CHAPTER II

2.0 SURVEY OF RELATED LITERATURE

2.1 INTERNATIONAL SCENARIO

2.1.1 Adult Education
2.1.2 Environmental Education
2.1.3 Educational Technology
    (Programme Learning)
2.1.4 Curriculum Development
    (Development of Literature)

2.2 NATIONAL SCENARIO

2.2.1 Adult Education
2.2.2 Environmental Education
2.2.3 Educational Technology
    (Programme Learning)
2.2.4 Curriculum Development
    (Development of Literature)
CHAPTER - II

2.1 SURVEY OF RELATED LITERATURE

Literature is that mirror which reflects the past views and presents the future prospective. It is imprudent and wasteful to proceed any study without knowing what has gone before. The previous literature gives a guideline and develops insight into the problem. So an essential aspect of an investigation is the review of the related literature that is a general retrospective survey of previous writings pertaining to one's problem. In order to develop deep insight and to evaluate the methodological practices emerging out of researches, the researcher made a survey of the available literature and reviewed the studies already done in the fields of adult education, environmental education, educational technology and curriculum development.

Detailed description of International studies as well as National studies are as follows :-

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2.1.1 Adult Education
2.1.2 Environmental Education
2.1.3 Educational Technology
   (Programme Learning)

2.1.4 Curriculum Development
   (Development of Literature)

2.2.0 NATIONAL SCENARIO

2.2.1 Adult Education

2.2.2 Environmental Education

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   (Programme Learning)

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   (Development of Literature)

2.1.0 INTERNATIONAL SCENARIO

2.1.1 Adult Education:

In the study of Littefield S.P. (1984), Adult runners were chosen as a study population as they shared many structural similarities with adult self-directed learners. Interviews with 45 adult runners produced accounts indicating that they formed intentions only after a thorough testing of the environment and evaluation of information sources. A descriptive model which included cybernetic and cognitive elements was offered to depict respondents' accounts. An
An evolutionary approach to intentional structures was suggested and both theoretical and practical implications were discussed. Future research into self-directed learning must examine the conditions under which self-direction evolved rather than examine mere instances of such behaviour.

Arias - Godínez, B. (1984), performed a study on non-formal education through radio and the social reproduction, transformation of a rural community, in Veracruz, Mexico. The study sought to investigate:

(i) How non-formal education programmes are socially constructed, and

(ii) The extent to which non-formal education programmes among illiterate adults in rural areas function to reproduce or transform existing inequalities in wealth and power.

The language of dilemmas (Berlak and Berlak, 1981, 1983) was used to clarify the relationship of the data to social, economic, political and educational issues, and the possibilities for transformation or reproduction in Teocelo and the nearby communities. Ethnographic data also indicated that literacy was not a pre-requisite for development. Changes at the individual level were observed to be dialectically related to efforts to transform society.
Mayfield, C.B. (1984) in his study took a sample of 148 licensees out of a total of 296 who had taken at least one continuing educational seminar at the college between October 1979 and January 1984 completed the inquiry form, for a 50 percent response rate. On the basis of the conclusions, it was recommended that:

(1) The real estate continuing education programme at Los Angeles Southwest College be continued and improved.

(2) Changes and modifications be introduced to strengthen the programme.

(3) Separate course be developed for salespersons and for brokers.

Tyler, E.C. (1984), conducted a study with the problem of selecting educational experiences which produce desired results. Open-ended, taped interviews were conducted with each subject. Findings indicated that incoming students made rationale decisions about how to link learning and strategy with goals and experience for the purpose of producing consequences related to their career development goals. Recommendations were aimed at increasing the rate and level of participation in adult education.
The purpose of the study done by Alexander, M.A.C. (1984) was to examine the effects of favourable and unfavourable attitudes toward, and the effect of prior knowledge about, a subject in relation to schemata formation in adults. Four of the Kenyon Scales were used to assess attitude towards physical activity, and a revised form of Snell's Soccer Achievement Test was used to determine prior knowledge about the game of Soccer. An analysis of the data led the investigator to conclude that a positive attitude towards physical activity and prior knowledge about the game of soccer facilitated schemata formation regarding speedball among subjects.

Anderson, R.D. (1984), identified the needs assessment method used by Catholic adult educators. Surveys, including 14 needs assessment methods identified in the literature and community service and message programmes from 59 Dioceses, were mailed to 105 Diocesan offices. Responses indicated methods used, method's usefulness, and use by programme era. 81 surveys (7%) were returned. Interview of target population (mean ranking 3.2) was perceived as most useful. Conclusions were:

(1) Review type methods were mostly used.
(2) Inquiry type methods were most useful.
(3) Programme planners used review type methods to conserve resources but used inquiry methods to identify instructional needs.
(4) Directors rely heavily on personal feelings and observations.

In another attempt, Frederick, J.J. (1984), identified the trends in and development of adult education programmes in a nation-wide perspective. Data were gathered from a questionnaire that was sent to 368 museums with education departments. The following information was examined from each museum surveyed: type of programme, instructor, fees, location of programme, and the audience. The data indicated a high incidence of adult programming in museums, changes in the image of the museum towards adult learners, and a new awareness of the museum educator towards adult learner audiences. The results of this study showed that the efforts of museums to teach and inform adult learner audiences had developed constantly in magnitude and variety.

A case study on adult education for international development, studied by Armour, M. (1984), qualitative research methods were used. Data gathered through participant observation included documentation and interviews with staff, course lectures, participants evaluation of the project and research field notes completed the data which were examined to identify, describe, and analyse project decisions. Some of the study conclusions were that project recipients should participate in major project decision making. Project recipients cultures
should form the basis of adult education projects for development. The skills of generalist educators as facilitators, process consultant, and administrators were important to the success of projects with highly technical content as well as those of a less technical nature.

