

**CHAPTER - V**  
**SUMMARY, FINDINGS &**  
**RECOMMENDATIONS**

## **CHAPTER - V**

### **SUMMARY, FINDINGS & RECOMMENDATIONS**

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## CHAPTER V

### SUMMARY, FINDINGS & RECOMMENDATIONS

After the analysis and interpretation of the data collected as discussed in Chapter IV it is now time to summarise the entire research work and also to state the findings & conclusions based upon them. The purpose of study is to study how environment Education has been introduced in various Professional Education Courses.

The present chapter deals with the brief summary, conclusions of the study, recommendations and suggestions for further study.

#### **5.1 Summary :**

A healthy environment is not only a need, it is also a right. So conservation and protection of environment for bright and healthy future is essential and for this environment is essential.

Environment conservation depends upon deep understanding of the values of forest, soil, water, wildlife and related resources and to their nation. Better understanding of environment can only be achieved through environment education. That's why environment education is so important and essential as a measure for conservation and pollution free environment for sustenance of life and healthy living.

Environment Education is a multidisciplinary as well as interdisciplinary subject. It has many dimensions & disciplines, like Physical, sciences, Life sciences, Earth science and Social sciences make contribution in this subject, reason why the subject became more advanced.

Now Environment education has become a compulsory subject at all levels of Education. It has been introduced in various Professional

Education Courses such Teacher Education, Engineering, Law, Medicine etc.

It is important to study how Environment Education has been introduced in various professional Education Courses.

### **5.1.1 Statement of the Problem**

A Critical Study of Environment Education Introduced In Professional Education Courses of Shivaji University.

### **5.1.2 Definitions of the Terms**

The definitions of some terms used in the statement of problem are as under ,

- **Environment Education**

Conceptual Definition

“Environment education means recognition and clarification of values, attitudes and concepts concerned with man’s relationships to his culture and biophysical environment”

– C.V. Good (Dictionary of Education,  
1897)

Operational Definition

Environment education is a part of the course at various professional education courses dealing with dissemination of knowledge about environment and developing necessary values, attitudes and skills to solve environmental problems.

- **Professional Education Courses**

Operational Definition

The courses run by a university to develop skills and abilities required in Medical, Law, Engineering and Teaching professions.

- **Shivaji University**

**Operational Definition**

Shivaji University was established in 1962 in Kolhapur, city of Maharashtra. It is an Educational Institution under which various higher education courses are conducted.

- **Critical Study**

**Conceptual Definition**

Thoughtful activity of learning or gaining knowledge either from books or by examining things in the world.

- Oxford Dictionary

**Operational Definition**

Critical study means an analysis of the syllabi of Professional Education Courses of Shivaji University to find out the position of Environment Education and an investigation into the teaching methods adopted and resources available for Environment Education in Professional Education colleges affiliated to Shivaji University.

### **5.1.3 Objectives of the Study**

To objectives of the study are as follows,

- 1) To analyse the syllabi of various Professional Education courses of Shivaji University with reference to Environment Education.
- 2) To identify the teaching strategies used for Environment Education by teachers in various Professional Education colleges.
- 3) To identify the resources available for Environment Education at various Professional Education colleges.
- 4) To study the exchange of resources for Environment Education among various Professional Education colleges.

- 5) To study the difficulties of teachers while teaching Environment Education at various Professional Education colleges.
- 6) To make recommendations to improve quality of Environment Education at various Professional Education colleges.

#### **5.1.4 Assumptions of the Study**

The study is based on following assumption

The Environment Education has been introduced in various professional education courses of Shivaji University, Kolhapur.

