values of mean and standard deviation of Govt. servant group were 87.24 and 14.98 respectively. The mean difference was 3.55. This shows a considerable increase in environmental awareness among business group

Table – 4.7: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Business	33	90.79	12.71	7.47	78	2.32	Significant at 0.05
Others	47	83.32	15.13				

Table – 4.7 indicated that t-value was significant at 0.05 levels of significance. Therefore it may be said that business group do differ significantly in their environmental awareness. It was found that the calculated mean and standard deviation values of business group were 90.79 and 12.71 respectively while the values of mean and standard deviation of others group are 83.32 and 15.13 respectively. The mean difference was 7.47.

Table – 4.8: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Manual work	28	83.14	15.60	4.1	77	1.15	Not significant
Govt. Servant	51	87.24	14.98				

From table – 4.8, it was cleared that the t-value was not significant at 0.05 and 0.01 levels of significance. The mean value of Govt. servant group was found to be 87.24, which is higher than the scores of manual work group with the mean difference of 4.1, this shows a considerable increase in environmental awareness among Govt. servant group.

Table – 4.9: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Manual work	28	83.14	15.60	0.18	73	0.05	Not significant
Others	47	83.32	15.13				

From table- 4.9, it was cleared that the t-value was not significant at 0.05 and 0.01 levels of significance. The mean value of the two groups are almost same. The mean value of manual work group was 83.14 while the mean value of others group is 83.32. Others group here meant any other occupation of parents other than business, govt. servant and manual work. The mean difference was only 0.18. This shows that there was no considerable difference in environmental awareness between the two groups.

Table – 4.10: Difference in environmental awareness among student teachers with respect to occupation of their parents.

Variable	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Govt. Servant	51	87.24	14.98	3.92	96	1.29	Not significant
Others	47	83.32	15.13				

Table – 4.10 revealed that the t-value was not significant at 0.05 and 0.01 levels of significance. Meanwhile, the mean value of Govt. servant group was found to be 87.24, which is higher than the scores of others group with the mean difference of 3.92. This shows a Govt. servant group have better environmental awareness than others group.

It can be said from the above analysis and interpretation of data that the business group are the best group in environmental awareness. The mean value

scored by business group is 90.79, which is the highest mean value among the groups. No higher mean value is scored by the other groups other than business group. To conclude, no significant difference was found between more pairs of parents' occupational variables while significant difference was found between only two pairs of parents' occupational variables with respect to environmental awareness among student teachers of DIET, Mamit .

6. To find out the variation of student teachers of District Institute of Education and Training, Mamit in environmental awareness with reference to the educational level of their parents. (Here, the student teachers were classified into four groups based on the level of education of their respective parents viz. under matric, post matric, graduate and post graduate group. The word 'matric' here means class ten. Hint: The student teacher under graduate group implies the educational level of his/her parents is graduate.)

Table-4.11: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Under matric	93	84.81	15.59	1.70	144	0.64	Not significant
Post matric	53	86.50	14.63				

Table- 4.11 clearly indicated that the t-value was not significant at 0.05 and 0.01 levels of significance. The mean value of under matric group was 84.81 while the mean value of post matric group was 86.50. The mean difference was only 1.70.

Table- 4.12: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Under matric	93	84.81	15.59	7.94	103	1.72	Significant at 0.01
Graduate	12	92.75	8.98				

Table – 4.12 revealed that t-value was significant at 0.05 and 0.01 levels of significance. Therefore, it may be said that under matric group do differ significantly to graduate group in their environmental awareness. The calculated mean and standard deviation values of under matric group were 84.81 and 15.59 respectively while the values of mean and standard deviation of graduate group were 92.75 and 18.98 respectively. The mean difference was 7.94.