The study done by Wilkinson, B. (1987), evaluated those courses in an endeavour to identify: (1) who the beneficiaries of Pathway were and what was gained from it. (2) the relevance of Pathway to the future for (a) people who experienced the course, and the people who were unemployed now or likely to become so, and (b) to adult education. It was concluded that there would continue to be people with problems similar to those encountered by pathway students, that there could be a role for adult education in this context, that the perennial problems of funding and recruitment would have to be considered, and that offering courses did not ensure that those who might most benefit would be attended.

Lakpah, M.U. (1987), focussed the adequacies as well as the inadequacies of the Lagos State Government's provisions for adult education with special reference to functional literacy, continuing and remedial education and vocational training. It was aimed at acquainting the planners and executors of adult education in the State with the magnitude of the assignment appointed to them at State level in the execution of adult education as contained in the
'National Policy on education' Section 7, paragraph 52(a-e) and as suggested by the 'implementation committee for the National Policy on Education' which were included in the introduction of the study.

Hake, B.J. (1987), investigated the development of adult education in the Netherlands. This investigation was intended as a study of the relationships between social movements and the development of adult education. The research was focussed upon the historical relationship between the patriot and democratic movements in the Netherlands and the development of adult education in the period from 1780 - 1813. The research had three closely related objectives. It was intended firstly to explore the broad spectrum of the social, political, cultural and religious activities of adults which were characterized by deliberate, systematic and sustained efforts to communicate and learn knowledge, skills and sensitivities. Secondly, the research was intended to establish the historical relationships between these diverse manifestations of adult education and the major social movements in the period from 1780 to 1813. It was also intended, thirdly, to provide an analysis of the relationships between social movements and the development of adult education in terms of the broader pattern of political change in the Netherlands.

Handron, D.S. (1988), analysed the concept of media literacy and developed a source book for adult educators which
contained techniques to promote critically reflective viewing of public affairs television. Findings evolving from the research included learners exhibiting:

(i) an indiscriminate criticism and distrust of the media.

(ii) an inclination to use the media solely for entertainment and

(iii) a tendency to limit their attentions to human interest material. Critique was provided for each of the media literacy techniques which resulted in restructuring them, and in developing additional criteria and learning tasks that could be used to stimulate critical discussions about public affairs programmes.

Jenkins, J.A. (1988), in his study analysed the concepts of adult education within a federal agency to identify the extent to which adult education principles were evident, to describe knowledge of, attitudes toward, and experiences with adult education principles and issues surrounding the implementation of adult education principles and practices that occurred in this training programmes. The study found that key personnel were aware of the principles and practices of adult education and incorporated these to varying degrees into the training programme certain of the principles, namely
respect for the learner, collaboration, experience and a participative environment were evident in all analytical categories.

Moore, J.R. (1988), performed a case study on principles of andragogy in collegiate. The purpose of this study was to examine the faculty development program of a university department in order to (1) identify the extent to which the principles and practices of adult education were applied within the faculty development effort (2) to describe the knowledge of, attitudes toward, and experience with the principles and practices of adult education. (3) describe the problems and issues surrounding the implementation of adult education principles and practices that occurred in the particular setting, and (4) make recommendations concerning the use of principles and practices of andragogy within the context of higher education faculty development. Findings indicated that the principles of learning for action and problem posing solving were not used at all. Principles used somewhat were self-direction and empowerment, use of learners' experience, and critical reflective thinking. Principles of climate of self-respect, collaborative mode, and participative environment were used often. According to the findings of the study, however, the collegiate workplace is not aware of the use of principles and practices, most instances of use were accidental. Further, findings concurred with the literature that such factors as
the facilitation, methods of instruction and adults' commitments could facilitate or impede learning. The literature and findings of the study indicated that the collegiate workplace could be enhanced if concepts of adult-education were more fully implemented, recommendations were based on these findings.

Blackwood, C.C. (1988), finds empirical evidence to the argument that adult learning theory had a definite and specific place on the general learning theory continuum. This study sought to clarify the role of self-directedness as a personality construct in adult education. In addition, it sought to solidify the role of hemisphericity as an important concept of adult learning. The study found positive correlation between high degrees of self-directedness and left hemisphericity. It also found correlations between high scores in self-directedness and age, and left hemisphericity and age. It was concluded that this study supports the notion that adult learning theory should be considered separately from childhood learning theory.

Pena, M.M. (1988), sought to define the potential contribution adult education could make to technological self-reliance in the particular case of Columbia. Educational issues relevant to technological self-reliance, including the role of adult education in linking research and production through
technical extension services. It was found that resulting mismatches between applied research and social technology needs were interpreted as the expression of the prevailing pattern of social distribution of knowledge. This pattern could be challenged by innovative adult education activities aimed at democratizing access to knowledge and raising the scientific culture of the entire population. Both conditions were seen as essential to the consolidation of national efforts towards technological self-reliance.

Hocklander, N.C. (1988), divided his study into two studies, with study I seeking to identify which program information items were of most importance to the prospective participant. The results indicated the program information items of greatest importance to prospective program participants were "general course content (purpose)", "Specific course content (objectives)", and "relevance of content to work situations". Differential relationships between characteristics of respondents and type of programme information were identified and discussed study II attempted, therefore, to ascertain what form, ranging on a continuum from practical to theoretical, a program/brochure title should assume to appeal to the education preferences of health care administrators. The results suggested prospective program participants (health care administrators) found program titles with a "practical" content emphasis most appealing. Programme titles with a theoretical content emphasis were ranked as least appealing. Differential relationships
between characteristic of respondents and program titles were identified and discussed.

Peterson, N.L. (1988), examined the social context of an adult basic education (ABE) classroom in an adult learning centre. The aim was to articulate and apply a theory of social action and social structure. The conclusion was that, while adult basic education (ABE) classroom discourses and practices helped to reproduce inequality, some parts of persons and programs did not find satisfactory expression within those constraints. In that contradiction lay the potential for change.

