

# **CHAPTER - 1**

## **CONCEPTUAL FRAME WORK**

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#### **1.0.0 Introduction**

As we are approaching twenty-first century one can see a perceptible change in the global arena. The knowledge is growing very fast and it also becomes obsolete soon. With every passing day, the human and material costs of providing a product or service seems to be going up, while the resulting quality is either wavering or going down. Organisations are becoming increasingly rigid and difficult to change. The older and more complex organisations in our society are business firms, governmental bureau's, labour unions, churches, hospitals universities and schools. Today, Organisations face multiple challenges and threats to effectiveness, efficiency and profitability, challenges from turbulent environments, increased competition and changing customer demands. Keeping organisations healthy and viable in today's world is a daunting task. Organisations and the individuals in them face an enormously demanding present and future. Are there any strategies and technologies available to help people and organisations cope, adapt, survive and even prosper in these vexing time? A variety of solutions exists, and organisation development is one of them. Organisation development is a process for teaching people how to solve problems, take advantage of opportunities, and learn how to do that better and better over time. Organisational development focuses on issues, related to the "human side" of the organisation by finding ways to increase the effectiveness of individuals, teams, and the organisations' human and social processes.

Organisation development can be done in various ways by following process entry, contracting, diagnosis, feedback, planning change, intervention and evaluation. The intervention can be through infrastructural change, change in policies, through reengineering, educating, training, empowering, quality circles, total quality management, parallel learning structure, team building etc.,

### **1.0.1 Concept of Intervention**

The term OD intervention refers to the planned activities clients and consultant participating during the course of an organisation development programme. These activities are designed to improve the organisations functioning by helping organisation members better manage their team and organisation cultures and processes knowing the OD interventions and the rationale for their use shows you how change takes place in OD programs because interventions are the vehicles for causing change.

OD interventions are sets of structured activities in which selected organisational units are (target groups or individuals) engaged in a task or a sequence of tasks, where the task goals are related directly or indirectly to organisational improvement. The practitioner brings four sets of attributes to the organisational relationship; a set of goals and objectives for the practitioner and the organisation and its members; and a set of structured activities that are the means for achieving the values, assumptions, and goals. These activities are what we mean by the word intervention.

### **1.0.2 Purpose of Intervention**

Interventions are helpful in maximising effectiveness, efficiency, relevance, speed etc., and to minimise psychological and organisational strain. Organisations make use of various resources in an optimum way to achieve a set of predecided goals. Out of all the different resources, human beings are the most important one. They can bring effectiveness or ineffectiveness in the system, depending on their motivation and training they have.

### **1.0.3 Schools as Organisation**

Schools are also formal organisation. Schools have a basic objective of all round development of the children, and to bring best of the head, heart and hand. They achieve their objectives through various resources such as teachers, management bodies, finance, administrators and government officials, material, curriculum, text book and time. Teachers come directly in contact with the client system that is the students, by the way of curriculum transaction. No wonder Education Commission (1964 - 1966) remarked "The destiny of India is shaped in her classrooms". The school prepares the future citizens.

Schools are places where children come to learn and achieve.( Jangira 1994). Schools plays a vital role in development of individuals in terms of - cognitive, affective and psychomotor aspects, leading to all round development of an individual. The potential in a young child are realised, through formal education process, in such a way that they can contribute in the process of nation building. We will have to teach and train children for future requirements. This training can be formal or non formal, Primary, Secondary, and Higher

secondary are the stages of formal school education, of which primary is very vital as it lays foundation for the future.

#### **1.0.4 Primary Education**

Primary Education is the first step of formal education it comes after kindergarten and before secondary stage. Primary education is divided into lower primary and upper primary. " It is here where the basic skills are learned like reading, writing, numeracy, gain power to articulate and to express with self confidence (Jallaludin 1988). The child of today is the builder of tomorrow. It is only through a well designed and effectively implemented educational program, the child could be equipped to realise his inner potential and to contribute meaningfully to Nation building.( Malhotra 1988). Thus, primary schools play a vital role by laying the foundation stone of education. Primary education has evolved to its present stage from a long time. Its history is as old as formal education though its form has undergone a change.

#### **1.2.0 Historical Development of Primary Education in India.**

Primary education in the vedic age was initially provided by parents and other adults in the surrounding after doing some ceremonies. When the children grew up, they were sent to Gurukulas. The Gurukulas were residential schools. These schools catered to the students of Brahmins, Kshatriyas and Vaishyas. The students belonging to the lower caste that is the shudras were not allowed to enter in the school due to the concept of untouchability. Mugal regime started schools for teaching Urdu and religion. These schools were called as Madrasas. The Madrasas had a Kazi or the Mullah as their teacher. In the British era, with

the advent of missionaries in India, the backward communities got access to primary education. Education in the British era became little more organised. There were different types of schools i.e. the Hindu schools, the Madrasas of the Muslims and schools of the Britishers. This era was also marked with many movements of social reformers and technological advancements. During the British rule in India, prominent leaders of the freedom movement had fully realised that the education of the masses was the most important instrument of economic and social regeneration of India. It was, therefore, natural that these sentiments found expression in the various provision of the constitution. Commission after commission has stressed the need for the realisation of the objective of article 45 but the same is still elusive. Article 45 reads ' The state shall endeavour to provide within a period of ten years from the commencement of this constitution, for free and compulsory education for all children upto the age of fourteen years'. State is defined as the government and parliament of India and government and the legislature of each of the state and all local or other authorities within the territory of India or under the control of the government of India. In 1906 Baroda was the first state to establish free and compulsory primary education, in the regime of the than Sir Sayajirao Gaekwad.

### **1.2.1 Primary Education In the Post Independent Era**

Since independence the government of India formulated number of interventions in the form of policy recommendations to achieve universal elementary education. Various commissions and committees have studied

problems of primary education. They have also given various recommendations to improve primary education.

### **1.2.2 Education Commission (1964 -66)**

Education Commission 1964 -66 mentioned that the state shall strive to provide free and compulsory education for all children upto the age of 14 years. This was to be achieved by 1960. But due to number of reasons such as lack of adequate progress in primary education of girls, large numbers of children of the backward classes, general poverty of the people and the illiteracy and apathy of parents, it was not possible to make adequate progress in primary education, and the constitutional directive has remained unfulfilled. Education commission has also given some strategies to fulfil the directive, they are as follows.

Each state, and even each district should prepare a perspective plan for the development of primary education taking into account the stage of development already reached and local conditions and problems. The objective of the plan should be to fulfil the constitutional directive as early as possible.

Each state and district should be assisted to go ahead at the best pace it can, and the progress in no area should be allowed to be held up merely for want of essential facilities or financial allocations; and While the constitutional directive will be fulfilled in some places such as urban areas or advanced states as early as in 1975-76, all the areas in the country should be able to provide five years of good and effective education to all the children by 1975-76 and seven years of such education by 1985-86.

### **1.2.3 National Policy of Education (1968)**

The national policy of education maintained that strenuous efforts should be made for the early fulfilment of the directive principle under Article 45 of the constitution, seeking to provide free and compulsory education for all children up to the age of 14. Suitable programme should be developed to reduce the prevailing wastage and stagnation in schools and to ensure that every child who is enrolled in school successfully completes the prescribed course.

### **1.2.4 Ishwarbhai Patel Committee Report**

Review committee report, chaired by Ishwarbhai Patel Committee has given some objectives of primary education they are as follows.

1. Acquisition of tools of formal learning, namely, literacy, numeracy and manual skills.
2. Acquisition of knowledge through observation, study and experimentation in the areas of social and natural sciences.
3. Development of physical strength and team spirit through sports and games.
4. Acquisition of skills of purposeful observation.
5. Acquisition of habits of co-operative behaviour within the family, school and community.
6. Development of aesthetic perception and creativity through participation in artistic activities and observation of nature.
7. Development of social responsibility by inculcating habits individually as well as collectively of appreciation of the culture and life styles of persons of other religions, regions and countries and readiness to serve the weaker and the deprived.
8. Development of the desire to participate in productive and other processes of community life and to serve the community.

### **1.2.5 Draft National Policy on Education (1979)**

Draft national policy on education 1979 mentioned that highest priority must be given to free education for all up to age of 14 as laid down in the Directive Principles of the Constitution. Education up to this stage should be general and not specialised, and should give pupils a confident command of language and tool subjects and a scientific attitude. Elementary Education should be an integrated stage. The ascent in elementary education should be on the development of personality and character. The content of the elementary education needs to be restructured keeping in view not only the tradition and values that make up the countries composite culture but also the present realities and the vision of a common future. The content of education at this stage should include language, arithmetic, history and simple elementary science, with special reference to **Environment Cultural Values** and physical education.

### **1.2.6 Curriculum Load At The School Level - A quick appraisal (1983-85)**

Curriculum load at the School level focused on **child centred approach** as a warm welcoming and encouraging approach, in which all concerned would share a solicitude for the needs of the child to attend school and learn. It also mentioned that a child centred and activity based process of learning should be adopted at the primary stage and by 1995 all children would be provided free and compulsory education upto 14 years of age.