Table-4.13: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Under matric	93	84.81	15.59	5.70	93	0.51	Not significant
Post graduate	2	90.5	9.5				

Table – 4.13 revealed that t-value was not significant at 0.05 levels of significance. Therefore it may be said that under matric group do not differ significantly to post graduate group in their environmental awareness. The calculated mean and standard deviation values of under matric group were 84.81 and 15.59 respectively while the values of mean and standard deviation of post graduate group were 90.5 and 9.5 respectively. The mean difference was 5.70.

Table-4.14: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Post matric	53	86.50	14.63	6.25	63	1.42	Not significant
Graduate	12	92.75	8.98				

Table – 4.14 indicated that t-value was not significant at 0.05 and 0.01 levels of significance. Therefore it may be said that post matric group do not differ significantly to graduate group in their environmental awareness. The calculated mean and standard deviation values of post matric group were 86.50 and 14.63 respectively while the values of mean and standard deviation of graduate group were 92.75 and 8.98 respectively. The mean difference was 6.25. The mean value of post graduate group is higher than that of post matric group, this shows that the graduate group have better awareness in the field of environment, but the difference is not statistically significant.

Table-4.15: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Post matric	53	86.50	14.63	4	53	0.38	Not significant
Post graduate	2	90.5	9.5				

Table – 4.15 revealed that t-value was not significant at 0.05 and 0.01 levels of significance. Therefore it can be said that post matric group do not differ significantly to post graduate group in their environmental awareness. The

calculated mean and standard deviation values of post matric group were 86.50 and 14.63 respectively while the values of mean and standard deviation of post graduate group were 90.5 and 9.5 respectively. The mean difference was 4. The mean value of post graduate group was higher than that of post matric group, this shows that the post graduate group have better awareness than that of post matric group in the field of environment.

Table-4.16: Difference in environmental awareness among student teachers in relation to educational level of their parents.

Education of parents	N	M	Standard deviation	Mean difference	df	t-value	Level of significance
Graduate	12	92.75	8.98	2.25	12	0.32	Not significant
Post graduate	2	90.5	9.5				

Table – 4.16 revealed that t-value was not significant at 0.05 and 0.01 levels of significance. Therefore it can be said that graduate group do not differ significantly to post graduate in their environmental awareness. The calculated mean and standard deviation values of graduate group were 92.75 and 8.98 respectively while the values of mean and standard deviation of post graduate group were 90.5 and 9.5 respectively. The mean difference was 2.25. The mean value of graduate group was higher than that of post graduate group, this shows that the graduate group have better awareness than that of post graduate group in the field of environment.

It is cleared from the above data analysis and interpretation that the mean values of post matric group was higher than the mean value of under matric group, this shows a considerable increase in environmental awareness among post matric group. Graduate group have better environmental awareness than that of under matric group whereas post graduate group have better environmental awareness than that of under matric group. Graduate group have better awareness than post matric group in the field of environment while post graduate group have better awareness than that of post matric group in the field of environment. Graduate group have better awareness than that of post graduate group in the field of environment.

Therefore, to conclude, no significant difference was found between almost all the pairs of parents' educational variables/levels while significant difference was found between only one pair of mothers' educational variables/levels among student teachers of DIET, Mamit with respect to environmental awareness.

7. Analysis of the curriculum of Diploma in Elementary Educatio(D.EL.ED).

The D.El.Ed curriculum covers a vast area, the course was divided into four semesters. The following are the semester break-up and curriculum structure:

Table – 4.17:Semester Break-up and Curriculum Structure

Sl.No.	Course Title	Suggested periods per week	Maximum marks
I Semester	Theory		
1.	Childhood and the Development of Children	4-5	100
2.	Contemporary Indian Society	4-5	100
3.	Education, Society, Curriculum and Learner	4-5	100
4.	Cognition, Learning and the Socio-Cultural Context	4-5	100
5.	Proficiency in English	4-5	50
		Total marks	450
II Semester	Theory		
1.	Towards Self-Understanding and Evolving an Educational Vision I	2-3	50
2.	Pedagogy across the Curriculum	2-3	50
3.	Mathematics Education for the Primary School Child	4-5	100
4.	Proficiency in Hindi	2-3	50
	Practicum		
5.	Work and Education	2-3	50
6.	Children's Physical and Emotional Health, School Health and Education	4-5	100
	Pre Internship : 2 weeks		50
III Semester	Theory		

