CHAPTER II

REVIEW OF CONCEPTUAL LITERATURE
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PREAMBLE
The problem of environmental and community-oriented education has been discussed for several decades, particularly during the last century. Very often these involve integrated activity-centred approaches. But teachers and the public are accustomed to subject-centred approaches. Besides environment-oriented education using community resources calls for high degree on the part of the teacher. Hence several attempts at practising these approaches have resulted only in a limited success. There have been reversals of policy in some countries after attempting these approaches. One reason for such failures is that the relevant modern theory and conceptualisations, especially in the areas of environmental education and environmental cognition have not been sufficiently diffused even among educational theorists in this country. Hence this chapter discusses some of these conceptualisations.

The conceptual themes focused in this chapter are

A. Environmental Education
B. Environmental Cognition/Environmental Knowing
C. Community
D. Contextualisation in Primary Education

A. ENVIRONMENTAL EDUCATION

Cerovsky (in Saveland (ed.) 1976) defines environmental education as follows:

Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his bio-physical surroundings. Environmental education also entails practice in decision-making and self formulation of a code of behaviour about issues concerning environmental quality.
Cerovsky presents a very broad concept of Environmental Education (hereafter referred to as EE). What is required is action consistent with the views of social scientists, poets, artists, 'wise men trained in folk-lore', spiritual leaders and media specialists, best equipped to understand human response and needs. Three approaches to EE are advocated: teaching from the environment, teaching about the environment and teaching for the environment. EE should incorporate critical thinking in order to correct the inherent bias in any scheme. Textbooks and teacher guides are important but many 'environmental text books' and other learning materials are, in fact, standard natural history or geography books with new titles.

The basic ideas of Environmental Education were developed in 1970s in three major conferences of the United Nations (vide Saveland ed., 1976). The Stockholm Conference (1972) wanted education to promote 'New perception to guide the new patterns of behaviour between man and environment, and between man and man, which were required by the emergence of his capacity to use and alter his environment on a scale hither to unknown.' The Belgrade International Workshop (1975) developed a global framework of goals, objectives and guiding principals for EE. It underlined the inherent pluralism of societies in the satisfaction of that need. Tbilisi Declaration (1977) stressed not only the need for ecological balance in nature, but also 'solidarity and equality in the relations between nations as a basis for a new international order; a holistic approach to EE, noted in a broad interdisciplinary base, to produce a perspective of interdependence between the natural and man-made environments, and EE as a life-long education for individuals as members of the community in an active problem solving process encouraging initiative, a sense of responsibility and commitment to build a better future.'
Chiappo (In Prospects 1978) of Peru presents the third world point of view regarding environmental resources which are unjustly exploited by the richer nations. He suggests a new environmental ethics of long-term solution. His new ecological ethics includes the following. Man belongs to nature and is an integral part of its dynamic process, whose forces are greater than man and in which he is immersed. Nature is the expressive source of life. Man must find reconciliation and harmony with nature. EE should be both critical and creative. The anthropocentric worldview should be replaced by an onto-centric world view. A transcendental humanism should be developed. The industrial capacity of homo faber (man, the maker) has been a factor in human and cultural development, but an exclusive industrial mentally stunts the human being. The aim of EE is to defend and improve the environment for present and future generation.

Chiappo recalls that the Tbilisi Declaration appeals to member states to include in their educational policies measures designed to introduce environmental concerns. The simple alternative is to introduce a kind of 'course' on EE. The other alternative would be a complete overhaul of educational and cultural policies in the light of EE and related contemporary problems, introducing an integrated programme of interdisciplinary learning.

Helen Fessas-Emmanouil (1978), a Greek architect, has traced the difficulties, which arose when the integration of school and educative community factors were attempted. Integration was not very successful in some countries like France and Germany because the upper class members of the community tended to use the common facilities more. On the other hand in countries like U.K and U.S.A the community colleges and community centres have been more successful in places where open community relations have developed. Ideally it is possible to think of a city planned to build in education, so that much of the separate facilities built under the name of schooling would be incorporated in it. The city itself
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would then do much of the present functions of the school in an invisible manner. Still, the school would be required for peer socialisation and certain other specialised functions.

Ignacy Sachs (1978), Director of the International Centre for Research on the Environment and Development, has examined the theme of 'Environment and Development - Key concepts for a New Approach to Education'. The radical ecological movements preach a self-imposed frugality. The industrialists and developers on the other hand argue that the radical ecologists suffer from a kind of reactionary neo-romanticism deliberately ignoring the real unsolved problems of industrial society. The Stockholm conference took a midway position between unrestrained development and the zero growth stand. The challenge is to find out how to harmonise economic and social goals with ecologically sound management of resources in order to avoid over-stepping the limits of use of resources and triggering off irreversible climate alteration processes lethal to humankind.

The ecologist is concerned with handing on to future generation a habitable planet; the economist is interested in putting it to immediate profit. This results in a conflict. Solution is sought in the use of solar energy in all its forms, renewal and recycling, social control of technology to prevent environmental degradation, appropriate technology not limited to rural technologies alone, and the management of technological pluralism.

The ecodeveloper may alter nature, but while doing so, he will try to imitate and respect the laws of nature. While tapping renewable resources, he will strive to maintain the condition of their renewal. He combines cultural anthropology and ecology resulting in a new field cultural ecology, which respects the uniqueness of cultural contexts and many possible paths of development.
Some case studies cited in the next six pages are taken from Saveland (1976). They are suggestive of models in environmental education.

The case study contributed by the council of Europe on Nature Conservation Education limits the work at the Primary stage to awakening interest in nature in general and, an introduction to study of surroundings, respect for life and all living things and the duty of young people and particularly behaviour towards nature. Aspects like food chains, energy flows, cycles of carbon, nitrogen, etc. ecological pyramids, distribution of natural resources, regional planning, study of pollution, etc. are recommended for treatment at the secondary stage.

The Yugoslavian Case Study describes the Nature Conservation Curriculum in the Primary grades. The Victorian “Backyard” Curriculum Development Study is an attempt at integrating the technical and academic steam in the high school, using materials especially prepared by the teacher: The Cordoba seminar on the conservation of the renewable resources in the high school curriculum includes the following themes: (1) The ecosystem (including man’s transformation of the ecosystem by means of work) (2) matter and energy in the ecosystem (3) evolution and dynamics of renewable natural resources in Argentine including aspects like industrial revolution, regional inequalities, contamination and environmental deterioration due to industrialisation etc. Environmental Study has been worked up sufficiently to form the basis for a complete ‘A’ level syllabus in some system in Great Britain.

Two cases from the United States of America present well-formulated models. Rudolf Schafer (In Saveland, 1976) has presented a model entitled “Ekistics: A guide to the Development of an interdisciplinary Environmental Education Curriculum”. Ekistics is defined in this context as “that field of study, that area of knowledge, and those concepts and values
through which man recognises his interdependence with the environment as well as his responsibility for maintaining a culture that will sustain a healthy and sensitive environment."

This model attempts to integrate the disciplinary requirement with the environmental approach. In the conceptual framework from grades 1 to 6, three conceptual pathways – science, social studies and humanities – are recognised. The concept of interdependence is explored in terms of (1) interchange of matter and energy, (2) social interaction, (3) cultural components.

The science pathway, for instance, is explored progressively at the six levels from common needs of living things, through differences in environment with characteristic features of life, interchange of matter and energy, conversion into characteristic forms, constant change in environment, to man as agent of change in natural environment. A nearly balanced progression is seen in the other two pathways also. The cognitive-affective frameworks are extended further at the middle and high school stages.

A still more structured model is developed in Balzac's (1976) “Environmental Education in the K-12 Span”. A 3-dimensional grid is presented suggesting some major areas of objectives in EE. One of these dimensions is the effective objectives starting from attitude of inquiry through desire to achieve constructive solutions, sensitivity...valuing living things.... to appreciation of natural beauty and enjoyment in interaction with environment. Another dimension explores the topical areas starting with soil, air, water, living things, diversity... though change, evolution, energy, technology, pollution and health to historical, social and cultural aspect and music, language and art. The third dimension analyses the process aspects: effective use of the senses, observation, description, measurement, communication, inferring, predicting, experimentation, data
recording, data interpreting to environmental planning, appropriate social and cultural skills and language and artistic skills.

In the Vikram Sarabhai Community Science Centre, Ahmedabad, groups are first introduced to different types of activities: (1) Taking a walk in the meadow behind the centre which was really a natural outdoor science laboratory with birds, trees, plants, insects and a variety of contours and characteristics (2) Browsing about exhibit tables realistically and symbolically are presented by the Ahmedabad environment (3) Sitting down to a discussion on the subject. After consolidating the working inquiry process, five stable groups were formed, dealing with: (1) The Sabarmathi River (2) Water Tap (3) animal Habitat (4) Termite (5) Me and Water. Each group formulated investigator questions and proceeded about its work. A number of interesting structural differences from traditional school experiences were noticed. Many typical science process outcomes were being realised. However there was a tendency of participant attendance drop out. But the younger students tended to stay with the programme.

Carnival in the cause of Environmental studies is presented quoting Velerie Jenkins: "It is not enough to protect your environment. Today you have also to celebrate it". This case emphasises the rediscovery of the street and also the good use to which old folk culture was put, like street theatre and street festivals, ground for the street story teller. Dick Kitto has developed journeys of exploration of 'Street Seminar'. In the North Islington Special Project, children observed and analysed the buildings in the neighbourhood and expressed their affective impression in art activities and in writing. This was followed by a procession along the streets with children dressed up as parts of the environment.