Fitzpatrick, A.A. (1989), examined the extent to which current practice in health education / promotion programmes in academic nurse managed centres reflect the use of principles and practices of adult education in program design and implementation, and identify issues and problems surrounding the use of this setting. Major findings and conclusions supported the fact that adult education principles and practices were evident in health education / promotion programs in academic nurse managed centres. The social and physical environment of the programs were conducive for adult learning in all the programmes. All the educators and learners collaborated on the steps of programme development to some extent. The past and present experiences of the learners were shared in most of the
programmes. The learners were encouraged to use problem posing and critical reflective thinking in some of the programmes. Different methods of teaching were used in many of the programmes to encourage a participatory environment. Empowerment and self-directed learning were evident in some of the programmes.

Jones, J.M. (1989) investigated principles and instructional strategies for fostering critical thinking in adult learners in North Carolina State University. The findings of his study were that the majority of Extension Home Economists perceived the formulated principles of critical thinking to be important. However, they did recognize that their teaching aid not always foster the principles. Many respondents indicated that they had never used several of the instructional strategies for fostering critical thinking. A large percentage expressed interest in receiving information about training in, or practice with these instructional strategies. The findings indicated a significant relationship between degree of comfort in using each strategy and frequency of use.

Rich, R.Z. (1989) investigated the effects of teaching text comprehension strategies to adult poor readers. The implication of this study was that strategy training improves comprehension of adult poor readers. Teaching the summarizing strategy alone was not recommended. Self questionning was found preferable to summarizing and perhaps to both strategies combined.
since it took less time to taught learnt and applied than both strategies combined. Strategies should be presented through reciprocal teaching.

In the study of Bordenkircher, T.G. (1989), phenomenological interviews were conducted. Based on the result of this study, students who enrolled in a college adult basic education programme entered with a low self-esteem which made them vulnerable to persuasion. They made career decisions based on advice from a variety of people who often knew little about the student's individual needs. Programme recommendations included on site counselling, programme orientation, instruction that was sensitive to their individual academic and affective needs, and a physical environment which demonstrates a commitment to students.

2.1.2 Environmental Education:

Cheng, H.W. (1988), investigated the impact of selected marketing on the process of food optimization and to employ response surface methodology (RSM) and conjoint analysis in analyzing the data. Significant treatment differences were found for five descriptive sensory attributes of raw products and ten of cooked products. Response surface contour plots demonstrated how changes in product variables influence the sensory characteristics of the products. For both raw and cooked restructured beef steaks, a low level of binder, low
fat content, and small ground beef particle size had the highest consumer acceptance. In other words, the consumers liked ground beef patties better than restructured beef products.

Myrick, J.A. (1983) investigated the relationship between achievement for students and allergy inducing foods. The general purpose of the study was to determine if students exposed to allergy inducing elements have a lower level of academic achievement than students not exposed to allergy inducing elements. It was concluded that food allergies probably cause problems in achievement.

Roger, W.E. (1984), assessed possible effects of exercise on appetite and the post-exercise metabolic rate. It was found that exercise had limited effect on any of the measures of appetite. Analysis of the test model showed no statistically significant differences in the speed of eating on total calories. The results suggest that continuous exercise at moderate intensity had little effect on appetite in females apart from short-term suppression. Subsequent food intake fails to compensate for calories spent exercising. More intensive exercise may have a more pronounced short-term suppressant effect, but, conversely, stimulates food intake in the 48 hours of exercise.

Fishman, P.B. (1984), investigated a means to integrate the promotion of ecologically sound food choices into nutrition
education. The results of the study suggest that the subjects were in need of increased knowledge about food shopping and ecology, and that they need to develop skills in searching for foods.

Kyereme, S.S. (1984), studied food consumption and poverty patterns. The main objectives of the study were: (1) examining the impact of changes in household income and seasonality on food consumption; (2) measuring food poverty using a decomposable poverty measure, thereby determining the contributions of locational and socio-economic groups to total food poverty, (3) studying the tradeoff between taste and nutrition. Results showed that the various analytical tools yield consistent conclusions. They suggest that food poverty is a serious problem, particularly in (1) the rural areas and the lean season. (February - July). (2) in households with many members, particularly children age (15 years), illiterate females, self-employed, unemployed or caretaker heads, low incomes and assets, and poor food resource endowments. Results of the study suggest that, to combat food poverty and seasonal hunger, small scale farmers who account for over 90% of domestic food production must be helped with public policies which increase their capacity to produce, process, store and market more food. Selective food assistance could then be given to the most needy and vulnerable people.
Pratoomsindh, W. (1984), investigated the extent of differences in the course outcomes associated with two instructional strategies for teaching food and nutrition to adults. The two instructional strategies utilized were lecture-discussion and the combination method including lecture-discussion with the aid of slides, exhibits and testing of food products. Results of the research indicated that the group of students who experienced the combination method of instruction (Group II) had a higher mean gain between the pre-test and the post-test than the group experiencing the lecture-discussion method of instruction (Group I). Group II also had a significantly higher mean score on the "Participant Reaction to the subject and the "Instructional Strategies Scale". The result of the retention test revealed no statistically significant difference between the two groups. In order to bring about more effective food and nutrition education programs, the use of a combination of instructional strategies is recommended. A comprehensive approach in food and nutrition education with integrated subject matter can result in heightening the effectiveness of each subject area.

Alkhunaizi, M.M. (1984), studied to measure the perceptions of students and school professionals toward the need for a school food service program in the Eastern Province School District - Dammam, Saudi Arabia. The major findings of the study were:
(1) at least one-half of the students did not eat breakfast, before they came to school.

(2) the majority of the students did not drink milk at school.

(3) most schools had a snack bar but the food was considered not acceptable by most respondents and

(4) over 90% of the respondents felt there was a need for a school food program.