### **1.2.7 The National Policy on Education (1986)**

The National Policy on education has laid great emphasis on universalisation of elementary education, assuming that the universal elementary education is achieved by 1990. Out of the total age specific population of 17.4 crores, 11 crore pupils need to be in primary stage and the remaining 6.4 crores in the middle stage. It may be noted that this achievement implies that the primary education will be 1.5 times and the middle will be 3.2 times of its present size. It seems that this was not achieved due to the grim reality prevalent in our socio-economic system. Unless large scale wastage is reduced to minimum and other objective conditions are fulfilled, the target of universalisation of elementary education will remain pious will.

### **1.2.8 Programme of Action - National Policy of Education (1986)**

National policy of education had proposed some measures to improve the quality of elementary education which included reform in the content and process of education, improvement of additional teachers and the comprehensive programme of teacher education. Minimum levels of learning were to be laid down for each stage, which would naturally include laying down such norms for the primary and upper primary stages. The central feature of the implementation strategy will be area specific and population specific planning. About 75% of the out of school children are in nine states : Andhra Pradesh, Assam, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal. While these states have been treated as educationally backward, pockets and groups in other states. Even within the

educationally backward states there are wide disparities which require special treatment. Sustained efforts will be made to revitalise the educational system of the backward states and effort will also be made to see that all backward areas and population pockets make progress to keep in step with others in their milieu. The emphasis will now shift from sheer enrolment to retention and quality of education. Keeping in fact that situation of elementary education varies from one part of the country to another and sometimes within one district, and even one block, the process of running will be decentralised and the teachers as well as the local community fully involved in this process.

**Operation Black Board.** It is a follow up of National Policy of Education 1986. The purpose of Operation Blackboard is to ensure provision of minimum essential equipment. Use of the word operation implies that there is an urgency in this programme, that goals are clear, well defined and that government and the people are determined to achieve those goals within a predetermined time frame. Operation Black board envisages (i) two reasonably large rooms that can be used in all weather (ii) necessary toys and games material (iii) black boards; (iv) maps; (v) charts; and (vi) other learning materials.

#### **1.2.9 Yashpal Committee report (1993)**

The dropout according to the Yashpal Committee report 'Learning without Burden' is due to the manner in which syllabus is covered in the average classroom, is by means of reading the prescribed textbook aloud with occasional noting of salient point on the black board. In rural India, there are basic problems such as abysmally poor condition of schools, absenteeism among teachers may

cloud the problem of curriculum load. The high rate of dropouts has its origin in the curriculum. It takes away the element of joy and inquiry from learning, which obviously contributes to the rate at which children leave school in the early years, undoubtedly, under the force of economic and social circumstances.

#### **1.2.10 National Policy on Education (1992)**

Estimated population in 1993: 896,567,000; Annual population growth rate, 1980-93: 2.0%; GNP per capita in 1990:\$350; Duration of primary education: 5 years. The National Policy on Education, adopted in 1986 and up dated in 1992, was a landmark in Indian education as it provided both a comprehensive framework for the development of education up to the end of the century and a plan of action assigning specific responsibilities for organising, implementing and financing its proposals. It gives unqualified priority to primary education and adult literacy programmes.

The National Policy on Education tempers idealism with realism, conceding for the first time that schooling cannot reach all children in the near future. Millions of girls and working children will be excluded. So It plans a large and systematic non- formal education programme combining flexibility with quality in order to reach them. School building are being made more attractive and incentive schemes such as school lunches are being widely implemented. But despite enormous progress, India faces huge challenges. of the estimated 153 million children between 6-14, there are 28 million out of school, over 14 million of whom are working. Nearly half of those entering grade one drop out before grade five and two third before grade eight. Levels of achievement remain low

with researchers reporting a miniscule percentage of students achieving mastery at their grade.

#### **1.2.11 District Primary Education Programme (1992)**

National Experience with regard to Universalisation of Elementary Education has established the following; universal elementary education is contextual: The contextuality varies widely across the country. Even in states like Kerala where participation is near universal much is required to be done in respect of quality and achievement. In such states the pursuit of universal elementary education would be mainly in the areas of quality, facilities and achievement. In other states like Bihar, Uttar Pradesh and Orissa participation and demand aspects need more attention. Contextuality entails local area planning and management. Planning for universal elementary education had hitherto been mainly at national and state level. Barring some states and Union Territories, these entities are too large and heterogeneous for effective planning: they can not provide contextuality. Ideally the planning should be from below, right from the village upwards but given the objective conditions, a beginning has to be made with district as the unit of planning. The district plans are to be prepared through an intensive process of interaction with the local bodies, teachers and Non governmental organisations so that it is owned by all who are to be associated in implementation and it reflects the ground level realities. Resources are an important but not sufficient condition for achieving universal elementary education. A host of measures both financial and non-financial, both on the supply side and on the demand side, need to complement higher

allocation of resources. The strategies for universal elementary education have hitherto emphasised mainly access in terms of construction of classrooms and appointment of teachers. This has been inadequate and needs to be augmented by;

- a. A holistic planning and management approach which goes beyond implementation of a disjointed set of individual schemes, perceives the task of universal elementary education in its totality integrates all the measures needed to achieving universal elementary education in the specific context of the district;
- b. This holistic planning should incorporate a gender perspective in all aspects of planning and implementation process and be an integral part of all measures needed to achieve universal elementary education.
- c. Addressing the more difficult aspects of access particularly to girls, disadvantaged groups and out of school children;
- d. Improving school effectiveness;
- e. Strengthening the alternatives to schooling particularly the non formal education;
- f. Stressing the participative processes whereby the local community facilitates participation achievement and school effectiveness;
- g. Toning up teacher competence, training and motivation;
- h. Stressing learning competence and achievement;
- i. Stressing need for improved teaching / learning materials;
- j. Streamlining of planning and management in respect of both routine and innovative areas; and

k. Convergence between elementary education and related services like Early childhood care and education and school health.

#### **1.2.12 Decentralised Management of Elementary Education**

Elementary education has been decentralised according to the 74 th Amendment the Panchayat will take an active part in increasing the participation of community towards attainment of elementary education goals. The committee's will have representations from various factions of the society. One third representative will be women.

It can be clearly envisaged that number of Commissions and Committee's were appointed since independence. All of them aimed at attainment of universal elementary education. But the final result was post poned every time. Though the directive principle was given in the constitution state was not provided with adequate facilities to achieve. The first commission that is University commission emphasised on higher education. The secondary education committee emphasised on secondary education. It was only in the education commission 1964-66 that primary education was given some importance. After that a serious thought on primary education was given in National Policy on Education 1986. It emphasised to provide primary education of good quality. It also made provision for necessary facilities of an all weather classroom, some teaching aids for classroom under the scheme of Operation Blackboard. The National Policy on Education 1992 gave a new scheme for achieving elementary education with the financial support from international agencies that is the District Primary Education Programme. DPEP is the scheme provided to those districts

which have a low literacy than national average. Where women's literacy is below the national literacy average. Where total literacy campaign has been successful. The role of non formal education and also the role of non governmental organisation was emphasised to achieve the target of universal elementary education. The decentralisation policy was implemented for local community participation to achieve universal elementary education. The non achievement in the earlier years was attributed to the non availability of funds, it may be possible with the foreign aid and the decentralised policy to achieve the targets. Apart from policy interventions government has developed primary education through the five year plans.

#### **1.2.13 Primary Education in Five Year Plans**

Provision of free and compulsory education was considered as necessary and important stage by the government and has been given place in the five year plans.

##### **According to First five year plan (1951-52 to 1955-56).**

The provision of free and compulsory primary education is the first necessary step towards establishing equality of opportunity of every citizen. The foremost task in the field of primary education is the improvement of technique and the development of methods, by which it can be passed on to the vast majority of teachers of rather low educational qualifications and average ability.

It also recommended that all states, should run, wherever conditions permit, eight year full fledged basic schools instead of five year schools. As regards to the question of primary education, it was felt that in view of the poor return from

it, the tendency to open new schools should not be encouraged and as far as possible, resources should be concentrated on basic education and the improvement and remodelling of existing primary schools on basic lines, as far as that can be done with the personnel available.

#### **1.2.14 Second five year plan (1956-57 to 1960-61)**

Mentioned that the problem of basic education at the elementary level were mainly two: The expansion of existing facilities and the reorientation of the system of education on basic lines. Both are equally urgent tasks and vital to social and economic development. An aspect of the situation which causes concern is the wastage which exceeds 50% at the primary stage. Thus out of 100 pupils who join the first class at school scarcely 50 reach the fourth class, the rest dropping out before completing four years at school. The wastage is greater in the case of girls. Closely allied to the problem of wastage is that of stagnation that is a pupil continues in the same class for more than the normal period. To prevent wastage the introduction of compulsion is essential. A most urgent problem is that of girls education. The shift system is recommended, not as an ideal method but meet certain practical difficulties. Government resources will have to be supplemented in increasing measure by local community effort. Each state should consider enacting legislation to enable local authorities to levy a cess for education.