The Netherlands School Gardens case studies (1976) describe the service for school and children's gardens. The need for this service arises from
the fact that young people in Hague are growing up in an environment consisting only of house, roads and factories with scarcely any contact with nature. In large cities there are children's farms where the service provides children as young as three years opportunity to come into contact with domestic animals. The child-animal contact is thought important in moulding the child and also in developing an attitude favourable to EE. School garden is organised in two different lines: during school time as a practical way of biology education in the course, and after school times, as a leisure activity under the guidance of experts. The other activities of the service includes: Demonstration lesson and Excursions, Models of biology lesson ("Nature of the month"), information centres, visitor centres, landscapes and the Botanical Garden and Nature trails. The Nature trails contain descriptions of the flora and fauna, besides directing attention to environmental problems. They help the hiker learn more about nature and to distinguish the different processes that go on in nature. There are special trails for school where nature study learnt during field trips is integrated with their school skills such as aesthetics trails for children between 10 and 14, which help them to discover nature while playing.

In the youth activity in Environmental Education, USSR and Poland, massive representation of youth in conservation and allied activities is seen in USSR. In RSFSR alone there are over 20 million members of the All Russian Society for the Protection of Nature: This trend is reflected in all the other soviet republics. Lakhs of children participate each year in environmental action under the guidance of teachers and voluntary readers. The action includes gathering seeds and nuts of valuable trees, planting shelter-belts, protecting forest areas, erecting nesting boxes, looking after birds and animals, especially in winter time, saving fishes from spring floods, celebration of days and months for birds, forest fire, setting up and maintaining school forest, helping in enforcing hunting lands (older students), organising round table discussions, publishing and organising exhibitions.
Wolsk (1976) has presented a detailed analysis of the methodologies of EE. He lists the axes or dimensions of methods as active vs. passive, descriptive vs. analytical, informational vs. experimental, survey vs. selected in-depth coverage, which can be relevant in choice of EE methods. Alternative approaches to content and activities are also explored. The various methods and resources that can be used in EE, such as pollution measurement and monitoring field trips, mapping, outdoor areas, museums, mini plots and mini environments, exploring the environment (listing and ranking common annoyances, walking in streets, designing houses, perception experiments, describing, simulation, role play, game methods and conscientisation.) The variation of methods for the different stages and the processes and principles of selection methods are also discussed. For very young children holistic approaches integrating with child’s own learning process will be more effective. It is only at about 10-11 years that the child is ready to separate himself from the environment and see it from other points of view. Wide ranges of socio-economic issues connected to EE are best dealt with by mid-adolescence. The rigid centralised external examinations, structures and the centrally designed curriculum giving little scope for the teacher impose constraints on genuine EE. The excellent work done by teachers in U.K in local curriculum making is also noted.

Curriculum models are implied in many case studies analysed in Saveland (ed.) (1976) When the spiral principle is applied to environmental curriculum, the primary stage (age 5-11) concentrates upon observing, identifying, classifying into sets various factors of the environment, the middle stage age (11-14) on perceiving patterns of environmental relationships in national and world wide scales. The division of the world into continents, culture areas and biomes can be understood in the middle grades and the upper stage (14-17) is considered appropriate for the comprehension of movements and issues, with an ethical focus. A model
for curriculum development in EE is also suggested: Planning - pilot study - feed back analysis - construction-extensive field trials (evaluation) - production of teaching aids - inservice education of teachers - establishing routine.

Interdisciplinary approaches become relevant in EE in several ways. Manya, a Japanese specialist in geochemistry of the hydrosphere, discusses the chemistry of natural waters, water pollution and the relationship between man and nature. He has coined the term, 'Sociological geochemistry' and contributed to this new field.

Stapp (In Prospects, 1978) has developed an instructional model for EE. The systems and root causes of the environmental crisis are explored through the use of five questions organised in a hierarchy and each question explored on multiple dimensions. His model starts with the establishment of specific objectives under awareness, knowledge, attitudes, skills and participation and proceeds to the guiding principles to help achieve goals and establishing the curriculum. The philosophy and concepts are discussed for different aspects of the environmental curriculum. The environmental encounter is developed as a specific instructional technique, which includes definition of problem, becoming informal, identifying and evaluating alternate solutions, developing and evaluating plan of actions. A gradient model is also presented in which environmental sensitivity will dominate at the lower levels, whereas factual knowledge, problem-solving skills and philosophy will increase in density with the grade level.

Robinson, a renowned biologist, who had been a teacher handling subjects ranging from biology to history, and practising as a tropical biologist for over fifteen years, draws the philosophy and practice of environmental education in the tropics. He expresses his deep-rooted conviction that EE suffers from what can only be called 'The
Enlightenment Fallacy'. He argues that education and knowledge alone are insufficient to solve the problems of facing mankind in the tropics and ensure rational exploitation of the environment.

Robinson brings out the relevance of political sensitivities in relation to environmental education. Ancient history according to him must be taught bringing out its relevance to present day reality. EE taught without this perspective can result in attitudes on specific cases where the short term interest of our species must be viewed as conflicting with its long term interests. As regards the content of EE, Robinson suggests that biology should be put as the central subject of environmental science/studies and form a natural core around which everything else fits.

Schafer's Ekistics already referred in an attempt to an interdisciplinary EE curriculum. Ekistics is defined as "that field of study, that area of knowledge, and those concepts and values through which man recognizes his responsibility for maintaining culture that will sustain a healthy and sensitive environment". This model attempts to integrate the disciplinary requirement with environmental approach through grades 1 to 6. The model recognises three pathways - Science, Social Science & Humanities. The concept of interchange of matter and energy, social interaction and cultural components.

B. ENVIRONMENTAL KNOWING

Moore and Golledge (1976) have analysed in depth the concepts and theories of environmental knowing. Cognition refers to all forms of knowing, and this subsumes the more specific process and sub-stage of sensation, Perception, imagery, retention, recall, reasoning and problem-solving and judgement and evaluation. Cognition includes all the process by which visual, linguistic semantic and behavioural information is selected and encoded, reduced or elaborated, stored or recovered and decoded and used. Environmental cognition is defined as "the awareness, images,
information, impressions and beliefs that individuals and groups have about the elemental, structural, functional and symbolic aspects of real and imagined physical, social, cultural, economic and political environments”. It refers to information, its truth and validity, subjective beliefs based on partial, incomplete, or even misleading information to spatial-encoded images”, linguistically encoded “impressions” about the environment, to events to dynamic, functional and cyclic happenings, to patterns and conceptual similarities and to the sentiments personal meaning and to people’s collective symbolism of various parts of their environment.

The next ten studies are drawn from Moore and Golledge (1976).

Down and Stea (1976) have defined the term cognitive mapping as “the process by which people acquire, code, store, recall and decode information about the relative locations and attributes of phenomena in the every day spatial environment.

Many contemporary theorists treat perception as a subset and as a function of cognition. Piaget’s distinction between (1) knowing that is essentially figurative and related the precepts or images of successive states or momentary configurations of the world by direct and immediate contact and (2) operative knowing related to the operations that intervene between successive states and by which the person transforms parts of the world into recognisable schemata and structures is adopted and developed by environmental psychologists. Visual perception is only a form of figurative knowing, whereas intelligence or cognition is based on the operative mode in Piaget’s system. According to Wagner and Werner, knowledge about the world may be constructed by many means, perceptual judgement being only one. Perception is thus both a subsystem and a function of cognition.
Another term that appears prominently in environmental cognition is "representation" or "cognitive map". According to Piaget the dual use of the term "representation" are (1) knowledge which may be termed as "conceptual representation" or "cognitive representation" and (2) the representation of absent realities which may be termed as "symbolic representation" or simply "symbolisation". Representation may be given the status of an intervening variable, a hypothetical construct, or a metaphor.

Stephan Kaplan (In Moore and Golledge ed., 1976) points out that "cognitive maps, beliefs even prejudices are not clearly separable portions of the cognitive apparatus. Rather they are all cases in which an individual possesses an internal model of a portion of his environment". He assumes that the evolutionary environment was uncertain and dangerous. Object recognition, anticipation of future events, abstraction, generalisation and responsible innovation are needed for survival in such an environment. On this basis he discusses the management of uncertain information – handling capacities and mechanisms, the importance of space, anticipation and the coding of sequence etc. His analysis of making one's way is particularly relevant for EE with concepts such as visual distinctiveness, inferred distinctiveness and functional distinctiveness in landmarks and regions.

Down (1976) agrees with much of the analysis of the Kaplans but parts company with them on the question of "In what way is the environment in the head"? He sees a tension between product (map) and process (mapping). He warns against the temptation to slip into the belief that a map is something that people have stored away somewhere in the head. We get dangerously close to treating spatial knowledge as a form of mysterious cognitive atlas.
Down concentrates on the process of information processing. He agrees that "our understanding of the process of human way-finding is far less developed than that of creatures lower down the phylogenic scale" and that imposes a limitation on the Kaplan model.

Down in another paper shows how Kelly’s Personal construct theory (PTC) might aid in the process of environmental cognition. He notes that "the environment is not just another variable to be thrown into a multiple regression model; it is the raison d’être of whole class of behaviour that is devoted to solving spatial problems." Kelly’s constructive alternativism is considered as a better model for exploring environmental cognition than the prevalent epistemological position of accumulative fragmentalism. (ie, There is a single truth underlying the world which is revealed only gradually by the patient collecting of bits of knowledge and understanding).

Honickman (1976) explores the application to urban of PCT and environmental meaning. Some major concepts used in the analysis include: laddering (to elicit superordinate or subordinate constructs), repository grid, resistance to charge and implication grids, resistance to change and implication grids, links (by competent loading, by eliciting, by laddering, by parallel implication, by reciprocal implication). Two linear link diagrams, a construct-space diagram, and an implication network showing the relationship between constructs across the 'boundaries' of Principal Components are given in illustrating the Design Research Application.