Maghenda, W.M. (1985) performed a study on education about environmental issues. To develop an environmental education framework for Kenya, base-line data was obtained from a survey of IV Secondary School students concern about environmental issues. A split half technique was used to establish the reliability of the questionnaire. The finding of the study clearly indicates that there were regional differences, gender differences, residential differences among Kenyan students regarding environmental issues.

Murphy, C.P. (1985), conducted a study on the foodways of Indian muslims living in the vicinity of Delhi, India. An examination of food studies as they relate to Indian ethnography, revealed a hiatus in the study of Indian Muslims.
The structuring of meals and the handling of food were shown to link Indian Muslims to wider Indian culture, while simultaneously serving as important expressions of the Islamic worldview.

Hicks, B.V. (1986) analysed environmental perception and behaviour to identify planning and design considerations, survey information was organised into the following nine categories of variables: demographic, economic, agricultural economic, agricultural knowledge and behaviour, environmental perception, social and psycho-cultural. The main research issues focuses the inter-relationship of environmental quality perception and objectively measured environmental conditions and development of educational guide lines that incorporate the needs and perceptions of learners.

Libby, D.J.F. (1986), examined the relationships between self-concept and food and nutrition-related behaviour. It was found that scores on one of the factors, Super person (leader, self confident and aggressive) were negatively correlated with 5 of and 15 dietary components studied. Scores on the self-perception of a traditional orientation to life factor (help others and work hard) and the self-perception of being careful in other health areas factor were positively related to dietary patterns. Scores on the attitude that nutrition was important factor and nutrition knowledge also
were positively related to food consumption and nutrient intake.

Chang, J.C. (1986) made a study on environmental Pollution Control. Economic analyses of environmental pollution control for a project focussed on the costs and benefits of controlling pollution. The conclusion from the case study of project analyses and environmental pollution control for the expansion project of the Shanghai aluminium plant indicated that:

(i) The appropriate choice of technology transfer options between imported advanced technology and utilization of abundant labour will increase total factor productivity in China.

(ii) A rational price system will ensure that prices reflect cost efficiency and socially beneficial production of profit and loss from investment in a project.

(iii) Labour hiring flexibility will allow the enterprise to dismiss idle or negligent workers and link wages with labour productivity, and

(iv) An incentive pollution control policy will encourage the industry to internalize pollution control costs or to consider possible cost reduction options.
Kay, N.W. (1986), investigated the health status and food behaviours among urban American Indian women. The research findings reveal that the traditional precontact diet was better nutritionally, change from the traditional, preservation diet to the present one had been heavily influenced by years of receiving "commodities" and had resulted in behavioural maladaptation to a refined carbohydrate diet.

Hill, P.M. (1986), examined the impact of the nutrition education component of the wake country WIC program on nutrition behaviour change in the WIC participant. The focus of the evaluative research was the assessment of nutrition knowledge, attitudinal and food intake changes associated with a combined small group / individual instruction educational treatment. It was found that there was a significant nutrition knowledge change within the experimental group, and the comparison group demonstrated highly significant nutritional attitudinal changes as well as significant knowledge and milk intake changes. However, when the changes within the groups were compared, there was no significant difference except for milk intake in the comparison group. The sociodemographic variables of age, place of residence and race appeared to be significantly associated with nutrition behaviour change.
2.1.3 Educational Technology (Programme Learning):

Hulteen, C. and Crist, R.L. (1969) studied on the group use of programmed instructional materials, in Illinois State University. Students read a programmed text-book under two study conditions, projector and text-book. The result showed that the text-book mean was significantly greater than the projector mean. Time data clearly favoured the text-book condition.

Pikas, A., studied on comparisons between traditional and programmed learning. It was found that traditional teaching is superior to programmed learning in practical application, was confirmed regarding the teaching group where the students were given questions relating to practical application. The hypothesis that the superiority of traditional teaching in practical application would be more evident in a test given after a lapse of time than in tests which are given immediately after teaching and learning was confirmed regarding the active form of traditional teaching. The other traditional teaching group, where the students only listened to the teachers' presentation of the material, showed the same performance relations as the group which received programmed learning as regards the differences in time delay of the practical application.

Jamieson, G.H. (1969), studied on learning by programmed and guided discovery methods at different age levels.
A comparison was made between learning by programmed and guided discovery methods at four age levels. The results showed a significant positive correlation between the standardised arithmetic test scores and the binary criterion test scores obtained from both the experimental methods of learning, but the correlation was stronger for the programmed method. The youngest and the oldest groups learnt significantly better by the guided discovery method. The subjects tended to prefer the experimental methods of learning rather than the methods of learning to which they were accustomed.

Nable, G. (1969), studied on individual differences and intrinsic programmed instruction. The aim of the present study was to establish the relationships amongst a variety of individual differences while children were learning mathematics from intrinsic programmed instruction presented in teaching machines. The replicate design demonstrates that performance from programmed instruction is related more to organisational, social and administrative factors than to individual difference

Berglund, G.W. (1969), studied on the effect of partial reinforcement in programmed instruction. Results indicated:

1) no statistically significant difference in immediate or delayed criterion test scores among students subjected to various reinforcement conditions.
(2) a negative linear relationship between the time spent on the program and the percentage of confirmation provided, and

(3) no evidence of differential effect among the various conditions on the subject's ratings of the degree of difficulty of the program.

In Audio-Visual Aids and Programmed Learning Unit a study on comparisons between teaching methods at the post-graduate level done by Jamieson, G.H., James, P.E. Leytham, G.W.H. and Tozer, A.H.D. A comparison was made between learning from a programmed text, augmented (audio-visual) lectures, and straight lectures. The results showed significant differences in post-test teaching scores in the following order: first, programmed, second, augmented (audio-visual) lectures, third, straight lectures.

2.1.4 Curriculum Development (Development of Literature)

A study on development of a textile curriculum model for Nigerian higher education institution, of Kparevzua, B.A. (1983) was done to develop a University level textile curriculum model which is consistent with the current educational policies, and to increase the present fund of information about the methods, techniques, and the processes of textile production in
Nigeria. It was concluded and recommended that curriculum specifications should serve as a basis for developing instructional materials.