#### **5.1.5 Significance of the Study**

The study is useful in following manner-

- 1) The study has been helpful to know the nature of Environment Education at various professional education courses. It has thrown light on different teaching strategies used at various Professional Education courses so that those strategies will be disseminated at all Professional Education colleges.
- 2) The study has been useful to identify the experts available at various Professional Education colleges. So that their expertise will be used by other Professional Education colleges.
- 3) The study has identified the non-human resource available at various Professional Education colleges. It has made possible the exchange of non-human resources among various Professional Education institutes.
- 4) The study has been helpful to know the opinions of teachers about implementation of environment education at various Profession Education colleges. Those opinions will help to improve the

quality of Environment Education at various Professional Education courses.

- 5) The study has been significant to identify the difficulties in implementing Environment Education at various Professional Education colleges. Those difficulties can be solved by joint efforts made by different Professional Educational colleges.

#### **5.1.5 Scope of the Study**

**Scope :** The present study included various professional education courses of Shivaji University, Kolhapur.

#### **5.1.6 Delimitations of the Study**

- 1) The present study included following professional education courses only : B.E. (Bachelor of Engineering), B.Ed. (Bachelor of Education), L.L.B. (Bachelor of Laws), M.B.B.S. (Bachelor of Medicine and Bachelor of Surgery).
- 2) The colleges started before June 2003 were considered for the study.
- 3) The present study included 16 Professional Educational colleges from Satara, Sangli and Kolhapur district of Maharashtra which are affiliated to Shivaji University.
- 4) Only co-educational colleges were selected for the study.
- 5) Only one year B.Ed. course was selected for the study.
- 6) Only M.B.B.S. Branch of Medical course was selected.
- 7) Only Civil, Mechanical, Electrical, and Electronics, and Telecommunication (basic branches) were selected for the study.

### 5.1.7 Research Methodology

a) Method – 1) Survey method – The researcher has made an attempt to collect analyze and interpret the information related to the introduction of Environment Education in Professional Education Courses of Shivaji University.

2) Document Analysis – Document Analysis of syllabi of B.Ed., B.E, L.L.B. and M.B.B.S. Courses was also done.

b) Sample -

**Table No.59**  
**Sampling for selection of colleges**

Sr.	Districts	Colleges of Education (B.Ed.)		Colleges of Engineering (B.E.)		Colleges of Law (LL.B)		Colleges of Medicine (M.B.B.S.)	
		G	NG	G	NG	G	NG	G	NG
		Grantable (G)		Non-Grantable(NG)					
1	Kolhapur	1	2	0	1	1	0	1	0
2	Satara	0	2	1	0	0	1		1
3	Sangli	1	1	0	1	1	0	1	0
4	Total	2 out of 4	5 out of 10	1 out of 2	2 out of 4	2 out of 3	1 out of 3	2 out of 2	1 out of 3
	Total 16 colleges out of 32	7 Colleges out of 14		3 colleges out of 6		3 colleges out of 6		3 colleges out of 6	
	Sample in percentage	50%		50%		50%		50%	



**Table No.60**  
Sampling of Teachers/Lab Assistant/Librarian/Students

Faculty Member	College of Education (B.Ed.) (7 Colleges)	College of Engineering (B.E.) (3 colleges)	College of Law (LL.B.) 3 colleges	College of Medical (M.B.B.S.) 3 colleges	Total
Principal/HOD's (All)	7	3	3	3	16
Teachers (All Teaching EE or EE related subjects/components)	7	4	3	14	28
Lab Assistants (All)	-	3	-	3	06
Librarian's (All)	7	3	3	3	16
Students (5 students/College)	35	15	15	15	80

- c) Tools – 1) Questionnaire for principals/Head of the Departments, Teachers, Lab assistants and Librarians.
- d) Analysis – 1] Qualitative analysis of the data gathered by Document Analysis was done
- 2] For the analysis of quantitative data percentage was calculated.