#### **1.2.15 Third five year plan (1961-62 to 1965-66)**

Mentioned that there is a large gap still existed between the proportion of boys and girls attending school. Introduction of compulsion, appointment of

trained and qualified teachers, improvement in the methods of teaching, greater understanding on the part of parents of desirability of telling their children remain at school and the planning of holidays, so that they coincide with the harvesting and sowing seasons are among the steps to be taken to reduce the incidence of stagnation and wastage. The main problems were found in a more accentuated form in the age group 11-14, specially in rural areas.

#### **1.2.16 Fourth five year plan (1969-70 to 1973-74)**

Focused on the age group 11-14 as the problem was much more difficult because majority of the parents in rural areas withdrew their children from schools. The problem needed special attention in Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh.

#### **1.2.17 Fifth five year plan. (1975-79)**

Mentioned that adequate provision had been made for additional enrolment in terms of teaching personnel and construction of classroom, especially in backward areas. In addition to the expansion of educational facilities, provision has been made for curricular re-orientation, work experience and strengthening of educational institutions for the training of teachers.

#### **1.2.18 Sixth five year plan. (1980-85)**

The approach in the sixth plan is for all the states, which are yet to universalise the primary education, to reach Universalisation (class I-V), upto the age of 11 years, in the next five years, and in the case of other states, to achieve a substantial increase in the enrolment at the middle stage (class V-VIII) of children upto 14 years so as to move towards the goal as fast as possible.

Programmes for non formal learning would be organised and oriented towards target groups and decentralised in regard to their contents, course duration, place and hours of learning and pattern of instruction. It is proposed to establish special monitoring arrangements at the centre and the state level to review progress of elementary education particularly of the target groups which are yet to be provided with universal elementary education.

Apart from providing schooling facilities, they would be supplied with mid day meals, free books, uniforms, and stationary as well as attendance scholarships, as incentives.

Programmes such as designed to promote learning while earning would also be promoted to overcome economic reasons hampering their educational development.

#### **1.2.19 Seventh five year plan.(1985-90 )**

Seventh five year plan said overriding priority will be given to realising Universalisation of elementary education for children in the age group 6-14 years 1990; this will continue to be part of the minimum needs programme. The emphasis will shift from mere enrolment to retention of pupils in schools and the attainment by them of basic elements of learning. The objective is sought to be achieved through a combination of formal and non formal methods, focusing sharply on the need of girls and children belonging to the economically backward and weaker sections. Sustained efforts will have to be made to reduce the number of dropouts. The number of children to be covered by the non formal programmes is reckoned to be of the order of 25 million. Non formal system

made flexible and appropriately linked to the formal system should be made more flexible and appropriately linked to the formal system. Special operational targets will be required to be worked out by the state governments concerned with children at the primary stage of education. Lower enrolment and retention are due to poor school facilities, unrelated curriculum, poor methods of teaching and poverty. Suitable supportive programmes for the provision of incentives will be introduced or expanded selectively according to local requirements.

In the seventh plan the focus of effort will be on promotion of girls education. Community support and financial contributions will be mobilised especially for clearing the backlog of physical facilities and school buildings.

#### **1.2.20 Eighth five year plan 1992 to 1997**

Eighth five year plan said universalisation of elementary education and complete eradication of illiteracy among the people in the age group 15 to 35 years have been recognised as a priority objective in the directional paper of eight five year plan. The total cumulative enrolment at the end of 1991- 1992 was about 13.5 crore. In quantitative terms, the objective implies that we have to enrol additionally about 5.5 crore children. In regard to adult education we have to cover about 10 crore adult illiterates in the age group 15 to 35 through total literacy campaigns and through on going central based schemes in backward, hilly and inaccessible areas.

The modalities of achieving these targets would be adoption of the decentralised approach to educational planning and management at all levels through panchayati raj institutions, participation of voluntary agencies and

development of innovative and cost effective alternative programmes including the open learning system to the extent possible, supported by distance education techniques.

All five year plans have emphasised vitality of elementary education. They have also shown various ways for achieving the goals of primary education. Some of them are as follows; reorienting curriculum according to the needs of children, making curriculum relevant, opening and closing of schools according to the harvesting season, introducing shift system, training teachers, reducing wastage and stagnation, opening of non formal avenues, involving the community, introducing educational cess to meet financial burden and introduction of minimum levels of learning can bring down some of the problems faced by primary education in India.

### **1.3.0 Efforts Made by Non Governmental Organisation towards Universalisation of Elementary Education**

Apart from various efforts on part of government, the community is helping the government in achieving the goals of primary education through various non governmental organisation. Such organisations are working in different states to achieve the goals of primary education.

#### **1.3.1 Mahila Samakhya (1986)**

In pursuance of the National Policy on Education 1986, **Mahila Samakhya** was launched in April 1988 which seeks to mobilise rural women through Mahila Sanghas in each of the villages concerned. As an Indo-Dutch programme, it gets 100 percent assistance from the government of the Netherlands. The

programme revolves around village level activators called sakhis or sahyoginis who mobilise women on issues such as access to health, water, education and general information about development programmes, and so forth. The main focus of the programme is to generate demand for education. The programme is operational in 1500 villages in 10 districts of Karnataka, Uttar Pradesh and Gujarat.

The Mahila Samakhya empowers women to become self confident, articulate, spontaneous, creative, to face authority, becomes aware of themselves, make decisions, ability to interact with other people, increase their self esteem and respect.

### **1.3.2 Lok Jumbish**

Lok Jumbish is a peoples movement for universalisation of primary education in Rajasthan. The goals of Lok Jumbish are as follows:

1. Providing access to primary education to all children
2. Ensuring that all children complete primary education
3. Emphasis on quality of education an effort to ensure that all the children achieve at least minimum levels of learning.
4. Making modification in content and process of education an instrument of women's equality.
5. Bringing girls to same level as boys and making education an instrument of women's equality.
6. Effective involvement of people in educational management.

According to Lok Jumbish the educational backwardness is due to low status of women, community does not care for teachers and teachers donot care for school and children, lack of peoples involvement and quality of education is poor, it demotivates parents. Lok Jumbish is an innovative approach with education policy 1986. It provides access to education through school mapping. Trough micro planning it monitors participation and retention. It stresses on people's and teachers' involvement.

Lok Jumbish is based on a comprehensive diagnosis of the causes of Rajasthan's educational backwardness. Each cause has been analysed and strategies and programmes developed to deal with it. Specific investment and management aspects in respect of each programme have been worked out. Strategies and programme are reviewed regularly and midcourse corrections made.

### **1.3.3 Shiksha Karmi**

The **Shiksha Karmi** project is being implemented in Rajasthan since 1987 with assistance from the Swedish International Development Agency with the aim of universalisation of primary education in selected remote and backward villages of the state. The project identified teacher absenteeism as the major obstacle in achieving the object of universalisation of primary education. It envisages substitution of the primary school teacher by a team of two locally educated workers called Shiksha Karmis for whom educational qualifications prescribed for teachers are not insisted upon. They are however provided training and academic support on a sustained and intensive basis to enable

them to carry out their duties. The existing primary school when run by Shiksha Karmis is called day centre. Shiksha Karmi also runs a Night Centre for children who cannot attend day centres. The project envisages training centres for preparing local women to function as Shiksha Karmis.

#### **1.3.4 Saraswati Scheme**

Rajasthan has another scheme to take educational facilities for girls, this scheme is known as **Saraswati Scheme**. The scheme provides non formal education to girls. The scheme was launched in 1994-95, has expanded after its success in rural areas where conservative communities and parents do not allow the girls to attend day school or where there was no access to primary schools. Under the scheme the educated women living in the rural area are identified for imparting primary education to girls at their homes. These women teachers are then provided intensive training for 37 days to make them Saraswati bahins. After training they run Saraswati Centres and the state government provides them a one time allowance of Rs. 600 for acquiring teaching learning aids for their centres. They are expected to take care of take care of 20 girls at each centre.

#### **1.3.5 Lok Shalas**

Lok Shala is a project for universalisation of Elementary Education to demonstrate an alternative vision in primary education. It was launched in March 1995, it is a joint collaboration between Bharat Jan Gyan Vigyan Jatha (BJGVJ) and Maulana Azad Centre for Elementary and Social Education (MACESE), Department of Education, University of Delhi. BJGVJ has active units in more

than 300 districts, they will help in the implementation of the programme. The academic charge of the programme has been given to MACESE, it will guide in doing research, training, evaluation and monitoring. The MACESE faculty members will act as the resource persons for the aforesaid programme. They will form the Central Resource Persons. These Central Resource Persons will train Central Resource Teams. The training will be in the form of intensive training for a short period. The Central Resource Persons along with the Central Resource Teams will form the Central Co-Ordination Committee. Members of the Central Resource Persons will train Regional Persons, who will further train the Regional Resource Teams. The Regional Resource Team will train Sub Regional Resource Persons. The subregional Resource Persons will train project co-ordinator. The project co-ordinator will implement the programme. In this programme non-governmental organisation, and other agencies can work. The aim is to achieve universal elementary education by making use of local specific and locally available materials and resources. For the Lok Shala project other universities and students can also join.