Rafie, A. (1984) worked on developing a high school vocational agriculture curriculum model for developing countries. It was found that curriculum planning, curriculum implementation and evaluation procedure as the three basic components of a high school vocational agriculture curriculum model are applicable with minor changes for developing countries.

Lue, Y.T. (1985) worked on developing a descriptive statistics curriculum unit for the junior college of commerce. This study was designed to develop teaching material for a new descriptive statistics unit for the mathematics curriculum of the first two years in the junior college of commerce or business high school in Taiwan. The pretest showed that Grade 11 students are prepared to learn more statistics. Generally speaking the students could learn the content of descriptive statistics provided in the experimental text, and they enjoyed the program, especially topics such as the stem-and-leaf display. The use of intriguing practical data and a guided discovery method appeared to motivate the students' learning. The post-test and examinations in the first semester of Grade 12 indicated that the students who studied descriptive statistics in Grade 11 understood the Grade 12 unit on statistics better. A descriptive statistics unit appears appropriate for the junior college of Commerce in Taiwan.
the Junior College of Commerce in Taiwan.

The study done by Quackenbush, D.R. (1985), involved the development process of a panel of experts and several small groups of students (5 - 10) in the evaluation and revision of the text-lab manual. Results of the pilot implementation indicated that there was a significant difference at the .01 percent confidence level between pre and post-test scores on the cognitive test for students using the investigator prepared instructional materials.

Long, B.B. (1985) attempted a study on curriculum development. This study was an historical case study which attempted to answer some questions about mathematics curriculum development and the forces which influence it. It was concluded that the most frequent influences on curriculum change in the mathematics department at the University were the professors perceptions of the student needs, requests and suggestions of other units of the University academic administrators and professors, in that order. Internal pressures influenced curriculum development much more than external pressures did. However, there was significant influence exerted by other departments. Several pressures which were cited in the literature did not seem to influence curriculum development in the mathematics department at the University. On the other hand,
all the forces which were identified as pressures on curriculum development in the mathematics department at the University were cited in the literature. Thus, no additional stimulants of curricular revision and development were identified.

In 1986 Williams, J. conducted a study of curriculum development. The purpose of the study was to document, analyse and critique. On the basis of contributions from the literature and perceptions held by the professionals involved, the processes by which an appropriate curriculum was developed for the student body in a recently formed middle school. There was an expressed desire for more formal curricular work of an institutional and interdisciplinary nature consonant with the existing culture. The school was also found to exhibit a number of theoretical middle school principles. Although, neither the linear view of curriculum development, nor the full institutionalisation of formal structures were evident, the curriculum development in operation in the areas studied was continuous, deliberate and conceptually coherent. It was concluded that perhaps there is a need for models that more accurately reflect practice.

2.2.0 NATIONAL SCENARIO

2.2.1 Adult Education:

Mali, M.G. (1974), studied on factors affecting
retention of literacy among adult neo-literate. It was found that:

- The reading materials had a very high correlation with literacy retention,
- environmental factors had no influence on retention, and
- class-room factors needed to be stressed for retention.

Ali, Mohammad (1978) inquired into the objectives and functioning of the adult education scheme carried out at Gomat, Aligarh. The main purposes of the study were to look into the working of the adult education scheme as being carried out at Gomat, one of the centres about 35 km. from the Aligarh Muslim University campus and to find out how far the adult education scheme has been successful in involving the masses to play an effective role in bringing about social change in community. The main results of the study were:

(1) The centre did not achieve any significant success in imprinting literacy or numeracy skills, and the teachers did not much about the peculiar needs of adults.
Women were particularly confined within the four walls of the home and found unaware of many current events.

Caste system was found deeply embedded in the village community.

A majority of girls were found keen to learn English. Generally all were in favour of some sort of financial assistance to the poor.

Rani, S. (1982) evaluated the literature of adult learners prescribed in Uttar Pradesh. Following booklets were taken into consideration:

1. Naya Sawera Praveshika
2. Naya Sawera Pahali Pustak
3. Auo Padhe Aur Sikhein
4. Auo Charcha Karain

The evaluation of above mentioned booklets were done on the basis of decisions given by 25 experts only. It was found by the expert's opinion that among these booklets, most appropriate and valuable booklet is Naya Sawera Pahali Pustak (75.02%). Auo Padhe aur Sikhain Pustak (72.28%) has average status. Other booklets were found not valuable. Typing main
cover and letters of the booklets were found almost suitable.

Bastia, K.C. (1984) made a study on the National Adult Education Programme in the tribal region of Orissa State. The main objectives of the study were to study the process and content of National Adult Education Programme in the tribal region with respect to its objectives, and to study the relevance of the National Adult Education Programme in relation to the problems and needs of the tribals in their life situations. The findings of the study clearly indicate that curriculum followed at the centres mainly concentrated on the teaching of literacy and numeracy skills, and the impact of National Adult Education Programme on the neo-literates in different aspects, and improvement in their life was found to be effective in a very few cases.

Rao, B.S.V. (1986) studied on women's performance to find out the impact of Adult Education Programme in respect of its three components, namely, literacy, functionality and awareness with the help of interviews using questionnaires. The results indicated that the literacy skills of female learners were best in writing names and reading sign boards and poor in reading newspapers and filling up forms.

Reddy, G.L. (1986) conducted a study on personality characteristics affecting participation in Adult Education Programme. For the purpose of assessing the personality
Cattell's 16 PF questionnaire Form E was used. The study revealed that personality characteristics which were found to promote active participation in the programme are cheerfulness, activeness, talkativeness, impulsiveness, expressiveness, practical and realistic outlook, absence of jealous tendencies, adaptive nature, concern for others, ability to work in team, maturity, confidence in himself and his capacity to deal with things, accompanied by coolness, desire for social approval and admiration. The characteristics found responsible for the participants, dropping out of the centres were taciturnity, reticene, introspective tendency, impatience and impractical outlook, mistrust and doubtfulness, poor team spirit, depressed, moody and suspicious nature, child-like tendency to anxiety when confronted with difficulties independence, resoluteness and the habit of doing things in one's own way.