## 5.2 FINDINGS

Findings related to objective No. 1

**Objective No. 1 To analysis the syllabi of various Professional Education courses of Shivaji University with reference to Environment Education.**

- 1) About the Introduction of Environment Education at B.Ed. course of Shivaji University

a] Weightage given for Environments Education in B.Ed. course is very low. In compulsory part of the theory course there is only one subunit in one paper out of seven papers (100 marks each). It is entitled Environment Education, Population Education, Health Education, Adolescence Education. Here the scope for Environment Education is not spelt out, however it can be said that there is very little scope.

b] In optional paper (50 marks) of Environments Education at B.Ed. course though there are five units, four are related to Environmental science and only one is related to Environmental Education where curriculum, teaching, learning etc. have been included. Actually Environment and its problems, Population Explosions, Environmental movements etc. included in B.Ed. syllabus have now been included at Under graduate level of all disciplines Therefore Environment Education part for developing an Environment teacher should be increased in B.Ed. syllabus.

c] In compulsory part there is no practical related to Environment Education. For optional paper there is only one practical (out of four) for to marks is to be done. Here also the weight age given to Environmental science part is more than the Environment Education part. Out of four practical's three are related to study of pollution or other environmental problem and study of an ecosystem and only one practical is related to Environmental Game. Thus skills required for Environment Education cannot be developed through existing B.Ed. syllabus.

2) About Introduction of Environment Education at Law (L.L.B) course of Shivaji University.

a] In compulsory part of the theory course in Law, there is one paper including nine units in both the 3 yrs and 5 yrs. Law courses. The paper includes both the arts : Environment concepts, problems, management

etc. and Environmental laws. The content required for a person in Law field is reflected in the syllabus.

b] There is no practical related to

3) About the Introduction of Environment Education at Engineering course (B.Ed) of Shivaji University.

a] Syllabus of First year of Engineering is same for all branches. Here in theory course Environment component has got a weightage in ample amount. Pollution, Energy and water Resources are the major components of compulsory Environmental studies.

b] In first year's practical part practical's related Environment such as measurement of, Alkalinity, Dissolved oxygen, hardness of water have been included.

c] Civil and Environmental Engineering 2<sup>nd</sup> and 3<sup>rd</sup> have years syllabus in common.

In 2<sup>nd</sup> and 3<sup>rd</sup> years of civil/Environmental Engineering the theory course (compulsory) includes topics related to Natural resources, Natural Disasters, water management, Ecology, solid wastes, pollution etc.

In the practical part (compulsory) practical related to identification of Rocks, case studies of watershed management are included.

d] In the final year of civil Engineering Earthquake Engineering and water Resource Engineering are the major compulsory theory papers of study (100 marks, each) related to Environment In optional theory part out of 13 electives (100 marks each) in semi 3 are related to Environment management ie Advanced Engineering Geology, solid waste and Air Pollution Control

Out of 13 electives (100 marks each) in sem. II, 4 are related to Environment is Hazardous waste management, Industrial waste treatment, water power engineering and Remote Sensing Applications.

In practical part visits to water power stations, Analysis of ambient Air, automobile Exhaust, and solid wastes, study of Disposal system of a city, etc. are included.

e] In 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year Mechanical Engineering theory course the compulsory.

Energy Engineering and power plant Engineering are the major theory papers of 100 marks each.

In practical part study of pollution control devices, energy storage devices, measurement of ph, dissolved O<sub>2</sub> etc, visits to non-conventional power plant etc. have been included.

f] In Electrical and Electronics and telecommunication there has been no inclusion of Environment related concepts at 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> years of study.

4) About the Introduction of Environment Education at medical Course (M.B.B.S) of Shivaji University.

a] M.B.B.S. course is of 4 years period and divided into three phases – phase I, II, and III. In phase I, theory course includes the components such as Environmental Biochemistry, Impact of Pollution on Health, Hospital management etc. The practical component includes visits to sterilization section, primary Health center, Public Health Laboratory etc.

In Phase II theory course includes the topics such as waste disposal, waste treatment, Disposal of Hospital waste etc. The practical component includes sterilization, Physical and chemical methods of waste disposal, seminars on topics like Disaster management, Road Traffic Accidents, Population etc.