Various Non Governmental Organisations have contributed in the achievement of elementary education. The Elementary Education through formal and non formal mode were utilised by them to fulfill the target. Lok Jumbish, Lok Shala, Mahila Samakhya, Shiksha Karmi, and the Saraswati Scheme have contributed towards the achievement of the goal.

Apart from the efforts made by the central government and the non governmental organisation the state government have a structure of primary education. The structure of primary education in Gujarat is as follows.

#### **1.4.0 Structure of Primary Education in Gujarat**

Gujarat is on the western side of India, it is flanked by Rajasthan in north, Madhya Pradesh in east, and Maharashtra towards south, on the western side of Gujarat is the Arabian Ocean. The language spoken in Gujarat is Gujarati. The most famous folk lore of Gujarat is known as Garba and Dandia Rass during navdurga or navratri festival. It has 19 districts. The number of villages and habitats are 18569 and 18028 respectively. The number of town is 264. Total geographical area is 196024 square kilo meters.

**Table 1.1 Retention and Enrolment of Students at Primary Stage in Gujarat State according to 1991 census**

<b>Sr.</b>	<b>Areas</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
1.	Enrolment	83.81	68.79	76.44
2.	Retention	65.00	58.08	61.88
3.	Literacy	73.13	48.64	61.29

Source:- Statistical data on primary education published by the Government of Gujarat for the year 1995-96.

Number of municipality board is 61 and District Education Committee is 19. Total population is 4.13 crore out of which male population is 2.14 crore. Rural and urban population are 65.51% and 34.49% respectively. Tribal and Schedule caste population are 14.92% and 4.14% respectively. Sex ratio is 934 female per 1000 male. Decennial population growth rate is 21.19% (1981-1991). Population

density is 211 per square kilo meters. Net Enrolment Rate (NER) (1986) is 76.44%, out of which the same for girls and boys are 58.08% and 65% respectively. Literacy rates are 48.6 and 33.13 for females respectively. There are about 32952, primary schools in the state. Total rural and urban primary schools in Gujarat were 27940, 5012 respectively. The primary schools are managed by different management bodies like 147 central and state government schools, 27420 district Panchayat schools managed by district Panchayat, 1594 Municipal schools, 1180 Private aided schools and 2611 private unaided schools. There is a total of 177137 primary teachers in Gujarat state out of which 99053 were male teachers and 78084 were female teachers. There were 19025 scheduled caste primary teachers in the state of which 1213 were male and 6877 were female. Like wise there were 22461 scheduled tribes primary teachers in the state of which 13654 were male and 8807 were female. The growth of enrolment in primary education in the state is from 2247113 to 7666424 from 1960 to 1997. The rate of retention upto class V is 54.56% and the plan and non plan expenditure for the elementary education for the state was Rs. 8811608 thousand for the year 1994-95.

#### **1.4.1 Primary Education in Baroda District**

In Baroda District, the literacy rate is 74.14% and 52.02% for male and female respectively. There are about 2523 primary schools in the district out of which 2059 are in rural and 464 are in urban set up. There were 5875 male primary teachers and 6281 female primary teachers and 6281 female primary teachers in primary schools. In the district there were 1475 scheduled caste

primary teachers out of which 1050 were male and 425 were female. There were 1060 scheduled tribes primary teachers in the district of which 819 were male and 241 were female teachers. The retention rate upto class V is 58.84% (census,1991). The textbooks are published by the Gujarat Textbook Board. The textbooks are under the process of revision textbooks upto sixth class have been revised based on the minimum levels of learning. Curriculum at the primary stage has evolved through various phases.

#### **1.5.0 Curriculum at Primary Stage**

Curriculum at any level is decided on the basis of the objectives laid down at a particular level. The regional meeting of representatives of Asian member states on primary and compulsory education was held at Karachi in December, 1959 and January 1960.

The following objectives of primary education were developed at the said meeting:

1. To give adequate mastery over tools of learning.
2. To bring about a harmonious developments of the child's personality by providing for his physical, intellectual, social, emotional aesthetic, moral and spiritual needs.
3. To prepare children for good citizenship, and its culture, and to inspire in them sense of service and loyalty.
4. To develop in the children the spirit of international understanding and universal brotherhood.
5. To inculcate scientific attitude.

6. To inculcate a sense of dignity of labour.

7. To prepare children for life through the provision of worthwhile practical activities and experiences including work experiences.

The curriculum for the ten year school (NCERT) suggested mother tongue, maths and environment as the subjects at the primary stage. It says in the primary classes the sciences should be taught as environmental studies; in classes I and II as a composite course including both the natural and the social environment and later on as two subjects, viz. environmental studies (natural studies) and environmental studies II (social science). The purpose should be not to stuff the minds of children with facts and information, but to sharpen their senses, to enable them to observe their environment and to enrich their experience. There should be solid foundation of the experiences from the environment of the child. The subjects taught at primary level are (Mother tongue) Language, Mathematics, Environmental science (Combination of science and social studies) Art and Physical Education. Language is an important tool which increases self expression in day-to-day interactions. Mathematics develops logic and reasoning which too is helpful in day-to-day life activities. Art develops psychomotor skills along with appreciation and aesthetic sense development, whereas physical education helps towards healthy development of body. Environment science prepares well informed and responsible citizens. It aims at developing an understanding of physical and social environment.

### **1.6.0 Environmental Education and its Importance**

The thinking man, Homo Sapiens (Human Beings) is a product of his environment. The story of his evolution from primitive ancestors is a vivid testimony to how he has exploited nature and utilised it for thousands of years to survive and propagate and create a new biological and social order where he is as much an heir to a psycho social inheritance as to a genetic order.

The history of human civilisation, however, is a story of unique contradictions or strange paradoxes. On the one hand, we have developed agriculture, medicine and industry; and on the other, oblivious of the consequences, we have tampered with the environment we live in and overused it to an extent that today the whole human civilisation is in peril. Misuse or overuse of nature and of the natural environment by the primitive man could be pardonable. But as his science and technology based civilisation has grown, the modern man has been more and more of the victim of this contradiction. His psycho-social heritage has not been strong enough to keep him from this self destructive process. The demand for and the supply of material resources have never dwindled. The use of resources is increasing exponentially not only because we are too many, but also because so few of us are demanding too much from the fragile biosphere.

Since the world population is doubling every 35 years at the present rate of growth, the need for resources, by a naive estimate, is doubling in the same period. It has been called a naive estimate because the actual rate at which the demand is increasing is many times more than the one mentioned above. In the

next 30 years or so, keeping in mind the present rate of demand, it is estimated that the energy use will increase 500% in certain parts of the world. The hazard, to the global environment are increasing at an equally alarming rate - carbon dioxide in the atmosphere, waste heat, industrial waste in the sea, oxygen depletion, radioactivity - all these are threatening human health and life span. War and preparation for war are demanding more material resources than are used for bettering the life of the human species. All this tends to suggest, as if the desire to live in a habitable environment and a safe world had totally disappeared.

Out of this contrast between the indiscriminate use of natural resources, industrial growth environmental safeguard, ever increasing pressure of growing populations in various parts of the world, hunger and starvation on the one hand growing consciousness, social and scientific, about the ills that have penetrated into the biological, social and, in fact, global structure, have grown definite ideas and measures to interact the former and inhibit them. Whether the menacing by products of our technology based civilisation should be dealt with a better technology or by an alternative approach to life and living is a debatable issue. But the consciousness and the desire and efforts to improve existing environmental situation as well as to create a new global ethos that would sustain the planet for a better tomorrow have been reflected in the societal thoughts almost in every part of the globe. This is nowhere near suggesting that it has, in any major way, diverted the trends that are steadily leading to a silent catastrophe but a greater number of us are more convinced today than before

that our future is not what it was thought to be. Environmental protection is assuming ever increasing importance all over the world. More than one hundred years back, Frederick Engels displayed remarkable foresight when he wrote. " Let us not..... flatter ourselves overmuch on account of human victories over nature. For each victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results unforeseen effects which only too often cancel the first. Harmony between man and his environment is the essence of life and growth . Since the needs and aspirations of the society are reflected on the educational superstructure, the UNESCO UNEP International Environmental Education Programme was put into action at the UNESCO secretariat in Paris in 1975. This programme was a direct outcome of recommendation 96 of the Human environment Stockholm, Sweden, 1972, which stated that "it is recommended that the secretary general the organisation of the united nations system especially UNESCO and the other international agencies concerned should after consultation and agreement, take the necessary steps to establish an international programme in environmental education interdisciplinary in approach , in school and out of school, encompassing all levels of education and directed towards the general public, in particular the ordinary citizen with a view to educating him as to the simple steps he might take within his means, to manage and control his environment.