1.	<i>Pedagogy of Environmental Studies</i>	4-5	100
2.	Pedagogy of Mizo	4-5	100
3.	Towards Self-Understanding and Evolving an Educational Vision II	2-3	50
4.	Understanding Language, Early Literacy and Language Education	4-5	100
5.	Diversity, Gender and Inclusive Education	4-5	100
		Total Marks	450
IV Semester	Theory		
1.	School Culture, Leadership and Change	4-5	100
2.	Optional Course(Any One) i) Pedagogy of english language ii) Pedagogy of science iii) Pedagogy of social science iv) Pedagogy of mathematics	4-5	100
	Practicum		
3.	Creative drama, fine arts and education	2-3	50
4.	School internship : 16 weeks		200
		Grand total	1800

It was clearly revealed from the above programme structure that no other Semester deals environmental related subject other than the III Semester. ‘Pedagogy of Environmental Studies’ is included in the third Semester course. Meanwhile, ‘Pedagogy of Environmental Studies’ is compulsory subject for all. It should be noted that this course is not on environmental studies, but it is about how to teach environmental studies. This assumed that whosoever is admitted to the programme is well versed in the content domain of environmental studies. Analysis of Pedagogy of Environmental Studies in relation to environmental awareness is given below:

Table – 4.18: Analysis of Pedagogy of Environmental Studies

Unit of Study

	Unit 1: Concept of Environmental Studies
1.	Scope of EVS as a curricular area at the primary level
2.	Curriculum organization: a) EVS as an integral area of study that draws upon understanding from Science and Social science b) EVS as EVS(Science) and EVS (Social Science)
	Unit 2: Understanding Children’s Ideas
1.	Perspectives in EVS learning – Piaget, Vygotsky, Bruner and Ausubel
2.	Research on Children’s ideas – Preconceptions, Alternative conceptions.
3.	Implications of understanding children’s ideas for classroom transactions.
	Unit 3: Classroom Transactions and Assessment
1.	Ways of conducting enquiry: observation, activities, discussion and small group work, field visits, project, survey, experience etc.
2.	Process skills in EVS <i>Student teachers</i> organize simple activities for children like experiments to see what floats and what sinks in water, visit to nearby clinic, pond, stable, market, grouping flowers, seeds, leaves, analysis of newspaper reports by children. This will give them a chance to understand how children engage with ideas, make linkage, classify, analyse kinds of questions and reporting assessment for further learning.
3.	Different ways of assessment and reporting assessment using children’s photographs, drawing, narratives, children’s discussion etc. while teaching in school. They prepare students’ portfolios and report children’s progress on various indicators such as expression, concern for justice, equality etc.
	Unit 4: Planning for Teaching
1.	Concept maps and thematic web charts
2.	Evolving a unit plan framework
3.	Resource pool of materials
4.	Reflecting on classroom practices
	Unit 5: Understanding of Textbook and Pedagogy
1.	Content, approaches and methods of teaching EVS – Interactive and participatory methods, teacher as facilitator.
2.	Themes, structure of the unit, nature of exercises and its implications.
3.	Indicators of Learning.

The course of study aimed at preparing teachers to understand the philosophical and epistemological basis of EVS as a composite area of study that draws upon science and social science. The content related to concepts in science and social science is embedded within the course. As student understand children’s ideas,

it is also an opportunity for the teacher educator to help them revisit and challenge their own conceptual understanding, identify misconceptions and advance towards a better understanding.