Phase III theory course includes the topics such as community development program, Health Planning and management and occupational Health etc. Practical part includes health Education activities in school, clinical case presentation on disasters etc.

Thus it can be said that medical course of Shivaji University has incorporated the Environment component in all its phases, both theory and practical part.

**Objective No. 2 – To identify the teaching strategies used for Environment Education by teachers in various Professional Education Colleges.**

- 1) For teaching EE & EE related components Lecture method is used by all (100%) Concerned teachers from B.Ed. colleges, Engineering colleges, Law colleges and Medical colleges.
- 2) Majority teachers from B.Ed. colleges and Law colleges (71% and 67% respectively) and half of the teachers from Engineering and Medical Colleges (50%) who teach EE & EE related components feel that discussion method is most appropriate for teaching EE & EE related components. Accordingly discussion method is also used for teaching EE & EE related components. However it is used by only some of the teachers in B.Ed. colleges, Engineering colleges, Law colleges and Medical colleges. (43%, 50%, 67% and 64% respectively)
- 3) Seminar method is used by only a few teachers in B.Ed. colleges, Engineering colleges and Medical colleges (43%, 25% and 29% respectively). However no teacher teaching EE related components in Law colleges use it.
- 4) Case study method is used by all the teachers (100%) for teaching EE related components in Medical colleges only. Project method is used by very few (29%) teachers for teaching EE in B.Ed. colleges only, while Excursion method is used by only a few (33%) Law college teachers for teaching EE related components.
- 5) Thus other than Lecture method, only discussion method is used for teaching EE & EE related components by some teachers in all the four

types of Professional Education colleges. Other important methods of teaching EE have not been accepted as a regular pattern of all the Professional Education colleges.

6) All (100%) concerned teachers from Engineering, Law and Medical colleges and majority (86%) concerned teachers from B.Ed. colleges use different teaching methods integrated together for teaching EE & EE related components.

7) Majority concerned teachers from B.Ed.colleges, Engineering colleges, Law colleges and Medical colleges (86%, 75%, 67% and 86% respectively) use lecture and question-answer method integrated together. All (100%) concerned Medical college teachers use case study & discussion method integrated together for teaching EE and EE related components. Project, Excursion, Seminar, Experimental methods and Games are integrated each separately with Discussion method for teaching E.E. However, their percentage is not high and their use is not found in all the Professional Education colleges. We can say that one mode of integration is used in one or the other Professional Education college but not in all colleges.

8) Any Special innovative strategy for teaching EE & EE related components is not used by the concerned teachers in B.Ed. colleges, Engineering colleges, Law colleges and Medical colleges.

9) Majority teachers from B.Ed. & Law colleges (57% and 66% respectively) feel that use of games, survey projects & discussion is important for teaching EE and EE related components while majority (57%) Medical college teachers feel that current and new knowledge should be given to the students.

10) Majority (75%) Engineering college teachers and a few B.Ed., Law and Medical colleges (43%, 33%, 43% respectively) take help of their colleagues for teaching EE and EE related components mainly for content enrichment and in selecting proper teaching strategy.

**Objective No.3 – To identify the resources available for Environment Education at various Professional Education colleges.**

- 1) Any other course related to EE has not been started in any of the B.Ed. College, Engineering college, Law college or Medical colleges.
- 2) All (100%) teachers who teach EE or EE related components in Engineering colleges, Law colleges and Medical Colleges have studied EE component at degree/ P.G.level. But only a few (43%) B.Ed. college teachers who teach EE have studied EE at Degree/PG level.
- 3) No teacher teaching EE or EE related components in B.Ed. colleges, Engineering colleges, Law colleges and Medical colleges has done any separate course related to EE.
- 4) All (100%) Medical college teachers and majority (67%) Law college teachers teaching EE or EE related components have received some sort of training in EE. But majority B.Ed. college teachers and Engineering College teachers (86% and 75% respectively) have not received any training in EE.
- 5) All (100%) Medical college teachers have undergone training related to EE for 3 yrs. in regular mode. However only a few teachers from B.Ed. colleges, Engineering colleges and Law colleges (14%, 25%, 33% respectively) teaching EE or EE related components have undergone training to in EE and that too of a very short duration i.e. 3 days to 1 week.
- 6) All (100%) Engineering and Medical Colleges have a separate Environmental Lab. However, B.Ed. and law Colleges don't have any separate laboratory for EE.