Throughout history man adapted the environment transformed, destroyed and improved it through its cultural evolution. The resulting interventions were mostly local in nature at the initial stage and people did not realise its

consequence. Advent of modern science and technology, combined with man's greed and caprice to exploit the resources of the earth beyond point of redemption led to the creation of environmental problems. The industrial revolution of the seventeenth century probably signalled the beginning of 'pangs of modernity' an euphemism for environmental problems. The unprecedented rapid growth in human population, science, technology, modern production and consumption processes and last but not the least change in human life style have wrought serious havoc in the environment resulting in gross interference in its ecological processes and thereby endangering the health and even very survival of man on earth. Notwithstanding the heavy debate over the extent and nature of the environmental crises, it is generally agreed that the environment is in trouble and the 'planet is in peril'. To get a complete picture of the environmental problems, with their ramifications, damages and implications for humanity. Few of the serious environmental problems have been discussed below.

#### **1.6.1 Population Explosion**

The world population crossed five billion mark in July 1987. At the turn of the century, this figure is likely to be between 6 to 6.5 billion. The villages are gradually being depopulated and squatter settlements, slums and shanty -towns, notorious for vice criminality, prostitution, squalor, poverty, insanitation and disease etc., are on the rise. Thomas Robert Malthus (1798) in his 'Essay on the principle of population' had warned that rapid population growth is the real cause

of poverty among nations. Paul Ehrlich (1972) had identified population explosion to be at the root of all forms of environmental degradation.

### **1.6.2 Water Pollution**

Eighty per cent of all diseases in human beings can be attributed to polluted water. In India 70 per cent of available water is polluted water. (Basu, 1986) . Industrial effluents, sewage, garbage, bio waste, chemicals of many kinds including artificial fertilisers, pesticides, herbicides, detergents and even animal carcasses mix with water making it unsuitable for human use and disrupt aquatic ecosystems.

### **1.6.3 Air Pollution**

Emissions from factories and industries automobiles exhaust, rail engines, aeroplanes, and other internal combustion engines that burn fossil fuel, thermal power plants, quarry and mining activities, nuclear fallout's, dust and particulate matter etc.. pollute the air.

Breathing polluted air causes respiratory diseases like tuberculosis, bronchitis, allergy, emphysema and aggravates asthma.

### **1.6.4 Acid Rain**

Air pollutants like oxides of sulphur and nitrogen react with water vapour and oxygen in the air to form sulphuric acid respectively. These acids fall to earth either in the wet form with rain water and in other forms of precipitation or deposited as dry gases. Acid rain turn water in lakes and rivers acidic, thereby reducing the size and diversity of fish population. Vegetation is destroyed. It

causes corrosion of outdoor equipment, building and works of art especially in urban areas. Acid rain also leaches nutrients from soil reducing its fertility.

#### **1.6.5 Smog**

Due to temperature of inversion effects, sometimes, smoke, sulphur dioxide and carbon monoxide and other effluents of fossil fuel combustion, mix with cold fog to form smog. Smog is highly toxic and harmful to life. During the 1950s some 4000 people were killed due to smog in London.

#### **1.6.6 Greenhouse Effect**

The glass of a greenhouse allows sunlight to stream in freely but blocks heat from escaping, mainly by preventing the warm air inside the greenhouse from mixing with outside air. In a similar fashion gases like carbon dioxide, methane, water vapour, oxides of nitrogen, chlorofluorocarbons (CFCs) emitted from different sources on earth are transparent to incoming solar radiation but trap heat near the surface of the earth by more efficiently absorbing the longer wavelength infrared radiation released by the earth. This results in global warming up and the phenomenon is called greenhouse effect.

Mathematical models show a modest increase between 3.0 degree centigrade and 5.5 degree centigrade in earth's surface temperature. Change in precipitation and temperature could threaten natural ecosystems, agricultural production and human settlement patterns.

#### **1.6.7 Depletion of Ozone layer**

The ozone layer in the stratosphere extending between 25-35 kms, in the atmosphere serves as a shield protecting the planet from harmful effects of ultraviolet radiation's. This layer is however thinning out due to the widespread use of a group of chemicals called chloro fluoro carbons (CFCs) These chemicals are used in aerosol sprays, refrigerators and room air conditioners as refrigerating liquid and in blowing of plastic foams etc.,

#### **1.6.8 Noise Pollution**

Automobiles, trains, aeroplanes, industry, machinery, factory sirens, market places etc. Are the major sources of noise pollution. A jet engine during take off produces noise pollution of highest degree. It has been observed that on exposure to rock music guinea pigs suffer loss of hearing. Continuous exposure to rock music guinea pigs suffer loss of hearing. Continuous exposure to high levels of sound (those exceeding 90 decibels ) results in emotional distress, rise in blood pressure, tension, increased heart beat and may lead to loss of hearing.

#### **1.6.9 Radio Active pollution**

Radio active emissions like Alpha, Beta, Gamma rays and neutrons emitted from accidents in nuclear power plants, atomic explosions, nuclear testing, radio isotopes, radio active wastes of nuclear reactors, X-ray machines and even picture tubes of television and electron microscopes are sources of radio active pollution.

#### **1.6.10 Deforestation**

Forests are vital to human existence as they provide fuel, fodder, timber, food and medicine. They also check soil erosion, clean air by using up carbon dioxide in photosynthesis help in rainfall, serve as wind breakers during storm and cyclone in coastal areas, provide habitat for wild animals and above all provide recreation for mankind. National Forest Policy stipulates that on the average 33% of the land area should have forest cover. But forests are continuously being denuded to meet increasing demand of people for grazing of live stock, timber, fuel, agriculture, shifting cultivation, urbanisation, mining, quarry operations and for construction of hydroelectric projects, hill roads, industries.

#### **1.6.11 Extinction of Species**

As per International Union for Conservation of Nature and Natural Resources (IUCN) report India has about 45,000 species of plants and 65,000 species of animals out of nearly 5-10 billion species are required for preservation of gene pool so essential, for our survival. In discriminate hunting of animals have also resulted and accelerated species extinction. The present species loss per year is 10,000 times greater than the naturally occurring background extinction rate that existed prior to the appearance of human beings. The 'Red data Book' of IUCN and the 'Green Book' of Botanical Survey of India enlist endangered/rare species. Launching of Man and Biosphere Programme (MAB)

and 'World Conservation Strategy' have helped conservation of species through 'in situ' and 'ex situ' methods.

#### **1.6.12 Depletion of Natural Resources**

The Natural resources of the earth, particularly the non renewable ones like fossil fuels and minerals are being depleted at a fast rate causing severe concern, since their regular supply is vital for sustainable development. By 2000 AD all silver mines and easily mined earth is like a space ship with respect to its resources. A society with a high level of industrialisation and resource use may be non sustainable. It may be self extinguishing if it exhausts the natural resources on which it depends.

#### **1.6.13 Land Use**

Due to demographic pressure land is under stress, on account of agriculture, industrialisation, urbanisation, railways and high ways etc., In our country extreme imbalance in land use can be seen. Soil fertility is going down as a result of excessive use of chemical fertilisers, nitrates and in some cases by excessive irrigation.

#### **1.6.14 Soil Erosion**

About 175 million hectares of land constituting 53 per cent of India's total land area is susceptible to serious soil degradation due to desertification, salination, alkalination, water logging, deforestation and overgrazing. The country loses about 5-6 thousand million tons of top soil every year at a rate of 10 tons/

year. At this rate the entire top soil may be lost in about 250 years ( Kanwar, 1978) Without top soil, which has taken several hundred years for its formation, land becomes barren and is the starting point of desertification.

#### **1.6.15 Energy Crisis**

Energy is required for cooking, transport, running industries and lighting buildings and the streets. Although per capita consumption of energy in developing countries is 4-7 times less than developed countries, rapid growth in energy consumption is now occurring in these countries compared to developed countries, since these countries are seeking to industrialise to raise their living standards.

#### **1.6.16 Ecological Disruption**

The subtle and fragile relationships in an ecosystem can be disrupted due to external factors like human intervention. Any change in an ecosystem that is imposed from outside often triggers off a chain of reaction that dismay sometimes be irreversible. All the environmental problems described above are cause as well as manifestation of an ecological crisis in environment. Extinction of ' Dodo' and the threat from hydro electric power projects are two classic examples that amply illustrate the ecological imbalance due to human intervention. Introduction of high yielding cereals large scale monoculture and introduction of wide spectrum of insecticides etc., have exacerbated the ecological crisis.

There are number of non governmental organisations working in the area of Environmental Education. They try to bring awareness, build an understanding, inculcate an attitude towards environmental issues and there solutions, they also initiate action with the help of law.