A field experiment was undertaken by Shah, A and Gupta, S. (1986), for a comparative study of the effectiveness of different types of visual aids — for instance, graphic (flash cards), three dimensional (puppets) and projected (slides) aids in imparting non-formal education. The major findings of the study were:

(1) There were significant differences in the pre-test and post-test scores showing an overall impact, overall gain in knowledge, overall change in opinions,
gain in knowledge of supplementary income activities and change in opinions with respect to supplementary income activities and change in opinions with respect to supplementary income activities in $E_1$, $E_2$, and $E_3$.

$E_1$ = Experimental group subjected to flesh cards

$E_2$ = Experimental group subjected to puppets

$E_3$ = Experimental group subjected to slides.

There was no significant difference in the pre-test and post-test scores showing the change in opinions regarding educating girls and women in $E_1$, $E_2$ and $E_3$.

Selvaraj, M.S. (1987) performed a study on application of behaviour modification techniques in educating adult learners in post-literacy centres.

It was found that all the six treatments adopting the behaviour modification techniques, have their significant effects in helping the neo-literates learn.

The purpose of the study done by Ubaidullah, M.(1988), was to examine whether differences in social, economic,
demographic and mass-media would account for significant differences in the knowledge of attitudes towards and practices of population education as far as national adult education programme of Andhra Pradesh was concerned. The major findings of the study were that the variable, such as sex, religion, caste, occupation, number of children, type of family and size were significantly related to knowledge of attitudes towards and practices of population education. Secondly, the variables, namely, type of house, institutional facilities available at the village and family literacy index are not significantly associated with knowledge of attitudes, towards, and practices of population education.

A study of attitudes of instructors towards adult education programme was done by Misra, A.(1988) and Kabthiyal, K.C. He found that female instructors were more conscious than male instructors about illiteracy situation of the country, particularly of illiteracy prevalent among women folk, instructors were not technically aware of the implications, aims and prospects of adult education programme in overall development of the country. During training they were exposed to all such aspects of the programme, which incidentally led to generate in them a positive attitude towards adult education and there was no significant difference between pre and post-session attitude of the instructors towards adult education.
Villi, C. (1989) investigated the motivational change of the learners through song and drama programme. The study was aimed at investigating the changes in the level of motivation among adult learners under the area development approach after the drama programme. It was observed that:

1. The learners were adopting new habits in their life.
2. 91% of the learners' motivation had increased after witnessing the drama programme.
3. 82% of the learners' knowledge had improved through drama programme.
4. 32% of the learners' attendance had improved after witnessing the drama.

In another attempt, Kabthiyal, K.C. and Misra Arun (1989) explored the occupational needs of rural adult illiterates in Garhwal, Uttar Pradesh.

It was concluded that the main occupation of rural male and female in Garhwal was agriculture and was female-dominated. But due to their illiteracy and unawareness, they were adopting tiring and toilsome traditional agricultural techniques. Due to lack of knowledge and skill, the level of occupational satisfaction of both men and women were found
less. For the interested male respondents, lack of money was found to be the common cause behind their inability to start some new jobs or enter a new occupation.

Rao, D.B. (1989) studied on adult education centres - programmes, problems and proposals, to find out whether the adult learners were interested or not and the role played by the organisers of adult education centres. The study revealed that the adults were utilising the adult education programme properly and were also participating in social activities. All the organisers except two were properly utilising the teaching material. 93% of the sample were getting help in their teaching from the experienced people. Most of the organisers (89%) were discussing the problem of the participants and solving those problems by suggesting, remedial measures. Majority of the organisers (69%) were examining the progress of the adults by evaluation, after teaching. An average percentage of the sample was motivating the interested adults by giving prizes.

Singh, Rajender (1989); performed an experimental study of developing awareness among illiterate adults. This study was carried out to know whether adult education programme develops the level of awareness among illiterate adults. It was found that all the workers employed hygienic methods during milking after their exposure to the awareness development programmes. It was concluded that there was a significant
improvement in the level of workers' awareness after they had the awareness development programme.

Vanaja, V. (1989), conducted a study of women dropouts in adult education centres. This study was limited to the dropouts from both rural and urban adult education centres in the taluk meant for the year 1985 - 86. It was concluded that:

I. It is necessary that the instructors should equip themselves properly in order to handle adults and guide them in a proper manner.

II. Vocational skills may be introduced in adult education centres to make the learners productive and improve their economic condition. Adult education centres may become economically productive and find market for their products.

III. Effort may be made to create awareness in the people which will help them to change their attitude towards the programme, and help relax the socio-cultural inhibitions against attending adult education centres by both married and unmarried girls.

IV. Development departments may be involved in adult education programmes this may motivate the learners.
V. Selection of teachers may be based on qualification and commitment than on caste and influence.

VI. Schemes like I.C.D.S. may be extended to all women adult education centres which may help women with small children which is found to be one of the main hindrances for them to attend adult education centres regularly.

VII. Jana Shikshana Nilayams may be opened in both urban and rural areas.

VIII. Mass-media may be made use of to the full extent to create awareness about the programme, and to seek co-operation and help from the people to run adult education centres without much difficulty.

Reddy, B.K. and Reddy, P.V.S. (1991), made a study on reading interests of neo-literates. It was concluded that following should be considered while developing the materials for neo-literate reader:

1. The neo-literate has limited reading ability and he is not a habitual reader, also he is not familiar with the standard or formal language. Therefore, the author should familiarise himself/herself with these features.
2. As the neo-literate is a user of oral mode and style of language, and it is often highly functional and has an adequate and active vocabulary, it is desirable for the author to familiarise himself/herself with the neo-literates language by interviewing them.