This course along with the courses in child studies and contemporary studies will help the future teachers gain a deeper understanding of the ways in which children make sense of their physical and social environment and this insight will enrich their classroom teaching and learning. This course have the following specific objectives:-

- i) To help student teachers understand the scope of EVS and examine different perspectives of curriculum organization.
- ii) To facilitate student teachers to probe children's ideas in science and social science.
- iii) To prepare student teachers to plan for and carry out classroom transaction in the light of various theoretical viewpoints of learning and children's ideas.
- iv) To prepare student teachers to assess children's learning using different modes.

From the above highlight of the D.El.Ed course especially 'Pedagogy of Environmental Studies', following the course outline, it may be said that the student teachers have a good chance to have an environmental activities like observation, field visits, visit to nearby parks etc. The student teachers are to give a chance to have activities as per the course outline such as grouping flowers, seeds, leaves etc. Drawing a picture and shooting a photograph to show the importance and beauty of environment and all other activities said above may enhance the awareness in the field of environment.

8. Analysis of Interview results.

An interview was conducted to 10 lecturers of District Institute of Education and Training , Mamit in relation to the environmental awareness. The questions and answers obtained from the interview were shown in the table below.

Table – 4.19: Interview questions and answers.

Sl/No	Questions which were asked to lecturers in an interview.	Answers	
		‘Yes’ In percent with number within bracket	‘No’ In percent with number within bracket
1.	Have you attended any training programme offered concerning environmental awareness?	10%(1)	90%(9)
2.	Do you have any special qualification or certificate in the field of environmental education?	00%(0)	100%(10)
3.	Is environmental studies subject included in D.El.Ed. course?	100%(10)	00%(0)
4.	Does the Institute take part in local environment campaign?	100%(10)	00%(0)
5.	Do the student teachers participate in environmental activities organized by Government or other organizations?	100%(10)	00%(0)
6.	Does the Institute offer any special activity related to environmental awareness?	100%(10)	00%(0)

From the table – 25 above, was clearly seen that only one lecturer have attended environmental awareness training programme and most of them did not

attend the said programme. The table also revealed that all of the lecturers have no special qualification in environmental education. All of the lecturers said that the environmental studies subject was included in D.El.Ed course. So also it was evident from the above table that the Institute take part in local environment campaign. It was also cleared from the above table that 100 percent of the student teachers participated in environmental activities organized by Government or other organizations. It was also known from the above table that the Institute offer special activities related to environmental awareness.

Besides the above discussion, the lecturers mentioned the following special activities related to environmental awareness which were offered and organised by the institute(Data is based on field diary):-

- i) Field trip to Phawngpui mountain(Blue mountain) during academic session of 2018-2019.
- ii) Plantation of trees on Green Mizoram day every year.
- iii) Visit to nearby river and garden collecting used plastics for cleanliness drive.
- iv) Planting trees and flowers in the DIET campus during the planting season in following the programme set by the faculty in charge of the institute.
- v) Making paper bags to replace polithyn bags.

The study has revealed that the student teachers of District Institute of Education and Training, Mamit acquired and gained environmental awareness from the school curriculums. The school syllabus and school environmental activities contributed a lot to increase their environmental awareness. It was seen from the data interpretation and analysis that almost all the student teachers of District Institute of Education and training,Mamit had at least a required knowledge about the environment while a small number of them were not well equipped with that knowledge. It was apparently cleared that the student teachers may be able to guide and teach their students properly in the field of environment. The Diploma in Elementary Education(D.El.Ed) curriculum also contributed a lot to inculcate

environmental awareness and a sense of responsibility to preserve environment as the 'Pedagogy of Environmental Studies' is the compulsory subject for all in D.El.Ed course. The Institute also offered special activities related to environmental awareness. Meanwhile, it is strongly recommended and suggested that the course of study in D.El.Ed curriculum should be enlarged to cover more environmental awareness programme to produce ideal teachers in the field of environment.