#### **1.7.0 Role of Non Governmental Organisation in Environmental Education**

Although non governmental organisations have been in existence for a long time, it is only recently that their role as well as their organisational significance is being realised. Their strengths include small size, flexibility of action, high motivation and willingness of their numbers to work with minimal returns, dynamism and the capacity of handling issues with sensitivity. Considering the variety and intensity of the societal problems we face today, one has to appreciate the fact that the government can't satisfy all the needs effectively. Beside, many of our problems need personalised touch which the government is unable to do so. The NGOs are playing a significant role in environmental protection and further their objectives can be strengthened. NGOs with specific aims and objectives have been working with the people and for the people for years together. Their concern for the betterment of the society in general. These NGOs today have understood the need of the time and are busy channelising their energies toward environmental preservation.

#### **1.7.1 Nehru Centre for Environmental Studies at Ahmedabad (1984)**

In Nehru Centre for environmental studies at Ahmedabad, C. P Ramaswami Iyer Institution for southern states in 1988 and Rashtriya Paryavaran Jagruti Abhiyan 1986 were established. These Institutes, undertook

task to training, resource persons to teach Government officials and, people from voluntary organisations. Training was given in regional languages also.

#### **1.7.2 World Wild Life fund opened its Indian chapter in 1976**

This organisation along with its regional sister concerns undertook the task of teaching young environmentalists. They provide information as well as material to children who ask for it. Varied youth organisations have forums to carry out awareness programmes, train resource persons and carry out varied campaigns related to conservation of natural resources. These forums activated people towards becoming environment conscious. India too has a long history of the work done by the NGOs towards protection of the nature, conservation of forests or wild life.

#### **1.7.3 Chipco Movement**

Mass Scale felling of trees to build Kosi Dam in the Terai region of Gadwal unsettled the local inhabitant there. It also disturbed the ecology there. Sunderlal Bahuguna an eminent scholarly environmentalist and a staunch activist founded and headed the CHIPCO organisation and the movement. This organisation looks into the problems of the people there, rehabilitates them, gives them means of livelihood. This organisation is active in the Alaknanda river valley and Terai regions in Gadwal.

#### **1.7.4 Vanrai Project**

Vanrai is another such organisation which carries out multiple activities in Maharashtra with conservation of forests as its base. Shri Mohan Dharia former central minister and active environmentalist established this organisation in

1986. He believes that a balance has to be maintained between man, animals and nature development. Creation of environmental awareness is one of the major activities conducted by the organisation. More attention is paid to utilisation of local man power and local material towards creating a sustainable economy with sustainable environmental preservation.

#### **1.7.5 Silent People's Movement**

Silent People's movement of Rajasthan, Greening movement of Kerala, Paryavaran Saurakshan manch, Maharashtra have tried to combine business while stopping the environmental degradation. Work, job satisfaction and monetary gains of the local people are looked after by these activists. In doing so they also green their surroundings and protect ecology .

#### **1.7.6 Gyan Prabodhini**

Gyan probodhini Pune encourages students to carry out surveys in this field. This organisation was the first one to start a project Nirmalya Prakalp. Their success encouraged many others to follow suit.

Baba Amte will well be remembered for his Anandvan and Medha Patkar who is single handedly fighting for Narmada Bachao Sangathan. Maneka Gandhi is another crusador who is doing her bit for the animals in collaboration with Society for prevention of Cruelty against Animals (SPCA). Justice M. C. Mehta the Magasaysay award winner and his court of justice. Various non governmental organisations are working with school children. Environmental education has emerged much after the issues and problems in environment were recognised and debated the following paragraphs discuss emergence of

environmental education. Apart from the non governmental organisations the government both at the national and international level has made efforts to improve the environment.

#### **1.8.0 International Efforts in the field of Environmental Education**

Since 1970, there has been a growing effort and activity on the educational front devoted to environmental problems and to environmental education. The United Nations reflected the global nature of this awareness when in 1972, it organised the first international conference on the Human Environment in Stockholm, Sweden. The conference revealed a widening interest in the environmental problems it also exposed a lack of widespread experience in tackling the problems. Perhaps the most outstanding achievement of the conference was the establishment of the UNEP United National Environment Programme which together with UNESCO, embarked upon an International Environment Education Programme in January 1975.

In 1975, this programme held an International Environmental Education Workshop in Belgrade Charter, Yugoslavia. A major outcome of this Workshop was the Belgrade Charter. This Charter recognised the urgent need in environmental education to develop a global understanding or perspective of the ecological, economic and moral considerations.

Belgrade Charter 1972 States the goal of Environmental Education is 'to develop a world population that is aware of and concerned about the environment and its concerned problems and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively

toward solutions and current problems of the prevention of new ones' The charter further says the goal of environmental education is "to improve all ecological relationships including the relationship of humanity with nature and people with each other"

The Belgrade Workshop was followed by a series of regional meetings of experts. The Asian regional meeting took place in Bangkok in 1976 and brought together representatives from a number of countries of the region to review and evaluate the Belgrade recommendations in the more specific regional context prior to a world conference at an intergovernmental level. The inter governmental conference on Environmental Education was held in Tbilisi, Georgia, USSR, in October 1977, and marked the culmination of the first three year programme on environmental education.

Tbilisi Report:- USSR 1977 report on Intergovernmental conference on environmental education has summarised the ultimate aims of environmental education.

1. To enable human beings to understand the complex nature of the environment as this results from the interaction of its biological, social and cultural aspects.
2. To provide the individual and the community with the means of interpreting the interdependence of these various elements in the environment. So as to create a greater sense of awareness of their place in the environment.

3. To promote a more considered and cautious use of the possibilities and resources of the universe to satisfy the present and future material and spiritual needs of mankind.
4. To contribute to the development of a national awareness of the importance of the environment in the economic, social, cultural processes.
5. To provide a clear awareness of the economic, political and ecological interdependence of the modern world and develop a spirit of responsibility and of solidarity between countries and regions.

The next earth summit as it is commonly known took place in Rio de Janeiro in June 1992. This summit was vastly attended by 3000 strong Non governmental organisations representatives along with other delegates. Agenda 21 a comprehensive plan to guide national and international action towards sustainable development was put forth. It was this agenda that encouraged the Non governmental organisations to play a more prominent role in guiding and co-ordinating environmental policies and programmes.

Thus, environmental education came into existence in 1970. The objectives of environmental education were given in the Belgrade charter in 1972. Whereas the aims and goals of environmental education came clearly in the Tbilisi report. Whereas Earth summit gave impetus to the non governmental organisations. The Non governmental organisations work with school children and help them to achieve the objectives of environmental education.

### **1.9.0 Indian Efforts on Environmental Education**

Ecology and environmental studies in education in India have not been satisfactory and do not match with the quantum of researches in these areas of science being carried out in the country, although at international level there have been repeated efforts to identify the problems and stress the urgency of implementing the environmental education and research programmes on a very extensive scale. The researches in this area will be discussed in second chapter. The non governmental organisations are doing a nice job with school children and college children. Apart from that environment science is a part of subject at various levels of formal education.

### **1.10.0 Curricular objectives of Environmental Education**

In accordance with the Belgrade charter (1975) and Tbilisi Workshop (1977), the curricular objectives of environmental Education are.

- A) To help individuals and social groups acquire an awareness of and sensitivity to the total environmental and its allied problems along with their implications to humanity.
- B) To help individuals and social groups acquire basic understanding of the total environment, its associated problems and humanity's critically responsible presence and role in it.
- C) To help individuals and social groups acquire social values, strong feelings of concern for the environment and the motivation for actively participating in its protection and improvement.

D) To help individuals and social groups to acquire the skills for solving environmental problems.

E) To help individuals and social groups evaluate environmental measures and educational programme in terms of ecological, economic, political, social aesthetic and educational factors.

The goal of environmental action is to improve all ecological relationships, including the relationship of humanity with nature and people with each other we have noted that since the early 1930's elements of what environmental education today have been assimilated into the school curriculum. Nature study with a view to develop an appreciation for the elements in nature is the first to come as a course of study. But not until the fifties did we find that components of ecology and ideas about conservation and an overgrown human population growth was evident in the school programmes in the sixties and the seventies. However, all these scattered ideas about nature and natural resources and their conservation and an overgrown human population have only recently been linked together under the umbrella of environmental education where the boundary lines of many an academic discipline combine as the problems of the environment grow to an unprecedented dimension. Environmental education has been incorporated at various levels of education. At elementary stage it is in the form of Environmental Science. At primary level it is part of Science subject. At the secondary stage it is the part of all the subject whereas at the higher secondary stage it is part of the biology text book. Environmental Science

prepares well informed and responsible citizens. It aims at developing an understanding of physical and social environment.

Environment has been defined as the sum total of all conditions and influences that affect the development and life of organism. (Ambasht 88). The conditions and influences can be biotic or abiotic that is living or non living.

All living beings are directly or indirectly dependent on nature. So, it becomes a pre-requisite that, we should be aware about the extent to which homeostasis of nature works. Beyond equilibrium, there are back lashes, which certainly are undesirable. Our main goal is sustainable development. For sustainable development, we will have to train our young minds in their early years through environmental science as the objective of environmental science is to acquire awareness and knowledge, to develop attitudes, skills and abilities to participate in solving real life environmental problems. Environmental Science is important for sustainable development, which means, whatever exists today on planet earth, should be used very judiciously in a prudent manner, so that whatever we have today, should also persist in future.