Moore (1976) has presented the theory and research on the development of environmental knowing based on a comprehensive reading of Piaget, Werner, Kaplan and others. The interaction of biology, culture and environmental experience, action and transaction, mediation, structure, the process as in the transformation from global, simple, concrete, undifferentiated and egocentric stage to the abstract, complex, co-
ordinated and hierarchically integrated stage, are major components in his paper. Illustrations are drawn from the model village and sand box model of child's school-yard and environs as studied by Piaget et al as well as more complex maps and model landscapes used by other investigators. Some of the investing conclusions are: There is a temporal parallel in the understanding of the order of the spatial environment and of the roles and activities played out therein; it is not just a matter of how much is known, but in what ways knowledge is organised; the transactions between intraorganismic variables like values, SES etc. help to understand how people come to know the environment and how they organise that knowledge.

The environmental knowledge that the individual has already acquired is often described as a 'Cognitive Map'. According to Muchrke any part of the real world can be represented in any number of ways—there is no 'standard' or single cartographic map, no more than what nouns has called a 'metaphor' for the world itself. But the casual use of the term map is often barrier in attempts to understand the mental representation of the environment. It may be more useful to view spatial abilities and representation in the sort of terms used by Liben.

Brewer and Treyens (1976) have suggested that there are five ways in which schemata could influence memory performance— including memory for places:

1. Encoding schemata which determine which objects are looked at and encoded in memory;
2. Frameworks schemata which help the selective retention of information;
3. Integration Schemata recalling the old along with new information.
4. Retrieval Schemata which guides the search for information in memory; and
5. Communication Schemata which may influence the subset of information selected for answering a query given instructions etc.
The physical environment has the potential to be a major factor in well-being in childhood, and in consequent development to a fully realised adult. Moore (1976) suggests the term Terra Luden (earth play) -the basis upon which the child can ‘acquire creative intelligence by interacting with the inherited world’. It seems intuitively likely-and equally difficult to verify empirically-that a sense of attachment to place or places (often with a stress upon their physical qualities) is important to full human development.

Recent research and writing of Wheatley (1991), Ritchie and Russell (1991) Ritchie (1994) reveals that the educational development of a child is inseparable from the being which the child has become, brought about though a complex history of social interactions and related to the context in which the child has been raised. As children develop, they continue to construct their own being, and education as an experience can affect and contribute to this process. This constructivist approach to the way in which children learn has challenged the Piagetian emphasis on individual cognitive development.

Constructivism is an epistemology which focuses on the role of the learner in the personal construction of knowledge. Learning is viewed as an adaptive process where the learner's existing knowledge is modified in response to perturbations which arise from both personal and social interactions (Wheatley, 1991).

C. COMMUNITY

Community is thought of as a place where a collectivity shares common experience, where the interests of people are localised. The common wants of people are satisfied by residence in that place and “all communal ties and activities are only justified if and so far as they arise from corresponding common wants. The communities grow with the growth of the underlying common wants, and they decay with the decadence of
these wants, which are virtually the motive force of the communal development.” (Surangi-unger, 1948)

A community is a unit of society in place. In some of its uses community refers to a primary face-to-face collectivity and may be called a neighbourhood; on the community may be a secondary collectivity made up of a mixture of people, a mixture of work activities, and a mixture of formal and informal groups with a good share of its anonymous life. The ‘secondary’ dimension of community may have a formal or civic identity which is quite separate from the many types of groups in terms of which its life is organised.

The term ‘community is used interchangeably with ‘neighbourhood’, especially when the primary group relations are focused. The test of neighbourhood is that the neighbours know one another, or they may be mutually aware of each other’s presence and behave accordingly. There are two types of neighbourhood – neighbourhood of primary participation (where one has to be accepted as a member) and neighbourhood of secondary participation (e.g., a distinguished person goes and settles in a village; he is respected, but not accepted as a member). The more urbanised a community, especially a community that is growing, the more mobile its population tend to become. In any urban neighbourhood members suffer isolation and are not accepted as neighbours (Bakke, 1940).

Consciousness of community refers to the feeling the individual has of belonging to a place as he occupies himself there with making his living and gaining some degree of status. Whether he works for his own interest alone or also tries to serve others, even though he is no more than a unit in the mass, if he is integrated in the work and life about him, he makes his contribution to that kind of community life that is called urbanism.
The way of life of the urban community is more complex than the way of life in a rural or tribal community. The ways of work and living in the more rural communities have a season-to-season continuity much as the tribal ways of work and living have a generation-to-generation continuity.

Bardet (1949) points out that community comes into existence through the fusion des consciences et des activités (fusion of consciences and activities). It finds its unity through a sort of internal consensus. The community is an assemblage of organisations which have their purposes and relationships and which perform diverse functions.

Keeping order is perhaps one of the oldest functions of community life. Since the community is also an aggregate of consumers, supply of food and the essential commodities becomes another function. Rearing of children is another function. The individual also has certain rights and responsibilities in the community. With all these the community is an integrated organisation.

Communities do not live in isolation. For the modern community, isolation means extinction. The relationships with the outside not only contribute to the formation of a consciousness of community, but they also contribute in many ways to making a community what it is.

Community Resources
Community resources are relevant for every subject, but their use in the broad umbrella of social studies have been analysed in depth by Kaltsounis (1979). His analysis shows that community resources and current events are elements in the immediate environment that can be used to illustrate concepts, generalisations, values or human conflicts. Whether they be persons, processes, persons or events, they can be effective instructional aids because they are closely related to the
children's everyday experience. Compared to the text book, they provide a more direct approach to the achievement of educational objectives.

There are four main reasons why community resources are valuable:

1. Teaching and learning become relevant because they are conducted through the children's experiences.
2. The community provides excellent opportunities for social action and for the development of intellectual and social skills.
3. The school and the community grow closer together.
4. The children learn more about the community, become involved in its affairs, and therefore may become better citizens than otherwise.

A wide variety of community resources are available. Some educationists think that the community is the best laboratory available for teaching, especially social studies. Some resources and activities for the areas of study for each grade are suggested by Kaltsounis.

It is imperative that the teacher must get to know the community. A number of ways are suggested. A teacher studying a community should develop a file of community resources. Three models are also suggested for systematically tapping community resources to achieve both content and process objectives. Colings (1967) advises a ten-point system: 1. location; 2. telephone number; 3. contact person; 4. time to call; 5. length of visit; 6. number of students; 7. materials available; 8. services available; 9. trip outline; 10. dates of trips and other comments. JoAnn, Buggey (1976) suggests total involvement of the teacher, students, the school, the parents and the community to work together on the basis of a three-stage model: organisation, implementation and evaluation. Armstrong and Savage Jr (1976) propose a more elaborate model of using community resources. It starts with the recognition that children have many stimulating and educational experiences simply by living in the community. A successful community-focused social studies program for the middle grades depends upon (1) a careful identification and categorisation of stimulus experiences and (2) a clear explication of categories of anticipated pupil learnings. The stimulus experiences are analysed into
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three: (a) historical residues, (b) present interactional experiences and (c) likely future patterns. The pupil learnings are divided into three areas of ability: (a) to make grounded generalisations, (b) to examine values (communal and personal) and (c) to make decisions. The teacher must match appropriate stimulus experiences with anticipated pupil outcomes. Field trips are also an important way of using community resources for education. The details in planning the trip, while on the trip and as follow-up of the trip have to be carefully looked into.

Current events (also called contemporary events, current affairs or contemporary affairs) apply to what is happening in the community or what is happening elsewhere that influences conditions in the community. The major values of current events are:

1. They are a source for meaningful issues.
2. They bring textbook materials up to date.
3. They convey the changing nature of society as well as the persistence of some issues.
4. They enhance the child's ability to judge and distinguish between fact and opinion.
5. They help children become knowledgeable about their world—a valuable characteristic of citizenship.

Current events in the form of controversial issues are becoming more important in recent times because of the heterogeneity of the communities and conflict of interests. Discussions of such issues broaden the outlook of children and increase their capacity to resolve conflicts. However, some issues persist and need systematic treatment rather than occasional discussion. It is often complained that when we use environment-oriented methods such as using current events, the structure of the subject does not develop systematically. Kaltsounis gives some hints for combining current event with a structured social studies programme. He suggests that in the kindergarten stage it can be devoted to the study of an individual, the birth of a baby brother or sister etc; in grade 1, the area of study can be the family; in then second grade, the community; in the third grade, the city; in the fourth grade "People Need the Earth"; in the fifth
grade 'The Making of Our Nation'; in the sixth grade the world in general. These are only rough indications.

Commercial programmes also can be used for current events, judiciously. Government publications are also a source of current events. Above all the teacher has to organise the current information in optimum ways using News bulletin board, Weekly discussions, News broadcast, News notebooks or clipping pads etc.

Even in teaching Maps, Globes and additional aids, it would be necessary to begin with environmental and community facts as starting points:

1. Take walks around the neighbourhood and talk about various cityscapes the children encounter.
2. Encourage children to talk about trips they take to forests, mountains, beaches, lakes, rivers, parks and the like.
3. Have discussion about astronauts and their trips.
4. Show a globe...
5. Show coloured pictures with bodies of water....show a globe and ask them to hypothesise what part of the globe might be covered with water.
6. Take the children outside and teach the cardinal directions by referenced to the position of the sun.

Blank (2000) refers to Coalition for Community Schools (CCS) which helps strengthen and sustain the school-community partnerships by tapping the assets of the partner organizations to help make community schools, a permanent part of education and community landscapes. The functions of the CCS are to develop programmes and services in the following five areas.

a. Family and community engagements.

b. Quality education-to meet challenging academic standards and use all the community assets as resources for learning.

c. Youth development-so as to enable them to serve as resources to their communication.

d. Family support and similar other supports enhance family life by building an individual's strengths and skills.

e. Community development.
Besides social studies, the other subjects also lend themselves to profuse use of community resources. Plenty of studies on the use of out-door-science and community science have been published. One elaborate study on Environmental mathematics (Mercykutty) has been reviewed in Chapter III. Hence only a brief mention is made of community resources in science and other fields.