There are no practicals related to Laboratory as such in the Law course. However in B.Ed. Course there are practicals such as study of pollution and other environmental problems, study of ecosystem and preparing and using Environmental games. All those practicals require at least some sort of equipments/material which are not present in any B.Ed.

College. This is definitely affecting the quality of EE in B.Ed. Colleges and therefore may decrease the quality of EE in schools.

7) As reported by Lab Assistants in all (100%) Engineering and Medical colleges they have different all major important equipments for Environment related practicals in adequate quantity and in good conditions.

However, according to students in those colleges equipments for environment related practicals are not in sufficient quantity and some of them are not in good conditions, therefore face problems while doing practicals.

8) Lab. Assistants from majority (67%) Engineering Colleges face difficulties to maintain equipments because there is no other Lab. Assistant to help them. While few of them (33%) and Lab. Assistants from majority Medical Colleges face difficulties as students do not use the equipments properly.

9) According to Librarians from all (100%) Law colleges and librarians from majority B.Ed. Colleges, Engineering colleges and Medical Colleges (57%, 67%, 67% respectively) they have sufficient number of EE related books.

However, according to the students in those colleges books related to EE are not in sufficient numbers therefore majority of times they have to buy their own books.

10) Engineering colleges, Law colleges and Medical colleges prescribe EE related Journals. It indicates their interest in EE. However no B.Ed.college has prescribed any EE related Journal. It indicates their non-interest in EE.

11) All (100%) teachers from B.Ed. colleges, Engineering colleges, Law colleges and Medical colleges feel they are resourceful EE teachers. The reasons why they feel that they are resourceful EE teachers are as follows

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- i) They have studied EE at P.G. Level
- ii) They use different methods of Teaching EE
- iii) They have an experience of teaching EE.
- iv) They conduct Extra-curricular activities for EE.
- v) They work as resource persons in EE (except Engineering College EE related teachers.)
- vi) They do research in EE (except Engineering related and Medical College EE related teachers)
- vii) They have publications in EE (except Engineering college and Medical college EE related teachers)

**Objective No. 4 – To study the exchange of resources for Environment Education among various Professional Education Colleges.**

1) Majority (67%) medical colleges take help of other Institutes for organizing project work, workshops or programmes in imparting EE. Few (33%) Engineering colleges and very few (14%) B.Ed. colleges take help of other Institutes for organizing short tours and field visits and for organizing lectures of resource persons.

2) Majority (67%) Medical college teachers and very few (29%) B.Ed. college teachers teaching EE or EE related components help other Professional Education Institutes by delivering lectures on EE. The Medical college teachers also give demonstrations and conduct discussions on EE for common people. Their topics are-health Education, Environmental Health, School Health, Nutrition and Rural and Urban Settlements. B.Ed. college teachers deliver ½ teachers per year on general Environment and environmental problems for school students and teachers.

3) Few (33%) Engineering college teachers teaching EE or EE related components help other institutes by providing guidelines for project work

and workshops. Equipments and books are made available to students and teachers from other institutes by few (33%) Law colleges and few (33%) Medical colleges only.

4) Thus though there is exchange of assistance or help in different Professional Education Institutes it is not observed as a trend or pattern. The percentage of teachers teaching EE or EE related components who provide help to other Institutes is low.

5) Very few B.Ed. colleges, Engineering Colleges and Law colleges (14%, 25%, 33% respectively) and majority (67%) Medical Colleges organize lectures of resource persons from other institutes for teaching EE related components.

Thus exchange of resource persons is tried at considerable level by Medical colleges only.