Environmental Science at the primary stage is a subject from class I to IV which lays a basic foundation for science and social environment. Whatever instances or incidences are taking place around us directly or indirectly. As a result, they influence child's growth and development. So, pupil must know about the environment. Students should be able to observe flora and fauna around them, should be able to recognise and protect them from being harmed or destroyed. They should be able to know about the importance of air, water

and food as well as how to stop air, water and food from getting more polluted. They should be able to develop the habit of cleanliness. They should be able to see and observe the gradually expanding components of human life. They should be able to know about natural phenomena, national festivals and they should take pride for their nation.

With the above mentioned objectives, Environmental science is introduced at the primary level. Environmental Education has to be taught through the environment itself where environment is used as the material for teaching.

#### **1.11.0 Different Methodologies Involved in Teaching at Primary Level**

According to a UNESCO report 1965 'There are two important considerations that should influence the choice of methods of teaching in the primary school. First of all, there is the fact that pupils in earlier grades, say I-IV, belong to a stage of development which psychologists recognise as the period of later childhood; while those in the later grades, say V-VII or VIII, are in the period of early adolescence. During later childhood the predominant interest of the child is in the practical aspects of life; and hence the methods this stage should have a practical bias, and activity methods are advocated. The methods used for pupils during adolescence should cater for their dominant characteristics which is an exuberance of imagination. Conscious of his power, unconscious of his limitations. Adolescence interests point to the need for the project methods, centred on projects relating to the 'great achievements of man'

- The Manila meeting stressed that the essence of quality in primary was that its matter and method should be derived from the first - hand experience

of the child and be firmly rooted in the activities of his home, his school and the community in which he lives. The source book of science teaching by UNESCO quotes ' Children learn more readily when they are interested in it, when they can see that it makes some difference to them, when it is graphic, involve some manipulation on their part, is not too hard but hard enough to make them think, and when it gives them the satisfaction of having found something that they wanted to know'. Some researches have been done on the existing methods of teaching at the elementary level. Swarnamma (1978) found that most teachers resorted to lecture demonstration method in teaching science. Muddu (1978) found teachers use lecture - demonstration method for teaching science at the primary level. Dev (1979) found teachers are more interested in teaching with the help of lecture method than any other instructional method. Santosh ( 1996 ) found "Teachers of primary schools do not take interest in their jobs neither they attend their duties regularly nor do they pay heed to the difficulties and problems of the children. Ours is an examination - ridden education fear of examination always remains in the mind of children. Because of this fear they develop repulsive attitude towards education. Individual attention is not paid to the children Punishments inflicted upon the children is so severe that they cease to take interest. The provision of instructional material in primary schools is not adequate". Such a circumstance leads to Wastage and stagnation. Apart from this there are other causes for wastage and stagnation they are as follows :



- The curriculum is not in accordance with the real life of the children.
- The environment of primary schools does not meet the psychological needs of children so they play truant.
- Teaching methods adopted in primary schools are dull and boring.

Basically the teaching learning process at the primary level should be child centred. The child -centred learning theory places a major emphasis on dynamic socio-cognitive interactions between “significant other” and the learner who is at the centre of the education process. In these interactions the role of the “significant others is to provide assistance in the learners “ zone of proximal development” and to gradually delegate responsibility for learning task performance to the learner. Defined in terms of intensity and nature of interactions, and not in terms of educational context and content, child centred learning can be embedded in both paradigms: Instructionist and constructivist.

#### **1.11.1 Child Centred Learning Theory - Instructionist Mode.**

Interactions are determined and guided by expert subject matter models and by objective feedback standards. Child centred learning is featured to individualise instruction through:

- Diagnosis and assessment of each learner’s deficiencies and strengths.
- Organisation of learning by task and sub tasks that feature each learner pace and progression
- Provision of a standard objective feedback tailored to each learner needs
- Decline in teacher responsibility for task performance : delegating to the learner the responsibility for his / her own progress

- Remedial assistance if and when needed

It should be noted that in this approach child centred learning is limited and does not interfere with all other elements characterising teacher centred classroom functioning. As noted by Cuban (1984) these classrooms are distinguished by :

- Teacher talk exceeding student talk during instruction.
- Whole class instruction exceeding small group or individual instruction
- Use of class time determined by the teacher

Classroom usual arrangement into rows of desks and chairs facing a blackboard with a teachers' desk nearby.

#### **1.11.2 Child - Centred Learning Theory - Constructivist mode**

Interactions are determined by learners involvement and functioning in complex authentic learning situations and in disciplinary and interdisciplinary projects learning partnerships. As noted by Cuban, in these situations interactions shape classroom activities and play a dominant role in the active generative progression of teaching and learning in constructivist classrooms goes hand in hand with the following observable characteristics, reflecting all elements of teaching and learning. These characteristics are:

- Learners talk on learning tasks equals if not exceeding teacher talk
- Most learning occurs either individually in small (2 to 6 students) or moderately sized (7-12) groups rather than in whole class settings
- Learners help to choose and organise the content to be learned
- Teachers permit students to determine, partially or entirely, classroom rules of behaviour and penalty - enforcement procedures

- Varied instructional materials available to individual and groups of learners in the classroom enable to concurrently carry on different settings (e.g. interest centres, teaching stations, activity centres)
- Flexible - physical - classroom - settings permit of furniture and space allowing students to work together or separately in small groups or in individual work space

Bearing in mind that intensity and nature of child centred learning are determined to a large extent by the combined effect of all strands of teaching and learning, it is important that the following factors be considered in the planning and implementation of child centred learning;

- Classroom space organisation
- Teacher student talk ratio
- Learning / instruction settings ( individual small groups entire classroom)
- Presence and use of learning and /or interest centres as part of a normal school day
- Degree of students' free of permission movement.

**Table 1.2 Pedagogical Priorities Set by Instructionism and Constructivism**

<b>Trait</b>	<b>Instructionism</b>	<b>Constructivism</b>
<b>Goal of Education</b>	Development of academic disciplinary knowledge	Development of thinking and learning capabilities
<b>Role of teacher</b>	Manage and convey expert subject matter information	Manage and facilitate active and generative learning in an environment that is intellectually challenging
<b>Role of Learner</b>	Listener	Collaborator
<b>Classroom Activities</b>	Teacher centred	Interactive and pupil centred
<b>Teaching Emphases</b>	Memorisation of knowledge	Construction of Knowledge
<b>Content Structures</b>	Separated curricular topics	Authentic complex problems
<b>Assessment</b>	Standard objective tests	Performance task based and criterion referenced
<b>Use of Technology</b>	Empower traditional instruction paradigm	Enhance systemic change processes

It has been found that the constructivist mode of teaching helps in improving the learning abilities of the pupils Cuban (1984). Quality in Instruction is required in order to achieve the objectives of education. Quality is a characteristic innate or acquired which, in some particular, determines the nature and behaviour of a person or thing . The quality of instruction would mean a process of curriculum transaction through various strategies (i.e. using different methods and media), to enhance the attainment of pupils not only in cognitive abilities but also meta cognitive abilities. The quality instruction will enhance quality learning which would be marked by enquiry skills, active understanding, high participation in the process of teaching and learning. The quality instruction would nurture personal responsibility among young children, integrity, citizenship,

human understanding and collaborative work amongst learners. Quality instruction would mean quality learning. A learning that is from within with active pupils participation is marked by following parameters:

- Students will be able to take interest in the subject matter.
- Students will be able to show a zeal for learning
- Students will be able to develop interactive skills
- Students will be able to develop critical thinking
- Students will be able to take initiative in the process of learning
- Students will be able to develop psychomotor skills
- Students will have better retention ability Students will be curious to know and will develop skill of inquiry
- Students will be able to enjoy the teaching learning process as it will become joyful for them
- Students will be able to increase their overall achievement considerably.

The UNESCO's (1997) recent report "Learning the treasure within" has emphasised on the quantity and quality of traditional teaching materials such as books, and on new media such as information technologies, which should be used with discernment and with active pupil participation. The improvement of education, seen in this light, requires policy makers to face up squarely to their responsibilities. They cannot leave it to market forces or to some kind of self regulation to put things right when they go wrong. According to the world bank report learning throughout life emerges as the key to the twenty first century. It meets the challenges posed by a rapidly changing world.

Some remarkable scientific discoveries and breakthroughs have been made during the last twenty five years. Many countries have emerged from underdevelopment, and standards of living have continued to rise. While humankind is increasingly aware of the threats facing its natural environment, the resources needed to put matters right have not yet been allocated, despite a series of international meetings, such as the United Nations Conference on Environment and Development, held in Rio De Janeiro in 1992, and despite of serious warnings of natural disasters or major industrial accidents. The truth is that all out economic growth can no longer be viewed as the ideal way of reconciling material progress with equity, respect for the human condition and respect for the natural assets that we have a duty to hand on in good condition to future generations. The education system needs to make students aware of the forthcoming problems and prepare a work force to encounter the situation. The pedagogy would depend on the type of problem under the focus and according to age, ability and comprehension.