Orion and Hofsteinc (1994) have identified three types of learning environments in Science teaching - classroom, laboratory, and outdoor. The outdoor is the one most neglected by teachers, curriculum developers and researchers. Outdoor activities (field trips) have the potential to enhance constructive social relationship among students as well as many of the variables that characterize learning environment measures. To create a healthy learning environment, there is a need for more research that will assess how time spent on field trips affects students' perceptions of the learning environment. It is desirable to further study the effect of different modes of field trips in the context of different Science subjects on the learning environment.

For an effective programme of Science, adequate teaching materials are also essential. Community resources that are suitable for the purposes should be made available and should be used when needed.

According to Thomas (1983), not all out-of-school learning is completely informal. Some learning arranged by clubs and societies can be highly organised. For example, first aid classes require dedication and a high commitment to learning. Other activities require the participants to be extremely careful in the way they participate in an activity. “WATCH”, an environmentally-oriented collaborative project across Britain usually includes some elements of research. One project was to map the distribution and abundance of butterfly species. Between 2000 and 3000 young people participated.
Balfaz (1988) considers how the mathematical knowledge that children develop on their own, outside of formal schools can be put to use in contextualising mathematics.

Clements and Jones, 1981 indicate a case study from Papua New Guinea which detailed the learning process of a child who came from a society which did not have names for numbers, still it was evident that there was mathematical knowledge in the society but conceptually quite different to the standardised, western-oriented version.

The Controversy around the Community School in the U.K.

Just as developing countries have large areas, especially in the rural sector, city slums etc., where the majority of pupils fail to cope with the formal school, there are pockets of very disadvantage communities even in developed countries. In the United Kingdom, the Plowden Report called such areas as Educational Priority Areas (EPA), and recommended community schools with special kinds of education, including compensatory education to offset the disadvantages. This has triggered an interesting debate, which is highly relevant for our present situation and the topic being investigated. Since there are only two papers – a thesis and an antithesis, they are being reviewed at some length.

Eric Midwinter (1972), Director of the Liverpool EPA argues for a new sort of curriculum in the community school in keeping with the social role of the school in the community. Much of the changes associated with the Plowden Report were concerned with the method and done little with changing the content. Midwinter claims three advantages for the community-oriented curriculum in the Liverpool EPA: (1) children will do better in the traditional skills because these skills will be geared to their experience; (2) the child is dignified by the curriculum dealing with his
world and not evading it for ‘the cowsheds of rurality’; (3) parental involvement would be increased.

The community school in the U.K. has many definitions, but most of them tend towards a more intense usage of the plant by the community in the evenings and during holidays, and usually an ‘open’ as against a ‘closed’ school and some pattern of parental participation in school work. But there is the danger that the community school will be the same package as before, ‘wrapped’ more elaborately. There is a case for the community school having a community-oriented curriculum suited to the aims of community education.

The community school should go beyond its usually accepted aim of achieving harmony between school and community. Besides being a means, it could suggest an end. There is a fundamental need for communal regeneration and for resolution of the dreadful ills that beset the inhabitants. Palliatives such as resources and services from outside which may include even the transference of social and educational problems will be ineffective without participation and self-regeneration of the people involved.

Midwinter explains the difference between community education and compensatory education. The social purpose must become implicit in the curriculum. The teaching of French, induction of hardware, records, tapes, earphones, language laboratory, may just be cosmetic in many cases. Many children may be becoming illiterate in two languages instead one through these approaches.

Community education is accused of inward-looking and the restricting the child permanently to his own local environment. On the other hand community-oriented curriculum is finally outward oriented. With a stable base of understanding of one’s own locale one can look outward to wider
frames of reference. A mastery of the immediate situation is surely the most practical means of fitting children for adaptation to other situations. Social skills can be best exercised in one's own viable situation.

Midwinter explains several social environment probes: examination of immediate social agencies, such as the school itself, the church, shop etc.; cultural and literary heritage of the locality; street surfaces, derivation of street names, changes in building usage; use of festivals; creative expression around themes; projects to improve children's mathematical and linguistic competence. By the age of seven or eight the primary child is ready to examine his community thoroughly. The child-centred approach involves considerable amount of localisation of the curriculum.

Merson and Campbell (1974) argue for the contrary position – that the recent programmes for community education are based on a myth that socially cohesive communities capable of effective community action exist or can be developed in urban areas. Following of this myth has led to abandonment of the goal of equality of opportunity through an academic curriculum for all. It also prevents the inner-city child from entering the mainstream of social and political discourse. Though taking a contradictory stand, they have summarised the views of the progressivists such as Midwinter, Halsey and Nottingham University's Social Education group clearly and fairly:

Community Education is not simply a matter of involving parents in their children's schooling, nor enabling adults to use the school plants in the evenings. It is a much more positive and all-embracing concept... that the community itself should be educative, that the boundaries between school and community should be dismantled, and that 'education' should occur through participation in the community's activities, and through the community's control of its own education. The education system in the urban community should become 'more truthfully the people's system'. In some inadequately defined sense, the community would become the curriculum...

Halsey's views about giving the 'priority area' 'opportunity for equality' rather than contributing to aspirations for equality – for access to higher
education or for outcome - are cited with the note, 'It is difficult to better
Halsey’s exposition':

Were we concerned simply to introduce a greater measure of justice into
an educational system which traditionally selected the minority out of the
EPA districts, leaving the majority to be taught, mainly by a huge hidden
curriculum, a sense of their own relative incompetence and impotence – a
modern humane and even relatively enjoyed form of gentling the masses?
Or could we assume a wide programme of social reform which would
democratise local power structures and diversify local occupational
opportunities so that society would look to its schools for a supply of
young people educated for political and social responsibilities...

Again they summarise the position of the progressivists thus:

It will be unfair to report the curriculum as a host of interesting and locally
relevant activities. It is also concerned to increase children's social
awareness, to give them some cognitive grasp of the structure of their
immediate environment....Midwinter suggests as a transitional step that
half the school curriculum be given over to them, that the balance change
from 'academic' to 'social', from the 'irrelevant' to the 'relevant'

Up to now the report can be read by a progressivist as a compliment. The
summing up sentence is however negative: "Thus the reported
descriptions of the pupil's work suggest an extremely fragmented set of
activities or projects, whose major common feature is their alleged
'relevance' to the environment in which the pupil exists. The critical
authors add that in terms of 'analysis of what the curriculum is about,
community curriculum makes an absurd entry'. They argue:

Not only from the Hirstian position that the curriculum is (ought to be)
about initiation into the distinctive forms of rationality and thus will enable
the child eventually through the use of reason to be freed from what is
delective or doubtful and also from the current cynical sociological
perspective that the curriculum is a collection of values and procedures
though essential by a socially dominant group for the initiation of their
children into dominance, the socially relevant curriculum is a frightening
perspective. In either perspective, the community educated child will be
isolated and impotent. There are claims made for the universals of
intellectual procedures and languages that every child destined for any
degree of political autonomy must acquire.

From this they argue that "Community Education will disqualify these
children from entering the realm of political discourse at all". They
recommend that education should "find appropriate ways of initiating
children who will otherwise be considered ineducable into forms of discourse that will enable them to resist manipulation ... the less able child must also be initiated into the language of dominance." Arguing this point, Merson and Campbell claim credit for "genuine radicalism...in ensuring that no child shall be cut off from the mainstream of social and political discourse by the accident of inner urban residence."

Some comment on this debate would be appropriate. It would appear that the 'logical', 'rationalistic' and conservative group claims to plead for radical empowerment of the downtrodden inner city children. But it must also be remembered that Midwinter and others who argue for using the immediate environment as the starting point (Dewey, Gandhiji and disciples and many other mature progressivists may be added to the list) have been working with the disadvantaged groups on a participant basis and often found that using the immediate environment is the most effective method of releasing their capacity for language and rationality, and empowering them. They usually end up with a workable dialectic. The 'rationalists' seem to talk from a theoretical pedestal drawn from the experience of the elite groups. It is doubtful whether they have first hand experience of the difficulty which first generation learners have in coping up with the standard language and texts representing à priori logic, the extent of alienation, frustration, drop out phenomena (if they are allowed to drop out), hidden curriculum to train them to enter the mainstream in subordinate capacities etc. They generally present the antithesis to the thesis of progressivism. Merson and Campbell must however be complimented on summarising the thesis of Midwinter and others of the progressivist school, before presenting their antithesis.

The British experience in working with disadvantaged groups in the United Kingdom itself, particularly in urban slums, might have been one of the inputs in their projects manned by the Department for International Development designed for or with developing countries, particularly the
rural communities. This analysis is presented under the head 'Contextualisation' which follows immediately.

D. CURRICULUM CONTEXTUALISATION STUDIES

In many developing countries a modernised educational system has been imposed and even got assimilated on the model of western systems. The model western systems themselves might have been subject to internal criticisms in the light of social and technical changes, and might have been modified considerably. But the third world models seem to take anchor and to get accepted by a large section of the population as the norm. The 'educated' sections in those countries which have benefited by it want its continuance. Even among the uneducated sections, many look upon it as the means through which their own children will be able to rise up to the higher echelons, and look upon it as a prized target even though at the moment their success with this system may not be high. The 'modernised' system does produce a small minority who really profit by it and some even come to the level of being able to compete in the world market with the products of the developed world. A much larger proportion, but still a minority of the population, get through the system with success, but might not have fully acquired the benefits of modernisation, or educated in the true sense. They might have graduated, but if they fail to get a white collar or blue collar job to which their education prepares them, they might be misfits in the social system, and may need to get 're-educated.' There is a still larger section, especially from the poorer groups, which is not able to cope with the formal educational system, and ends up by losing the benefits of the productive competencies which the community originally had, and fails to get the benefits of what formal education seemed to offer to all on equal terms.

This section which loses the benefits of both the worlds — world of the productive local society and of the certificated competencies of the formal
school system is far more numerous in the rural sector than in the urban. In the urban sector also there is a large number of the poor, the unemployed, those who have migrated in search of employment, the slum dwellers, the shelter-less, children of floating population of workers etc. who are not adjusted to the formal school, and end up as failures or drop-outs. Children of the last category may not even enter school at all. But it is difficult to group them adequately and formulate a plan. Even the failures and drop-outs in the urban areas stand a greater chance of getting some employment at least in the unorganised sector – at the last resort even in the underworld.