Since the most of student teachers are reflecting average awareness about environmental issues and moreover 28(17.61%) are scoring below average, this situation put a threat to the basic purpose of the course on pedagogy of environmental studies. While any course on pedagogy elements mastery in content area, here it is revealed that only 47(29.56%) out of 159 student teachers pursuing D.El.Ed. programme were showing mastery level awareness in environmental studies. Therefore, it is recommended that content on environmental issues and course of the D.El.Ed. programme should be integrated.

Findings of the study

1. It was found that student teachers of DIET, Mamit had at least a minimal knowledge about the environment. It was found that more than half of the total student teachers(ie.52.83%) possess good environmental awareness.
2. It was found that there was no significant difference with respect to environmental awareness between male and female student teachers of DIET, Mamit. According to this study, it was proved that gender is not determining factor in environmental awareness. Male and female have their own privileges. So, awareness is not dependent on gender.
3. It was found that the science and non-science groups of student teachers of DIET, Mamit do not differ significantly in their environmental awareness. In the mean time, the student teachers having science background are proved to be more awared in this study. It may be because of the contents or knowledge related to environment which is included particularly in science stream curriculum.

4. The study found that the rural and urban groups of student teachers of DIET, Mamit differ significantly in their environmental awareness. It was found that the urban group have better environmental awareness than that of rural group.
5. The study proved that environmental awareness among the student teachers of DIET, Mamit is not dependent on the occupation of their parents.
6. The study proved that environmental awareness among student teachers of DIET, Mamit is not dependent on their parents' educational level.
7. It was found that Pedagogy of Environmental Studies is included in the third semester course of D.El.Ed. However, it was found that the subject give special importance in relation to pedagogy of the paper without giving importance to content of environmental issues.
8. It was also found from the interview that the Institute offer environment related activities like field trip, planting trees, making paper bags etc.

Discussions

The research clearly highlight the fact that student teachers of District Institute of Education and Training, Mamit had at least a minimal knowledge about the environment. It was found that more than half of the total student teachers possess a good environmental awareness. This was not surprising that since environmental education had been introduced as an integral part of the school curriculum from class one (Lalremruati PC 2014). Besides this, pedagogy of Environmental Studies is included in the curriculum of Diploma in Elementary Education(D.El.Ed). Learning environmental education from the beginning of the school helps the students in getting knowledge about the environment. Earlier studies of the subject proved helpful for the students in presenting their knowledge about the environment. It develops in the students basic understanding of the environment and its interrelationship with men and develops in them the skills to solve environmental problems.

Conclusion

On the basis of the present study, it can be said that the environmental awareness of student teachers was in a positive direction. This was a healthy sign. The investigator concluded that most of the student teachers of District Institute of Education and Training, Mamit have an environmental awareness and its related problems since environmental education have been introduced from the early stage of class-I. This awareness will surely enable the student teachers to teach their future students about the reality of environmental problems to be able to tackle the problems by themselves. It was concluded that there was no effect of gender on the environmental awareness of student teachers of District Institute of Education and Training, Mamit. Then, there was no significant difference in environmental awareness between male and female. This may also be an impact of mizo society which is not having much gender discrimination.

Recommendations

The investigator provides the following recommendation to promote environmental awareness:

1. Workshops and seminars on environmental awareness.
2. The content of environmental issues and course of D.El.Ed. programme should be integrated.
3. Assigning more projects on different topics concerning environmental education like rainwater harvesting, recycling, waste management, collection of different parts of plants, survey of various plants and animals etc.
4. Arranging more field visits and educational tour to natural places – mountains, rivers, zoos, museum, industries, factories etc.
5. Developing dustbin culture in the student teachers.
6. Promoting campaign with the help of students against use of plastic carry bags.

7. Celebrating important days like World Forest Day, World Environment Day, World Population Day etc.

8. Arranging co-scholastic activities regarding environmental awareness.

Suggestions For Further Research

The following are suggested for further research:

1. Significance of Environmental Education in the Present Context
2. Environmental awareness and attitudes among college students.
3. Environmental education in high schools in Mizoram: An analytical study.
4. The role of Government for promoting environmental awareness.