6) Very few (14%) B.Ed. colleges invite resource persons from WWF few (33%) Engineering colleges invite resource persons from other engineering Institutes. Few (33%) Law colleges invite resource persons from other Law Education Institutes and forest Departments. Majority (67%) Medical Education Institutes invite resource persons from other Medical Education Institutes.

Thus there is exchange of resource persons but to a lesser extent and this exchange is mainly between the similar course institutes. The exchange of resource persons between different Professional Education colleges i.e. B.Ed. college and Law college, Law college and Engineering college etc. is not found. Such an exchange is necessary because the Professional education courses have many similar topics such as environmental components, Environmental problems, Environmental laws, Environmental management etc and the exchange of resource persons will create a greater understanding of the topic as a whole.

7) Very few (14%) B.Ed. colleges are associated with Environmental NGOs i.e. WWF (World Wide Fund) Rest of B.Ed. colleges (86%) and

Engineering, Law and Medical colleges are not associated with Environmental NGOs

8) B.Ed. colleges which are associated with WWF arrange slide shows & field work in collaboration with it.

9) Majority (67%) Medical colleges are associated with other Institutes for EE such as HFWC, Zilha Parishad and Public Health Lab and organize Health camps, Slide shows and lectures in collaboration with them.

10) Very few (14%) B.Ed. college teachers & majority (67%) Medical colleges teachers feel that students get benefited from the programmes organized in collaboration with Environmental NGOs especially in updating their knowledge.

11) B.Ed., Engineering, Law and Medical colleges do not exchange EE related books with other institutes.

12) Majority (67%) Medical colleges exchange materials required for EE practicals such as charts and models. Engineering colleges do not exchange equipments or materials required for EE practicals with other colleges.

13) For EE purpose students from other institute visits majority (67%) Medical colleges. However such visit to B.Ed. colleges Engineering colleges and Law colleges are not arranged.

14) For Environment Education purpose majority (67%) Medical colleges are visited by School Students and Science faculty students while few (33%) Medical colleges are visited by Arts Faculty students and MSW (Master of Social Welfare) Students.

15) Engineering and Medical colleges do not lend any material for practicals from other institutes.

16) Students visit to majority (67%) Medical colleges for project work in EE. and few (33%) Medical colleges for exhibitions related to EE.

**Objective No. 5 – To study the difficulties of teachers while teaching environment education at various professional education courses.**

1) The other difficulties faced by EE teachers in different Professional Education colleges are as follows :

i) Students response is less (according to few B.Ed. and Law college teachers and half of the Engineering college teachers who teach EE or EE related subjects.

ii) Memory oriented system causes barriers in EE (according to few B.Ed. college and Medical college teachers and majority law college Teachers who teach EE or EE related subjects.

iii) Absence of Laboratory materials is a difficulty in EE (according to few B.Ed. college Teachers who teach EE or EE related subjects.

2) Majority B.Ed., Engineering, Law and Medical colleges teachers who teach EE or EE related subjects (57%, 75%, 67% and 79% respectively) face the difficulty of completing the curriculum in time if they use different teaching strategies for EE. They take extra lectures whenever necessary. Similarly they use transparencies and also try do time management.

3) Few B.Ed. and Law college teachers (14% and 33% respectively) face problems related to concept clarity while teaching Environmental Education and related concepts.

4) Few (14%) B.Ed. College teachers face the problems related to the conduct of practicals in Environment Education.

### 5.3 Conclusions :

1. Weightage given for Environmental Education in B.Ed. course is very less B.E. Civil, B.E. Mechanical, LL.B. and M.B.B.S. Courses have included the Environment Education component related to their respective professions in both compulsory and practical part.
2. Other than Lecture method, only Discussion method is used for teaching Environment Education and related components in all the Professional Education courses. Integration of different methods for teaching Environment Education and related components is also not observed as a regular pattern.
3. Environment Education Teachers in all the Professional Education colleges except 67% teachers in B.Ed. colleges have studied Environment Education at degree/PG level.