3. As the neo-literate is a fully matured human being with a specific value system as well as a world-view, the author must select themes that would be of interest to a neo-literate reader. The basic requirement in selection and treatment of themes would be to enlarge upon the life around him/her and to provide entertainment and human interest. Keeping this in view the National Book Trust, India has suggested the following:

(i) The theme should not present an activity with which the reader is not familiar.

(ii) The theme must make the reader reflect on his/her socio-economic conditions as well as his/her environment.

(iii) The theme should make the reader reflect on how he/she can improve his/her condition and take advantage of developmental opportunities.
(iv) The theme should make the reader look for solutions to his/her immediate problems.

(v) The theme should make the reader aware of national concerns and issues.

4. Regarding illustrations for books for the neo-literates the following suggestions have been made by the National Book Trust, India.

(i) Visuals and words have to work closely together.

(ii) Obvious situations and objects need not be visually portrayed.

(iii) If the text is for recreation, then dramatic situations may be visually depicted.

(iv) If the style is realistic, then the colour should also be realistic.

(v) Illustrations should be native to the culture, i.e. they should depict authentic landscape, costumes, flora and fauna etc.

(vi) The illustrations should use realistic techniques to convey abstract ideas.
(vii) Illustrations may occupy 30 - 40 percent space in the book.

(viii) Clarity, authenticity and attractiveness are the most important factors.

(ix) Illustrations shall be in two colours, with the cover in maximum three colours, in realistic and attractive style.

5. (i) For publishers it is suggested by the National Book Trust, India, that for the size of a book for the neo-literates, though not strictly prescribed, the desirable norms would be

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\frac{20 \times 30}{8}, \quad \frac{18 \times 22}{8}, \quad or \quad \frac{17 \times 27}{8}
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(ii) Regarding the type-size and quality of paper it is suggested that the type-size would vary from 16pt black to 24 pt black, depending on the size of the book and literacy level of prospective readers. Besides the type-size, usage of the standard shapes of letters is important. Good quality white printing paper should be used so that the print on one side is not visible on the other.
(iii) Regarding binding, the central stapling or two staples at equal distance should be done depending on the number of pages up to a maximum of 64 pages.

Sebastian, X. (1991), made a study of the extent of correlation of attitude and achievement of neo-literates in cent percent literacy campaign and found that there was a positive correlation between attitude and achievement (literacy level) and it was found to be 0.6782. The correlation of the universe was also calculated and it was found to be in between 0.6418 and 0.7146.

The extent of relationship between attitude and achievement of neo-literates could be found out by the equation $y = 0.3434 \times - 26.7727$ (where $y$ stands for achievement score and $x$ stands for attitude score). From the regression graph, it could be easily seen that higher the attitude of the learners, the higher would be their achievement.

The percentage of high achievers of literacy was 18% average achievers 67% and low achievers 15%.(Those getting scores at or above $(M + \sigma )$, where $M =$ arithmetic mean, $\sigma =$ standard deviation, were classified as high achievers and those getting scores at or below $(M - \sigma )$
were classified as low achievers and the remaining respondents as average achievers). In the analysis of attitude score also the same percentage of high, average and low attitudes was found.

These findings showed that attitude had a decisive influence on achievement (literacy level).

The respondents were economically poor and 80% of them belonged to backward classes. 69% of the respondents had an annual income below Rs. 4,800/= only and all the respondents come under the annual income below Rs. 7,200/=. This showed that there was a significant correlation between poverty and illiteracy.

On the basis of the study conducted and the analysis made some suggestions were put forth for the more successful launching of literacy campaigns:

a) Favourable conditions must be created for the illiterates to increase their attitude towards literacy.

b) Mass mobilization is the only way for eradicating illiteracy to a considerable extent and also in a short period of time.
c) Making of a good rapport between teachers and learners is very essential for the success of a literacy campaign.

d) A systematic effort in building up mass awareness is necessary to make a literacy campaign effective.

e) While appointing instructors it is to be kept in mind that those who hail from the same cultural milieu and community of the learners are able to understand the peculiarities of the learners more easily and accurately.

f) Involvement of students should be increased by making literacy work as a part of study service, work experience and social/national service.

g) Newspapers and magazines for neo-literate must be published and provided to them free of cost helping them retain the acquired literacy.

h) The expenditure of this type of campaign must be reduced and the duration of this type of campaign must be enhanced.

i) Follow up action of literacy campaign must be intensified.
2.2.2 **Environmental Education**:

Gupta, V.P. and others (1981) made a study on environmental awareness among children of rural and urban schools and non-formal education centres and found:

1. The difference between school-going rural children (FR) and school-going urban children (FU) on environmental awareness was significant and in favour of school-going rural children (FR).

2. Difference between children studying in non-formal education centres (NFR) and school-going children from urban areas (FU) was also significant on environmental awareness and in favour of children studying in non-formal education centres.

3. The difference between children studying in non-formal education centres (NFR) and school-going children from rural areas (FR) on environmental awareness was not significant.

Manuel (1982) analysed some worthwhile environmental education models in India and abroad and other relevant materials from the point of view of developing a functional theory of environmental education.
Rajput, J.S., Saxena, A.B., Jadhao, V.G. (1980), identified the awareness of children of primary level, towards the scientific and social environment. The study revealed that only one of the four groups (2 schools X 2 classes) were significantly different on environmental awareness at pre-test stage, whereas at the post-test stage two experimental groups were significantly better than the control group. The difference between the experimental group and the control group on a traditional achievement test was not significant.

Central Regional Centre, Jabalpur, conducted a project on nutrition, health education and environmental sanitation in primary schools (1981). The main purpose of the project was to develop instructional material for students and teachers relevant to local environment and to implement the programme in selected schools and evaluate the impact of the programme. Results of the project showed that impact was observed in awareness of the cleanliness of clothes, hand, feet and cutting of nails.