Some prophets of education have fixed the blame on the system itself, which ‘certifies’ the educands rather than giving an education. Even among those who have overtly passed, many have had a mis-education. But the prescription given by the prophets such as Gandhiji and Tagore are implemented in faith and commitment only by disciples, not by an official system. There are several such cases of official ‘missions’ taking up schemes needing lofty vision and high commitment and reversing the policy. But some groups of workers at international level feel that some practical steps can be taken even by ordinary people in the rural context because in the rural setting: (1) it may still be possible to identify a community which could help to get the poor downtrodden people to overcome the double alienation caused by the imposition of an urban and ‘western’ model of schooling; (2) it may be possible to identify a limited number of productive occupations which may also be educative. It is in this setting that studies and action projects on ‘contextualisation’ have been attempted in several countries.

Under the term “contextualisation’ plenty of concepts which had been organised earlier around the term ‘environment’ and ‘community’ have been explored in theory and application during the past five years. It would be worth exploring some of these ideas in this subsection. The
Department for International Development of the United Kingdom (DfID) [Taylor and Mulhall (1997)] has produced several booklets covering the experience of several developing countries on *Contextualising Teaching and Learning in Rural Primary Schools: Using Agricultural Experience*. C. Seshadri was the Indian member of the team. The project attempted to explore the use of a local-based occupation like agriculture as a contextualising media in primary education.

Taylor and Mulhall explain the theory of contextualisation under the section "The Learning Environment," particularly with reference to Primary Schooling in rural Areas. They are aware that parents in rural areas may be very suspect of their children receiving an education packaged as 'rural', which they perceive to be inferior to other aspects of the national education system, and limiting their chances for future employment and educational progression. In curriculum reforms relating learning more closely with the learning environment, socio-economic factors also should be taken into consideration. Far-reaching structural changes such as adapting the school year of rural schools to fit more closely with the agricultural cycle may be needed so that children who are expected to participate in agricultural activities will be able to do so without missing schooling.

The complexity of the rural environment with interlinking between three distinct environments – the home, school and the community – is illustrated in Figure 1.

The linkages between the different environments may vary in strength. The learner is the common element in the linkage and may be expected to have strong links with each of the three environments. The linkages between the three environments may themselves be comparatively weak. It may be feasible to discuss how to strengthen these linkages after a brief discussion of each environment.
Figure 1: Linking school, home and community environments

The Home Environment of the rural child may be considered to be weak from the point of view of linkage with the school. Since parental income is low, the rural home cannot be expected to make a financial contribution to strengthen the school. Children are expected to assist the parents in production-related tasks, and often miss school. The timing of the school is made keeping in view urban industrialised systems. Hence there is a need for a system of education which would develop the learning potential of rural children and take care of rural needs in relation to resources and future changes (Ader, 1969). The formal education received by the rural parents is likely to be relatively low. They may not attach sufficient value to the education of their children. Homes and even schools in rural areas are likely to be ill-equipped to meet the educational needs of children. The children are likely to be under-nourished and in poor health. The gulf between an urbanised curriculum and the realities of rural life is likely to be high. Adverse environmental circumstances may deny children the security and emotional adjustment essential for consistent application to the tasks of learning in the formal primary school. Curricular activities which make the most of the immediate environment seem particularly valuable to them. Disadvantaged children in the rural area have a limited background of the type of language needed for success in school. The
school-preparatory experiences may be limited in the home environment. This lack of 'relevant' experience makes it difficult for the children to think about abstract ideas. Lack of success in learning reduces their motivation and a vicious circle develops leading them towards failure and dropping out of school.

Sometimes the word 'disadvantaged' is used in a pejorative sense giving the impression that the rural environment is inferior. On the other hand there is a point of view that the rural people’s knowledge should be valued and education should be built on that as the foundation. Seshadri (1993) talks of "shedding aside the patronising attitude towards the disadvantaged [and] ... capitalising on the strengths of these classes". However the fact remains that many people consider the knowledge imparted in school as 'superior' and representing a 'superior' culture. This fact also has to be reckoned with in planning.

The School Environment focuses curriculum and pedagogy in addition to the physical infrastructure. In the matter of curriculum some educationists believe in the existence of a body of academic knowledge, which although unrelated to the life experience of many people, should be learned by all. Cox and Jones (1983) believe in the need to deliver the same basic skills in the children the world over since the ability to abstract and master the written word leads to the acquisition of tools to exercise power by mastering knowledge that is outside the scope of personal experience. Coombes (1985) suggests that the minimum essential learning needs for rural children should include positive attitude, literacy and numeracy, scientific outlook and functional knowledge for raising a household, earning a living and for civic participation. But unless the learning materials are based on examples and situations which rural children understand, they may not be stimulated to learn. Ekanayake (1990) believes that an irrelevant education breeds discontent and frustration. He suggests that often children who finish primary school seem to be less fit
to be creative members of the community than if they had never been to school. He terms them 'the schooled illiterates.'

Several factors of pedagogy handicap the rural child. Ekanayake points out that teachers themselves determined by socio-economic factors, are unable to comprehend the irrelevance of the content and methods as the main cause of failure, high drop-out rates, non-participation etc. Instead they blame the children, their home background, and the parents for the children’s lack of intellectual progress. Parents often remain outsiders of the school system and students remain passive. Teachers are not aware of the implications of these. Teachers lack skills related to effective use of the rural environment, knowledge of local culture and appropriate attitudes, and the ability to use children’s experiences at home for teaching and learning. The importance of focusing on rurality as a policy is paramount. Teachers in some rural schools are themselves from urban areas and have little understanding of the background of their pupils.

**Community Environment:** In order to relate schooling to the community environment, efforts have been made to integrate ‘community’ or ‘rural people’s’ knowledge into the curriculum. This has been one of the aims of the community school movement. It assumes that school and community knowledge systems are compatible. Since reality is socially constructed, knowledge which represents an interpretation of that reality must be specific to the society in which it develops. The basis of school knowledge must be community knowledge. In order to achieve this, some countries have developed and implemented a ruralised, vocationally oriented, diversified curriculum. Such curricula may be relevant because (1) the curriculum is relevant to the life experience of the people; (2) the learners acquire knowledge, attitudes and skills which will prepare them for life and work in the community from which they come. The vocational orientation can sometimes make the curriculum quite rigid, though with a rural bias. Many of these efforts at community-oriented curricula have failed for
several reasons. Integration of school and community knowledge is beset by an innate conflict between the two knowledge systems (Bacchus, 1982). Sometimes accusations are made of creating a class bias, providing children with skills and attitudes needed to fill pre-destined positions in the community and thus fixing their societal roles. Some agricultural parents view primary education as a means of enabling their children to leave agriculture behind, and to go and work in urban areas where they can earn money. There are some theorists, such as White (1990) who argue that acquisition of literacy and numeracy may be more effective than school agriculture in increasing agricultural production levels; they argue that children should learn ‘about’ agriculture rather than ‘for’ agriculture; the objective should be to promote ‘agricultural literacy’ rather than to produce trained farmers. Hence the community school movements revised their strategies.

**Links between School, Home and Community:** Improved linkages between the school, parents and community and decentralisation of authority are important measures in moving towards a participatory environment required for improving learning. Some countries distribute the responsibility for education among the state, the local community and the family. Some countries give much more power to local authorities with reference to primary education.

Linking the school, home and community is not easy, but there is one common factor – the learner. Child-centred approaches have been advocated for many years, but the innovation that the DfID document (Taylor and Mulhall) has put forth is to draw on this idea and develop it as the child-to-child approach to learning, which in turn will link the three major factors – school, home and community – which often stand apart. The child-to-child approach rests on three basic assumptions:
that primary education becomes more effective if it is linked to things that matter both to children and to their families and communities;

that education in school and education out-of-school should be linked as closely as possible so that learning becomes part of life;

that children have the will, the skill and the motivation to help educated each other and can be trusted to do so.

Child-centred learning approaches place the learner in a central role in the learning process. The learner becomes the core and focus in the entire learning process. This calls for a major innovation at school level. UNESCO (1994) has pointed out: “The school of today must overcome these developmental problems both in terms of relevance to the community and in terms of establishing a curriculum which is both universal and yet specifically tailor-made for a particular situation.” This goal can be achieved only if the links between the school, home and community are strengthened. This ideal situation of linking the learning environments is shown in Figure 2.

Figure 2: Linking the Learning Environments

It will be seen that this Figure 2 given below is the same as Figure 1, except that the links are drawn out in bi-directional arrows from the learner to the three factors, the home (H), school (S) and the community (C). The learner acts as the focal point for this tripartite structure.
It is now possible to reach a definition of contextualisation. John Dewey was one of the earliest to visualise this clearly. He held that children grow into tomorrow as they live today. He could see the education of the child linked by the three 'HSC' elements. More recently, J.W. Bloom (1992) states that children's "personal experiences, emotions, metaphors, interpretative frameworks, and so forth serve to create a complex system of processes that affect the nature of their personal knowledge and how it is constructed." Bloom's argument is that learning involves constructing meanings based on previous knowledge and experience, which can be semantic (formally acquired knowledge), but also episodic knowledge (personal experiences), interpretative frameworks, metaphors, emotions-values-aesthetics, and the products of various mental processes. Metaphors act as comparative mechanisms that link different types of information. Metaphors link observed phenomena with familiar phenomena, thus facilitating the associative-inferential process. White (1988) lists nine basic types of metaphors, the two most common types being those that link actions and those that compare attributes. He also describes the knowledge framework as an interrelated complex of images and other sensory impressions, linguistic forms, kinaesthetic memories, as well as affective features of experiences.
The educational development of a child is seen in this perspective as inseparable from the 'being' which the child has become, brought about through a complex history of social interactions and related to the context in which the child has been raised. As children grow, they continue to construct their own being. Education and experience contribute to this process. This ‘constructivist’ approach is broader than Piaget’s concept of individual cognitive development.