Majority Environment Education teachers in Medical and Law colleges have received some sort of training in Environment Education. However majority Environment Education teachers in B.Ed. and Engineering colleges have not received any training in Environment Education.

- 4) Engineering and Medical colleges have equipment and materials related to Environment Education in their Labs however as reported by the student some of them are not in good condition and some of them are not in sufficient quantity.

As reported by the students in all the Professional Education Colleges Books on Environment Education are not in sufficient quantity.

- 5) Exchange of resource persons, other kind of expertise and materials is tried at considerable level by Medical Colleges only.
- 6) The main difficulties of teachers all the professional education colleges regarding Environment Education are rigid and heavy curriculum, students less response, memory oriented system.

#### 5.4 Recommendations for objective No.1

**Objective No.1** To analyse the syllabi of various Professional Education courses of Shivaji University with reference to Environment Education.

**For university and Environment Education B.Ed. Colleges.**

1) In B.Ed. course of Shivaji University Environment Education has been given very less weightage.

If environment Education has been made compulsory at all levels then B.Ed. courses should also incorporate it as a compulsory topic.

Secondly the Environmental concepts, problems etc. have been included at all undergraduate disciplines therefore in B.Ed. Course they can be given very less weightage. However the Environmental Education part i.e. curriculum, teaching learning methods, evaluation etc are needed to product well equipped teacher of Environment Education.

2) In practical component lesson planning for effective Environment Education, integrated in various subjects as well as separately should be included. :

**For University and Engineering Colleges**

One or the other way every branch of Engineering is related to Environment.

**Objective No.2** To identify the teaching strategies used for Environment Education by teachers in various Professional Education colleges.

**For teachers :**

1) In Professional Education Colleges besides the lecture method other methods like Discussion, Projects, Seminars should be used as per the need of topics. These methods and the time to be given should be mentioned in the syllabus itself.

2) Majority teachers from all Professional Education Colleges Feel that Discussion method is most appropriate for teaching EE & EE related components. But most of time they do not use it.

Use of Discussion method for teaching of EE & EE related components should be encouraged.

- 3) Use of Seminar method should be made compulsory in B.Ed. and Law Courses. In Medical and Engineering courses compulsory seminars are included in syllabus. Seminar is the student-centred method which helps in creating good study habits.
- 4) Integration of different teaching methods can be done for effective teaching of Environment Education. For example slide show can be integrated with question-answer method. For this training to teachers is required.
- 5) Special innovative strategies should be, planned and used for teaching Environment Education and related components as per the need.
- 6) Discussion with colleagues for teaching Environmental Education and related components for content environment and selecting proper teaching strategies to overcome difficulties can help in improving teaching.

**For University –**

- 7) Workshops and orientation programmes in Environment Education should be organized for teachers of Professional Education courses. The teachers of Professional Education courses. The teachers should be given training in use of different teaching-learning strategies for Environmental Education.
- 8) The course structure of Professional Education should be so flexible that use of different teaching methods in Environmental Education is feasible.

**Objective No.3** To identify the resources available at various Professional Education Colleges.

**For University –**

- 1) Short-term courses for teacher in Environment Education related to Teacher training, Law, Engineering and Medicine should be started.
- 2) Training in Environment Education should be made compulsory for the teachers in Professional Education Colleges especially in Law and B.Ed. Colleges who teach Environment Education and have not studied Environmental component at their degree/P.G.Level.

**For Teachers**

- 3) Separate Courses related to Environment Education can should be undertaken teachers from Professional Education Colleges to enrich their knowledge. Many distance – mode courses are run by different Institutions. These can help the EE teachers.