#### **1.12.0 Rationale**

“Toady’s child is tomorrow’s citizen”. We have had huge technological changes and we have also introduced computers in school education. But without a healthy environment how long will we be able to stay healthy? Is it possible to stay healthy in an unhealthy environment? A clean environment is a responsibility of all the citizens. Keeping this in mind it was decided that environmental science will be a subject at lower primary level. At upper primary level it will be a part of science. At secondary level it will be integrated with all

other school subjects. Whereas at higher secondary level it will be a part of Biology syllabus.

Looking at the present scenario of primary education, though textbook based on minimum levels of learning have been implemented from class I to VI, teaching continues with teacher centred activity of reading textbook aloud with occasional noting of salient points on the black board. Even the subject of Environmental Science is taught orally without the support of Environment. It is necessary that the teaching at elementary stage is concrete. The students of primary school belong to the concrete operational stage according to Jean Piaget's theory. These children should be given concrete activities, as far as possible, for concept clarification. By reading the textbook aloud much cannot be achieved. Sharma (1981) found that guided activity was more effective than the self activity in respect of concept formation in science.). Kamalkanthan (1968), Rajput and others (1980), Malhotra, (1982), carried out an experiment to compare the traditional approach with problem solving or activity based approach or environmental approach. All these studies have shown that the traditional approach is ineffective. Jha (1979) compared the different methods of teaching science and reported that activity based approach was most effective. The environmental approach is in fact an approach to learning through activities based on the child's natural and familiar environment. This approach cuts across all subject boundaries to facilitate a continuous flow of learning across the spectrum of the curriculum. The basic philosophy underlying this approach is that children will, in this way, become more sensitive to their own culture and

social back ground. They will also be more concerned about the quality of their environment. Gupta (1981) identified components of environment in which children from the rural and urban areas were lacking and suggested means for developing environment based curriculum at the primary school level. Dave et al (1988) reported that pupils achievement in environmental science was excellent in class I and II, minimum in class III , and poor in class IV. Studies in science also demonstrates the effectiveness of the intervention of materials and methods in improving teaching and performance of pupils.

Habits are formed at this age that is between 5-12 (later childhood). The students studying at primary stage will have exposure to cognitive, affective, psychomotor and metacognitive development. The habits formed at this age get transferred into values. As the primary stage is impressionable age study was conducted at the primary level.

Standard IV was selected for the purpose of the present study as it has a broad scope of various concepts in the area of environment and also because students are able to do the activities on their own. Environmental Science is introduced in standard 1st and continues upto IVth standard. So, consolidation is done at fourth study of the topics of environmental science. NPERC (1990) mentioned that there is more than 50% dropout in and after class IV. Even if the students dropout, after IV standard, habits learnt at the primary level will be with them.

The primary school for this study was randomly selected from those schools in which the children from lower socio economic strata study. As these

children do not have exposure to mass media, nor their parents are educated to bring awareness regarding environmental issues. If values are inculcated in them, they will be very vital for them in long run. That is why students were taken from a school in which majority of the students belonged to lower socio-economic section of the society. Intervention study was taken up as the academic performance of those students was lower. So, for improving the quality of instruction an intervention study was taken up. For any organisation to be effective it is necessary to achieve the goals effectively with optimum utilisation of resources. For developing an organisation various types of intervention can be taken up at various levels. That is there can be intervention on teachers training, or on the infrastructural facilities etc., or it can be on the curriculum transactions in educational settings. The present study is an intervention in the area of curriculum transaction. Students were taught through different strategies to improve their academic performance.

No intervention study has been carried out in the subject of environmental study to the best of investigators knowledge. Majority of studies carried out in the area of primary education are in language and mathematics. Intervention study has a scope of concrete activities in which there is involvement of students. If group centred teaching is there, higher cognitive development takes place. Also looking at the nature of subject. There is enough scope of activity development in the subject of Environmental Science.

Intervention study was taken up in one of the school of Baroda city. Baroda city is an industrial city. There are number of industries located in and around

Baroda city. On one hand it has rich localities and on other hand it has slums. In a study conducted by the investigator in 1997, which was followed by the photo exhibition on the environment of Baroda. It was found that the area in which the school is located is near the worst polluted area in Baroda City. The aim was to develop habits through the developed intervention programme. Certain question came to mind, will learning with activities really bring desired changes in the cognitive, affective and psychomotor development? Only paper pencil test will be sufficient for the test or not? Can there be a scope for a different type of examination? Can the teaching learning through various strategies help in enhancing achievement of the students from lower socio economic background? Will there be any difference in the pre test mean scores and post test mean scores? In order to answer these question following study was formulated. The title of the study is 'An Intervention to Improve the quality of Instruction in Environmental Science for Primary Level School Children'.

#### **1.13.0 Statement of the problem**

'An intervention to improve the quality of Instruction in Environmental Science for Primary Level School Children'

#### **1.14.0 Objectives**

1. To prepare the intervention programme for seven units in the subject of Environmental Science for standard IV.
2. To implement the intervention program to study its effectiveness on standard IV students in terms of their academic achievement.

3. To study teachers opinion about the intervention programme.
4. To study the opinion of the students about the intervention programme

#### **1.15.0 Operational Definition of the Terms.**

##### **1. Intervention**

Any action on the part of an organism that serves to change the relative position of the objects or forces of the environment and of the organism itself, thus bringing new stimuli to bear upon the organism. In this study it refers to the activity oriented instructional material which would change the relative position of pupils achievement .

##### **2. Quality of Instruction**

According to Random House Dictionary "Quality is a Characteristic innate or acquired which, in some particular, determines the nature and behaviour of a person or thing" For this study it has been defined as follows. The quality of instruction means a process of curriculum transaction through various strategies (i.e. using different methods and media), to enhance the attainment of pupils not only in cognitive abilities but also meta cognitive abilities.

The quality instruction will enhance enquiry skills, psychomotor skills, active understanding, high participation in the process of teaching and learning.

The quality instruction would nurture personal responsibility among children, integrity, citizenship, human understanding and collaborative work amongst learners.

Thus, quality of instruction, would mean strategies to bring desirable changes in pupils behaviour.

### **3. Environmental Science**

Environmental Science is an integrated process which deals with man's inter-relationship with his natural and man-made surroundings including the relation of population growth, pollution, resource allocation and depletion, conservation technology and urban and rural planning of total human environment. Environment Science is a study of the factors influencing ecosystems, mental and physical health, living and working conditions and population pressures. Environmental Science is intended to promote among citizens, the awareness and understanding of the environment, our relationship to it and the concern and responsible action necessary to assure our survival and to improve quality of life. In this study it refers to the syllabus that is the textbook taught at the lower primary level.

### **4. Primary Level**

Primary level is a stage of education which comes before secondary level and after kindergarten. It includes students from grade I to grade VII. The Primary level is divided into two phases, lower primary and upper primary. From grade I to IV it is lower primary level. Whereas from V to VII it is upper primary level.

#### **1.16.0 Delimitation's of the Study**

1. The study was limited to one school of Baroda city.
2. For this study, only standard IV has been selected.
3. In standard IV, study was confined to only one subject that is Environmental Science and ten chapters of subject text book published by Gujarat State Textbook Board.

#### **1.17.0 Hypotheses of the study**

In order to study the effectiveness of implemented intervention programme, eight null hypotheses were formulated. Seven hypotheses were to study the effectiveness of every unit individually whereas the eighth hypotheses was formulated to study the comprehensive performance of pupils in all the units. The null hypothesis relates to a statistical method of interpreting the conclusions about population characteristics that are inferred from the variable relationships merely result from chance errors inherent in the sampling process. Best and Kahn (1995). The null Hypothesis for the present study are as follows.

1. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit I after receiving the instruction through the intervention programme.
2. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit II after receiving the instruction through the intervention programme.

3. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit III after receiving the instruction through the intervention programme.
4. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit IV after receiving the instruction through the intervention programme.
5. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit V after receiving the instruction through the intervention programme.
6. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit VI after receiving the instruction through the intervention programme.
7. There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of unit VII after receiving the instruction through the intervention programme.

There will be no significant difference in the mean achievement scores of the students in written, oral and activity test of comprehensive examination after receiving the instruction through the intervention programme.

#### **1.18.0 Conclusion**

The primary education is the foundation stone of education. Education is very vital for the development of the individual as well as nation. The progress of the country and the educational levels are deeply inter related with each other. The tragedy with primary education was that it was in the directive principles of the

state. The state had to look after it, but unfortunately the targets kept on shifting. Though we have made number of achievement in the various arena we still are indifferent to the basic human right of an individual to get free and compulsory primary education. Our Environment is also very vital without the environment we are nothing. We are indebted to the mother earth, we have not inherited this earth from our fore fathers, but we have borrowed it from our future. So, we need to train students in protecting their immediate surrounding. The above chapter deals with the conceptual frame work of the study. The next chapter contains the review of related studies.