Although everyday out-of-school experience contributes to the knowledge constructed by a child, additional experience must be provided within the school environment which will enable a child to understand complex conceptual learning of skills in science, language mathematics etc. From the above discussion, the following definition emerges: “Contextualisation of learning occurs when the content of the curriculum, and the methods and materials associated with it, are related directly to the experience and environment of the learner.”

From the principle of contextualisation of teaching and learning, several implications for the curriculum. There are different approaches to the curriculum. Some advocate integrated curricula, which are conducive to contextualisation, and provide teachers opportunities to develop the content themselves within certain topic areas. Bacchus (1982) defines integration as "the combination of the several components of an object, organisation or a system into a whole in order to render it entire or complete."

Krough (1990) calls attention to the fact that “most of the learning in our lives is along the lines of an integrated curriculum”. He suggests ways in which integrated learning, which prevails in everyday life, could be incorporated in the school programme.

The teacher can choose a theme, create a topic web which relates and links a range of sub-themes or topics, and then add or subtract activities
as it becomes apparent that there is too much or too little emphasis in some areas. This flexible method of teaching is an extension to natural teaching which takes place outside the school. It can build on a child’s experiences, covering the whole curriculum whilst developing skills in a meaningful context, as opposed to breaking learning down into categories by subject area, which is less natural, more forced, and less interesting or exciting. Through a learning web, academic, social and emotional needs can be met.

Even though school curricula are not topic-based, but organised according to the study of separate disciplines, contextualisation will still allow teachers to relate the content, however rigid, to the local environment. Contextualisation can also help to link ‘school knowledge’ and ‘home knowledge’.

Contextualisation has several implications for pedagogy. The size of the teacher’s exclusive territory will decrease. There will soon be an increase in the amount of children’s input in designing their learning environment. This may prove uncomfortable to parents, teachers and policy makers and even to the pupils till they understand the game. Teachers will have to develop skills in understanding the environment from which children come. In order to develop the necessary links, a lot of special materials will have to be prepared – work cards, work sheets additional pictorial materials, guides etc. Metaphors and analogies should as far as possible be derived actively by the child, based on his or her individual experience.

Agriculture is found to be a convenient occupation to serve as medium for contextualisation in rural schools. The use of agriculture has some special advantages. It provides a local environment with which children are familiar and upon which the teacher and children can draw for information and materials (Ravi and Rao, 1994).

Though the majority of primary school curricula are subject-based, the use of agriculture can serve as a contextualising medium. As Riedmiller and Mades (1991) state:
The handling of regular school subjects is localized, by relating the topics of the separate subject syllabi to the local environment; in this way, the subject is the point of origin; the environment then functions as a teaching aid to illustrate academic themes and to serve as a practical ground for applying the acquired knowledge and skills.

Figure 3 illustrates how agriculture can be used as a basis for contextualised teaching and learning. The figure shows how topics related to the different subject areas can be integrated with agriculture.

**Figure 3: Agriculture as a basis for contextualised teaching and learning.**

Primary school children in developing countries find science and mathematics difficult because the language of instruction is not familiar to them. In agriculture, scientific operations are expressed in the mother tongue of the child and hence children are able to follow the processes and concepts. According to Vygotsky (1978) children's language turns inward to become the basis of inner speech and so of thought itself. When the local language is the medium this is not a problem. When other languages are the medium there can be complications which are analysed by Strevens (1976). There can be difficulties arising from the need to develop new concepts not in the native language. Strevens thinks that
agriculture can help to achieve a smooth transition from one stage to another since new concepts will be incorporated in a familiar topic. Cleghorn et al. (1989) have cited evidences to show that the use of vernacular languages and terms can help to explain abstract concepts since children pay more attention and understand better.

Integration of science topics have been attempted by several workers including those working on the Nuffield science projects. The starting point in integrated approach is to identify issues that are essential for development, including food and agriculture and to develop science teaching on this basis. While teaching science with agriculture as contextualising medium two advantages are seen: (1) it can help children to overcome the problems associated with words, meanings and contexts derived from unfamiliar environments and cultures; (2) agriculture provides many opportunities for problem-solving activities.

Agriculture can play a role in contextualising mathematics just as it can for science since it allows children to conceptualise mathematical principles related to experience. The laying of the plot, planting of seedlings in rows etc. provide many natural situations for integrated teaching. Relation with food, nutrition and health comes most naturally. There are many biology-related social issues which bring natural contextualisation with social studies. The impact of changes in population rates on agricultural production system and similar issues may be natural at the upper primary level.

A series of studies relating to several countries have emerged from their exercise, some of which are presented in Chapter III. A principle-oriented analysis of the major contributions has been presented here.

The DfID studies explore the capacity of a local community occupation such as agriculture to act as a familiar vehicle for the development of
young rural learners' literacy, numeracy, and other life skills which are perceived as necessary for a fruitful and productive life. Although universal primary education has been set out as a goal in most countries of the world, several problems such as low participation, high drop-out rates and under-education of pupils have been experienced. This is due to constraints such as inadequacy of necessary inputs, lack of facilitating conditions and an absence of the will to act.

Different approach to curriculum development have been tried such as academic and community-based models and integrated and topic based models. It is expected that contextualisation of teaching and learning can strengthen the links between the learning environments of school, home and community, which can be achieved through building on pupils' out-of-school experience and in-school experience.

It is not desirable to sharply distinguish curricula as urban or rural, but the curricula should be flexible, allowing teachers to develop their own material which reflects the local environment, whether urban or rural. This approach emphasises the process of learning, rather than purely the content. The DfID document (p.2) recommends that "A flexible method of teaching is an extension to natural teaching which takes place outside the school. It can build on a child's experiences covering the whole curriculum whilst developing skills in a meaningful context, as opposed to breaking learning down into categorising by subject area which is less natural, more forced, and less interesting or exciting."

As a result of this approach, the size of the teacher's exclusive territory decreases and the input of children in designing their environment increases. It allows the curriculum to be made relevant to the experience of the learners, whilst still allowing the possibility for the development of knowledge attitudes and skills identified on a national basis.
Successful implementation of the curriculum depends on many factors, including those related to teaching practice and support, resources, community-school relations, examination systems, and government policy and support. Curriculum reform is not enough on its own; it must be accompanied by complementary social and economic reforms.

Turner (1987) analyses the ways in which many primary school topics related to nutrition are frequently incorporated within a scheme which forms a part of an integrated programme of work and which includes aspects of health education and agriculture.

A study of staple food, for example rice, cassava or bread could be based on a visit to a local farm, market or the school kitchen. Work in Science and Mathematics can be extended by germinating rice grains and measuring the growth of seedlings. Food can be integrated into studies of geography and religious ceremonies, in order to better understand social and economic factors. Children can then learn more about the complex interactions of governing attitudes to food, and hence learn about agriculture of the same time. Activities related to school gardens or farms can also provide a rich source of low-cost, easily available classroom material.

Turner and Ingle (1985) report the variety and range of approaches utilized in teaching nutrition in many countries, particularly in primary schools. Drama, poetry, music, art were included in the subject areas in which teaching about food and nutrition featured in addition to Mathematics, Geography, History, Science and Technology, Physical Education and Home Science (UNESCO, 1983). Their approach was based on the use of the local environment as a basis for activities which encourages children to be curious about their surroundings, to observe, explain, experiment, and communicate their ideas and findings.
Examples of integrated approach to curriculum development have been carried out in Tanzania, Sri Lanka, Malaysia, Uganda, Cameroon, Jordan, Papua New Guinea, Brazil, Kenya, Columbia, Ethiopia, Zambia, Guatemala and India. Tanzania is given priority in the order of presentation here because the curriculum reforms it was also modelled on the Indian socialist planning under Nehru. Being a small country, the educational applications could be introduced with greater focus than in India. But there too reactionary forces gained strength gradually to block progressive reforms. In the present summary, besides Taylor and Mulhall, DfID (1997), Kent and Mushi (1995) (Overseas Development Administration – later DfID - serial 18) has also been freely used. In the country cases presented below, primary education reform besides the contextualisation around agriculture and related occupations are also discussed. In the case of Tanzania alone the social and political factors are discussed at some length because of the close relation to the socialist ideology of Nehru’s time. The general principles that stand out are that there has been dissatisfaction about the state of primary education. Attempts at reform, usually focusing the community needs and contexts, pedagogic reform such as learner-centred pedagogy are attempted. In many cases there is reversal of policy. It does not always mean that the reform has been a failure. The complexity of contextual, learner-centred pedagogy, political factors, bureaucratic climate factors and a host of other factors can be seen to operate in such reforms. It can also be the case that the very success of a contextualisation reform may trigger criticism simply because the first phase has been successful and new problems have come into focus. Where communities are very small, other collateral factors such as the need for opening single-teacher schools or centres get highlighted, along with the principles of multi-grade teaching skills. Sometimes these operate along with or separately from contextualised teaching.
The socialist government of Tanzania started several approaches towards improving education through integrated and life-related approaches. It attempted to make the curriculum less academic and more functional. It also attempted to give political support for the approaches. The Arush Declaration (1967) signalled the end of the capitalist, free market economy and the beginning of a programme of nationalisation and centralised decision-making to develop the rural areas at the expense of the industrial developments situated in the towns. The government embarked on a policy of African Socialism that included the nationalisation of agriculture, industry and commerce and educational institutions. Education and training were considered to be two important agents of change. The government introduced measures to provide universal primary education, adult and vocational education in rural and urban areas. A plethora of interventionist policies were introduced.