**For Colleges**

- 4) Some practicals from B.Ed. Syllabus require at least some sort of equipments/materials such as Binocular, pH meter, Microscope, Environmental Games etc. which are not available in B.Ed. Colleges. They should be made available and kept in the common Laboratory.
- 5) Though, all important equipments required for environment related practicals are available in Engineering and Medical Colleges, their quantity and quality should be maintained as per the students requirements.
- 6) An assistant (may be on daily wages) should be appointed to help Lab Assistant in all Engineering and Medical Colleges, so that maintenance of Lab is easily and qualitatively done.
- 7) Sufficient number of books on Environment Education should be made available in Libraries of the Professional Education Colleges.
- 8) Important Journals related to Environment education should be made available in B.Ed. Colleges. These Journals are available in the Libraries of Professional Education College except B.Ed. Colleges.



**Objective No. 4** To study the exchange of resources for Environment Education among various Professional Education Colleges.

**For Colleges and NGOs**

1) Professional Education Colleges and Environment related NGO's should work in Collaboration with each other so that students and teachers get benefited from it in the form of books, necessary materials and equipments and also for organizing field visit and lectures of resource persons.

**For teachers and Universities**

2) The exchange of expertise among various Professional Educational Colleges should be encouraged because Environmental Education is an interdisciplinary subject. For example Environment Law is a topic included in B.Ed., B.E. and LL.B.syllabus.

The person from Law faculty can explain this topic better than the persons from Engineering and Education Faculty.

The Universities can suggest such exchange under programmes for quality Improvement in Environment Education at Professional Education courses.

**For Colleges and Teachers**

3) The Engineering and Medical colleges Laboratories have many equipments with which environmental Factors are studied scientifically e.g. pH meter, conductivity meter, Nephelometer etc. B.Ed. and Law syllabus includes the topics related to pollution and other basic factors which can be studied in Laboratory more effectively. However B.Ed. Colleges and Law colleges have no Laboratories. In such situation B.Ed. and Law College students can visit to Engineering and Medical College Laboratories and understand the processes related to Environment by direct experiences.

**Objective No.5** To study the difficulties of teachers while teaching Environment Education of various Professional Education Colleges.

**For Teachers**

- 1) Use of technology base teaching strategies should like use of transparencies, power point presentations etc should be done.
- 2) Some topics from syllabus must be given for self-study i.e. for seminars, panel discussion, projects etc. due to which difficulties of time management for syllabus completion can be overcome. and students can also participate in learning activity.
- 3) Teachers from B.Ed. Colleges and Law Colleges face the difficulty of concept clarity.

To overcome this difficulty discussions for those teachers should be held.

- 4) B.Ed. College teachers face the difficulty in conducting practicals. Short term (1 or 2 days) guidance programmes can be organized for them.

**5.5 Discussion**

The researcher has tried to investigate the introduction of Environment Education at different Professional Education courses of Shivaji University. The main purpose of this was to see whether proper weightage is given or not as far the particular profession is concerned. Further the main emphasis has been given on finding out the inclusion of Environment Education in B.Ed. course because this is a research concerned with faculty of Education.

The endeavour therefore was mainly directed towards the study of inclusion of the Environment Education component in the Professional Education course and then investigating into the teaching learning methods, availability of resources both human and non-human. The main focus has been given on the study of exchange of resources.

Any previous study directly related to this research has not been identified. Therefore the findings of this research could not be compared with the findings of previous researches.

This research has mainly contributed in putting forward the main issues of consideration such as less weightage to environment education in B.Ed. course and less exchange of resources available among various Professional Education colleges similarly the difficulties of teachers regarding Environment Education such as students less response and memory oriented examination system have been identified so that if these issues and difficulties are dealt with care then the future of Environment Education in Professional Education Colleges is and therefore the whole Environment is bright.

#### **5.6 Topics for further study**

1. Study of Environment Education Introduced in Vocational courses can be done.
2. Study of Environment Education At Master Degree courses of Shivaji University can be done.
3. Comparative study of Environment Education in various Professional Education courses. can be done.
4. Comparative study of Environment Education from different universities can be done.
5. Role of NGOs and Environment related Institutions in imparting Environment Education can be studied.