Socialism in Tanzania was based on the Indian model of economic development as it was increasingly based on public control through interventionist policies. The outcome was that the state assumed an ever-increasing influence on economic policy, a concept commonly referred to as wider Keynesianism [Bersteker and Carr-Hill 1990]. But the state overestimates its capability to manage and as a consequence, over-stretches itself by thinly spreading its resources over an increasing number of activities, projects and programmes (Moshi and Maenda 1994).

During the early 1980's government success in raising literacy levels among adults and children, in reducing infant mortality rates and improvements in health care that had increased life expectancy were not matched by economic improvements. This situation resulted in ideological conflict between the government and the people. Educational success led to an increase in expectations that could not be fulfilled.
Contextualisation as a means of improving learning is close to Nyerere's original concept underlying Education for Self Reliance (ESR). It emphasised that primary schooling was a cycle of learning, rather than a selection mechanism for advancement to secondary education. Primary education must be a preparation for the life which the majority of children will lead similarly the function of secondary schools was to prepare people for life and service in the villages and rural areas of this country.

Originally thirteen subjects were introduced in primary curriculum, which were reduced to seven in 1992. The revised curriculum was intended to reduce illiteracy rates among the school population by emphasising the 3 R's, rather than attempting community-related studies. The science curriculum (Standards IV to VIII) was overloaded, highly academic and was intended to prepare pupils for secondary education. The syllabus was devoid of practical examples denoting everyday application. This had not always been the case, as science education pre- and post-independence periods tended to stress the applied nature of the subject in terms of agriculture and health. Other initiatives that attempted to introduce an enquiring-oriented pedagogy were piloted. For example, the African Primary Science programme was attempted in the 1960's. In 1980's attempts to reintroduce Agricultural Science also failed. In both instances political reasons were cited as the principal excuse for their demise.

To achieve Tanzanisation was one of the principal objectives of the first Five Year Development Plan (FYDP). It was hoped to raise the literacy levels of the rural peasant and thus to improve agricultural production. The period of the second FYDP sought to reinforce rural development and stem the increasing tide of urban migration. Consideration was given to redefining the function of primary schools as 'Community Education Centres' with taking a dual role as provider of primary education for children and concurrent education for out-of-school youths and adults (integrating formal and nonformal education at the village level). However,
this policy was never fully implemented as the pilot schemes proved to be inoperable. (Kwamsisi Community School Project - Korogwe)

There were two conflicting ideological strategies, one biased towards production by the masses and the other to mass production. There was some reversal of policy. Besides the conflicting demands in dealing with the huge problem in multiple dimensions, a number of incidental problems were met in moving from formal academic curriculum to integrated activity-oriented and productive curriculum. When a whole state attempts it with teachers of varying calibre there are bound to be shortfalls. Added to this political problem and bureaucratic deficiencies also play an important role. In spite of it Tanzania had made several contributions from which the investigator could draw useful lessons.

A very large gap exists in Tanzania between the plans made by centralised curriculum developers and educational policy makers on the one hand and the reality of daily life in schools on the other. Some of the problems that exist are dilapidated buildings and lack of equipment.

The Tanzanian study indicates that many of the teachers are disillusioned with their working conditions and the lack of opportunity for professional development. Constant curriculum changes, an inflexible examination system, few secondary school places and an over-reliance on books and materials which can not be obtained are strangling the process of teaching and learning.

Taylor and Mulhall note that in rural Tanzanian primary schools agriculture is used as a means of contextualising learning. Here more than 95% of pupils come from an agricultural background. This study shows the agriculture varies tremendously, from region to region, and income of farmers may also vary, as does the level of their education. There are implications for the strategies teacher must adopt in order to relate a
child's agriculture experience to the content of the curriculum. It is essential to take into account their diversity of experience as well as to be sensitive to the nature of the child's home environment.

Contextualisation as a means of improving learning is close to the concept of education for self-reliance. Parents appreciate the idea of linking schooling to the home environment. Overloading of teachers and pupils resulting in exhaustion and boredom and the complexity and irrelevance and the curriculum are major obstacles to learning and performance. The obstacles are sometimes increased by school inspectors, who, on their rare visits to schools, are focussing on achievement of educational objectives through transmission of content rather than through an integrated learning process.

It is noted that a gulf between community and school priorities will have a deleterious effect on the effectiveness of teaching and learning practices. Appropriate teaching and learning strategies which link the home and school environment may help to bridge this gulf. But in order to do this, teachers require training and support, and pupils and parents require information and reassurance that those aspects of their culture which they value are not threatened.

The background for contextualisation in other countries is stated very briefly. Sri Lanka's educational system has been developed over many centuries. It offers at present free education for all from year 1 to university level. Concerted efforts at improving education have yielded results. High literacy rates (88%) and low drop out rates (4%) have been achieved. However, the problem of remoteness and difficulty of access to rural primary schools remains. Often teachers working in rural schools view their pupils as being ignorant, because they come from low level socio-economic groups. These pupils, most of whom come from famine
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backgrounds, lead harsh lives; they need to contribute to the family income too.

At present the education system is very examination-oriented. Many children attending even class 1 and 2 attend private lessons to prepare for national scholarship examination in year 5. Many interviewees expressed that this puts too much pressure on the children and should be eliminated. Slow-learners, the disadvantaged and rural children tend to be neglected because they do not stand much chance of success in the competitive examination. Though Sri Lanka has recently revised the primary school curriculum in an effort to move towards pupil-centred approach to learning, teaching is still teacher-centred. This is primarily due to the pressure on teachers to cover the curriculum and prepare pupils for the national year 5 scholarship examination.

Sri Lanka's educational policy does not specifically recommend contextualising teaching and learning. They are planning for life-long learning with activity-based curricula and self-learning activities, but these are not being practised. However, there is a pilot project with an external donor, following the theory and practice of contextualisation of learning through the use of an agriculture-plot and nutrition programme. Since agriculture is considered to be a poor and uneducated person's livelihood, contextualising learning through agriculture is misunderstood as agriculture lessons which are unpopular in some countries.

The Regional Centre for Educational Innovation and Technology (INNOTECH) based in Quezon City in the Philippines, devised in the early 1970s, a radical approach to rural education. It proposed to replace schools, text books, teachers and grades with learning centres, self instructional materials, peer, tutor and community support and instructors responsible for the management of learning among groups as large as 150-200 students. Hence it was known as 'no more schools' concept.
Later it became known as Instructional Management by Parents, Community and Teachers (IMPACT). The innovation began in the Philippines and Indonesia, spreading subsequently to Malasia (INSPIRE), Jamaica (PRIMER), Liberia (IEL) and Bangladesh (IMPACT).

Cumming (1986) presents the rationale for the "no more schools" concept and the components of a new system for the delivery of education in the Philippines and in the broader south-east Asian region. Referring to the larger environment Cumming writes:

The inflexibility of conventional school schedules, which causes children to miss lessons, fall behind, and eventually dropout is another reason for low educational attainment. Thus to improve rural education, a new delivery system needs to be devised with a more flexible schedule and lower student costs. Since teachers make up 80 to 90% of unit costs in conventional schools, such costs can be reduced by increasing the student-teacher ratio and supplementing teacher supervision with assistance from students, parents and community resources. Self instruction, relying on programmed instructional materials, can be another means to reduce costs and moreover, enable greater flexibility in scheduling individual learning.

The IMPACT system is open in character. All Children of primary school age can effectively follow the curriculum from the start until they finish. School dropouts do not stop learning. They can go on studying with these materials till they finish and gain the elementary school certificate. Learning materials are based on the approved curriculum of the school system. However, the students of IMPACT schools are still governed by the requirements of the system such as the successful passing of official examinations. Learning takes place anywhere, not only in the class room. The attitude that dropouts inevitably will cease to learn, or that graduation terminates the learning process is contrary to this principle and therefore, must be changed. The school building is merely the centre of learning from where guidance, material and resources may be delivered. Learning posts are established in the countryside where the dropouts and adults may have easy access.
Lubben et al (1995) report the valuable work carried out on the in-service training of secondary school teachers in Swaziland to enable them to develop and produce contextualised Science materials. They conclude that through contextualised teaching and learning, children can develop their capacity for meta-cognition, and hence reflect critically on their own practices and experience. This may have a positive impact in the long run on agricultural innovation, production and rural development.

The curriculum development in Sarawak (Malaysia) is interesting from the contextualisation point of view (Seymour, 1974). Sarawak is primarily an agricultural state. In order to move away from the traditional production-oriented approach to agricultural education, a “new syllabus” was introduced. This integrated the subject matter of the lessons during the first two years, in order to “reinforce the learning of one subject by the learning of another”. The syllabus indicated approaches and techniques to make the subjects more relevant to the experience of the student. While the curriculum was not designed for rural schools, teachers in training were taught how to use the agricultural and rural experiences of their students to convey scientific laws and processes more clearly. Regarding the agricultural emphasis, teachers seemed to pay lip-service to this, because in their eyes children came to school to become literate and not to learn what they already know and try to escape from.

Different groups and different perceptions of the purpose of primary education prevail. The administrators emphasised national development; the teachers wanted to prepare some students for secondary education; the parents wanted to increase upward social mobility. Different interpretations of educational goals and content among different groups would explain the discrepancy between curricular objectives and instructional activities. This has implications for the effectiveness of contextualisation projects.
The Namutamba 'Basic Education Integrated into Rural Development' (BEIRD) curriculum development project is reported to have infused agriculture and appropriate technology into the curricula of teacher colleges and primary schools in Uganda (Massey, 1987, cited in DfID, 1997). The main project was conducted in 1971 to 1979. It was being revitalised in 1986 in order to address five basic problems: lack of life-adaptive knowledge and skills among rural primary school graduates; a BEIRD organisational structure at nation, district and community level; a curriculum that integrates practical and academic instruction; a BEIRD preservice/inservice system and materials; and adequate primary school teaching materials and methods.

In the Francophone provinces of Cameroon early efforts to increase the relevance of the curriculum seem to have failed, whereas in Anglophone provinces a certain type of community orientation has for decades been an established part of the primary school curriculum and also of school-community relations. In addition to using locally relevant experience, schools have also forged and developed strong links with their local communities by supplying various services, for example agricultural advice to farmers. (Bude, 1985)

Originally agriculture was introduced as a separate subject in the primary schools of Jordan. In 1978 agriculture and production-oriented subjects disappeared from the school curriculum. Later the related topics were removed from the science syllabus too. Later the realisation occurred that the objectives of science education can be attained only by relating science to real/concrete situations involving particularly the interaction of human beings and the environment. Agriculture thus provides an ideal area from which pupils can acquire an understanding of science concepts and develop scientific skills and attitudes. A framework has been developed to integrate agricultural education as a major element of the
science syllabus of the Jordanian elementary school system. (Badran, Baydoun and Subbarin, 1987)

"Village-oriented topics" were introduced in the schools of Papua New Guinea primary schools. Since most students do not proceed to secondary education, schools used agricultural-related topics in order to provide students with skills which will assist in direct material improvement of village-life after their graduation. It was suggested that education could be enhanced if there was a concentration on the key topics which are relevant to the agro-ecological conditions in the appropriate region. Such programmes seem to indicate that it is possible to improve conditions in the villages and thus encourage young people who have acquired relevant skills to remain there after completing school.

The Northeast Basic Education Project (EDURURAL) in Brazil was set up in 1980 as an integrated educational programme. It targeted the least developed areas, and besides other things, assisted in the development of curricula, especially designed to the poor rural environment, where drop-out, repetition and non-attendance rates were very high. The EDURURAL project succeeded in the final two years of evaluation in improving delivery of the desired inputs, at least in two of the three states, but the change was only modest when comparing the inputs of the rural areas with those of the urban areas. The programme contributed in setting up new schools and in expanding others (Harbison and Hanushek (1992).

The Kisumu School Improvement Project (Kenya) was launched in 1990 in response to increasing doubts in the 1980s over the relevance of the school curriculum, imbalances between supply and demand of educated and manpower, widening gaps between urban and rural standards and participation and a concern about the education of girls. Development was expected to come from the "bottom" and to be creative; the strategies and teaching styles were to be appropriate and to stem from the teachers and
the identified needs of the children; they were to be classroom based; they were also to be holistic, with learning activities covering the whole range of children's emotional, physical and cognitive needs. Some of these activities were agriculture-based. Children's attitude and motivation improved and led to higher attendance rates and improved self-confidence. In projects or in work in which integrated subject topics, there was apparently a lack of involvement being explained by the rigidity of the Kenyan curriculum (Black et al, 1993).

An interesting case of the development of primary school education in Columbia was the Unitary School Programmes (1960s) conceived by UNESCO to meet the serious problems in the country. Academic schedules were rigid and did not consider rural pupil's needs. In the reformed plan, one teacher was set apart in each school to help children to teach themselves. Children were allowed to advance at their own pace. Teaching materials were designed in order to help the teacher work with many groups of students. The key elements were instructional cards or subject guides, which gave more autonomy in learning to the pupil. Children could then leave for agricultural work and then come back and work at their own pace. But the programme failed to address the fundamental concurrent changes needed in the national curriculum, in teacher training methods, and in the local supervision of the system, for the programme to be a success. [Colclough and Lewin, (1993), and Colbert et al (1993)].

Escuela Nueva "(The new schools)" then began in 1975, building upon the experience with unitary schools. The new curriculum allowed the possibility of teachers to make their own adjustments in line with local circumstances. This provided practical problem-solving experience. The criterion for advancement was the ability to apply knowledge within the community. Links between the community and the schools was
emphasized, and the use of local materials was advocated. Teachers were
given training and material incentives.

The Ethiopian Institute for Curriculum Development and Research
(Institute of Curriculum Development and Research, Bonn, 1993) describes the development and trial of the 'general polytechnic curriculum'
in 70 pilot primary schools. The environment and experience of the pupils
is supposed to be integrated into all subject areas. The use of local
agricultural examples helps to facilitate learning.

Chelu and Mbulwe (1994) describe the Self-Help Action Plan for Education
in Zambia (SHAPE). One of the main aims of the programme is to improve
the quality and relevance of education. The programme has tried to
improve and strengthen certain types of learning in order to achieve quality
and relevance.

Goelenboth (1987) describes village oriented topics in Papua Guinea
primary schools. Most students do not proceed to secondary education.
So schools use agriculture-related topics in order to provide students with
skills which will assist in direct material improvement of village life after
their graduation. It was proposed that education could be enhanced if
there was a concentration on the key topics which are relevant to the agro-
ecological conditions in the appropriate region. Such programmes appear
to have shown that it is possible to improve conditions in the villages and
thus encourage young people who have acquired relevant skills to remain
there after completing school.

In several small rural communities in aboriginal communities, in tea
plantations, and other settings special varieties of multi-grade teaching are
the only practical means of tackling the problem. Little's (1996) review of
research and practice in multi-grade teaching reports several studies
which, read in terms of the special client groups served, can yield valuable
information about community-oriented and environment-oriented curriculum. The experience from several developing countries are very interesting.

Tovar (1989) has analysed intensely the indigenous primary schools in Peru. 39% of primary schools in Peru are one-teacher schools. They are located in rural areas, predominantly in the Andean and Amazon regions. Besides their rural location, a number of other factors influence the multi-grade school. These include among others, one- and two-teacher schools located in the most remote rural areas. They are considered very low-prestige schools and are allocated the lowest qualified teachers, cultural and linguistic diversity. In both the Amazon and Andean regions, there is a large indigenous rural population, there is also high cultural and linguistic diversity. Consequently, multi-grade teachers are faced with the task of teaching a mono-cultural and monolingual Spanish curriculum to indigenous children, who, in many cases, are completely monolingual and monocultural. The cultural and linguistic backgrounds of the teachers are often distinct from those of their students.

The AIDESEP/ISPL programme developed by Association for the Development of the Instituto Superior Pedagogical Peruvian Rainforest and de Loreto has been designed by and for indigenous Amazon teachers working in communities with the same linguistic and ethnic background. An important part of the training course is the production of a new primary curriculum by the trainee designed to suit the indigenous communities and their particular situation. This includes a new pedagogical approach to multi-grade teaching, methodology and classroom practice. The trainee will carry out teaching practice with on-site support and supervision from a local team of trainers, comprising educators, anthropologists, linguists and community members. These programmes emphasize the importance of the college coming to trainee rather than an overwhelming emphasis on in-college work.
The new curricula on the AIDESEP/ISLP course focus on problems and issues which are significant for the indigenous community and avoid fragmenting the indigenous reality and view of the world by dividing knowledge into discrete subjects in a manner alien to the society.

Tovar also presents a negative example from a primary school in Arakmbut community of San Jose attempting multi-grade teaching in an indigenous areas. But this was not a success because the teachers continued to organise the work as if they were teaching mono-grade, though working within the multi-grade and unitary frame work.

The Self-Help Action Plan for Education in Zambia (SHAPE) has the improvement of the quality and relevance of education as one of its main aims. The programme has tried to improve and strengthen certain types of learning in order to achieve and relevance. These are: relating science, mathematics and languages more to the local environment; developing a wider variety of skills (literacy, numeracy, practical problem-solving skills etc); developing individual potentiality (initiative, responsibility, creativity); developing positive attitudes towards work, local cultural tradition, preservation of natural resources; and developing a healthy balance of learning and working to suit individual interests and future needs (Chelu and Mbulwe (1994)

Guatemala presents the interesting case of curriculum change in the National System of Human Resources Improvement and Curriculum Adaptation (SIMAC) at a local level which involves the establishment of a close relationship between the school and the world around. Teachers, parents, pupils and other members of the community have the right to participate critically and constructing in developing and carrying out effective and relevant learning experiences. SIMAC has been designed to shift the emphasis from a teaching-based curriculum towards a learning-
based curriculum and from a content-based curriculum to a process-based curriculum. This integrates academic areas, methods and procedures within the learning process and is closely linked to the needs, interests and problems of the pupil and the community. It relates school life to the world that surrounds the child and teaches the child how to share and live with other people in a responsible, creative and critical way. Pedagogical practices assume that learning starts from the reality which surrounds the child (family and community) (Little et al. 1994).

Three cases from India are also reported in the DfID (1997) Report: The Bombay School Improvement Programme which began in June, 1989, aimed to find concrete ways of addressing the problem of children’s learning difficulties, to reduce the drop-out rate and improve community contacts in order to enlist the understanding, support and interest of the community. It was hoped that this would encourage children’s motivation to learn. The overall aim was to foster child-centred learning, envisaging a move away from traditional text books towards curriculum materials developed by the teachers. Much of the advantage of such a move is predicted on the assumption of a rich resource alternatives for pupils both in the school and in the home. Some teachers thought that this meant a move from textbooks to non-textbooks. In fact it was intended that this child-centred teaching method could be introduced without replacing traditional text books. Moreover, parents were concerned that their children would not be able to learn in more traditional environments in the future if new methods of teaching were introduced in the primary school. The Main difference in the teaching style was the greater emphasis on groups or individual. The project has broadened the opportunities to develop higher order skills as well as personal and social skills, and the children seem to have developed these to a greater extend. (Black et al, 1993)
The Comprehensive Access to Primary Education (CAPE) project, launched in 1979 and implemented in 17 states in 1987-88, linked with the Primary Education Curriculum Renewal (PECR) programme. PECR has "developed relevant local specific learning experiences through decentralised curriculum planning. The learning experiences are drawn from the child's environment and the curriculum is directed to the attainment of certain competencies by the child. (Seshadri, 1993)

The UNESCO project, also note "Teaching of Science and Technology in Rural Areas" developed at the Regional College of Education, Mysore, which is "based on the rural child's knowledge of traditional Science and technology in the socio-cultural context of rural areas of India. Seshadri stresses the importance of building on the strengths of rural children, rather than maintaining a "patronising" attitude towards them because they are thought of as disadvantaged."