In another attempt, Pai, S.G. (1981) prepared and tried out a curriculum in environmental studies leading to life-long education for college students. The study showed that there was a significant difference in the performance of the experimental group compared with control group on knowledge score and attitudes scores. Suggestions were made to pay more attention to the actual process of education in the class-room and bring about a conceptual change in its role.
Siddiqi, W.A. (1981) made a study on hydrochemical environment of Hindon river and their impact on regional biology. The area under study falls under Hindon river basin comprising of the four districts of Ganga-Yamuna starting from Saharanpur in the north followed by Muzaffarnagar, Meerut and Ghaziabad districts in the South. It was found that the water pollution in the study area was mainly due to the indiscriminate disposal of industrial wastes on the land and other surface water channels. It had thus also created serious water pollution problem.

An experimental study of the effect of the noise on perceptual motor abilities, in neutral and motivated conditions was done by Anjum Shahina (1982). Following perceptual motor abilities were under study:

1. Perceptual similarity
2. Perceptual speed and accuracy
3. Perception of forms
4. Motor ability

The study tests the subjects in four conditions:

1. Noise absence neutral (NAN)
2. Noise absence motivated (NAM)
3. Noise neutral (NN)
4. Noise motivated (NM)
The study revealed that:

(1) Performance declines in noisy environment.

(2) Performance was better in motivated condition than in non-motivated condition.

(3) Performance decrement effect of noise was minimized if subjects were motivated.

Yadav, Madhuri (1987) made an experimental study of the effect of noise on recall, memory, language comprehension and mathematical ability of girls and boys. Major findings of the study were:

i) Noisy as adverse effect on recall ability.

ii) Language comprehension ability deteriorates under noisy condition.

iii) Noise had no effect on, mathematical ability significantly.

iv) The girls were less affected by noise than boys.

v) Girls had shown superiority over boys in ability to recall language comprehension and mathematical ability.
2.2.3 **Educational Technology (Programme Learning):**

Rahim, A. (1969), compared the effectiveness of teaching by the programmed instruction technique with that by the 'usual' classroom procedures. For this purpose a linear programme on 'Static Electricity' suitable for class XI students was constructed. Results revealed that the experimental group gained both in terms of average scores and distribution of pupils with regards to the scores obtained. Results of this study were in the favour of programme instruction. It was concluded that the programmed instruction technique can be employed with advantage in our school.

In another attempt, Khan, Amanullah (1972), compared the effectiveness of programmed instruction technique with that by conventional class-room procedures. For the purpose of this study a linear programme on 'Ohm's Law' was constructed. Programmed instruction technique was found more effective than the 'usual' class-room procedure.

Chauhan, S.S. (1973) developed a programmed text in educational psychology for B.Ed. level.

The study revealed that:

1. the error rate of the entire programme did not exceed 8.72 percent.
(ii) the density of the programme calculated by taking into account the number of frames and number of responses expected was found to be 1.117.

(iii) the sequence progression for each unit was fairly normal, and

(iv) the opinion expressed by the student teachers was found to be favourable towards the programme.

Gupta, O.N. (1973), studied to develop a self-instructional programme in the basic sentence patterns of English for the undergraduate students and to make an empirical study of the programme on the basis of field testing. The final version of the programme was evaluated in terms of programme density, error rate and sequence progression separately for the two major parts, viz., definitions and structures. The programme density for the frames on definitions ranged from 0.4 to 0.15 and the error rate for the same ranged from 1.2 to 3.4. The programme density for the frames on structures ranged from 0.4 to 0.08 and the error rate for the same ranged from 1.4 to 3.2. The average density and error rates for the complete programme taking the parts on definitions and structures together were 0.06 and 2.0, respectively.

Patel, O.B. (1975) developed programmed learning material in Geometry for standard IX and studied its
effectiveness in the context of different variables. The findings of the study were:

(i) the programmed learning material (PLM) proved to be more effective than conventional method.

(ii) high and low 1.8 groups of students performed better with programmed learning material (PLM) than with conventional teaching.

(iii) the average time taken by the group learning programmed learning material was less than that of the group taught by the traditional method, and

(iv) students from different strata of the society performed better with programmed learning material than with conventional teaching.

Lal, Khan (1976) studied on audio-visual materials. The main findings of this study were:

Equal number of teachers of both Delhi and Aligarh agreed with following reasons:

(a) Audio-visual materials are useful in supplementing the text-books.
(b) These materials help to attract and sustained the attention of the pupils.

(c) These aids can promote student's cooperation and participation in lessons.

(d) Group feeling can be promoted through the use of 'Audio-Visual' materials.

Govinda, R. (1976), developed programmed text on educational evaluation. The experimental study revealed that:

(i) a programmed text was as effective as structured lectures.

(ii) eighty percent of the students had favourable attitude towards programmed learning.

(iii) Students with more favourable attitude achieved higher scores.

(iv) intelligence and achievement motivation had no definite effect on achievement.

(v) there was no significant relationship between attitude of students towards programmed learning and their intelligence, and
(vi) there was no significant relationship between attitude of students towards programmed learning and their academic motivation.

Shitole, C.B. (1976), performed a study to develop programmed learning material for agricultural subjects in Marathi medium Secondary Schools and to study its utility for different categories of students. The results showed the superiority of programmed learning method over the traditional one, irrespective of the category and sex of the student. The study also showed that programmed learning method required less time than the traditional one.

Kuruvilla, R. (1977), made an experimental study in the use of programmed learning material in the class-room.

The major findings of the study were:

(i) Eighty percent of the students who had learnt through different types of programmes had scored eighty percent or above.

(ii) The branching form was significantly more effective than other forms when students' performance and time were take as criteria.
(iii) There was positive and significant relationship between performance of students of post-test and reading comprehension on each form separately.

(iv) There was no significant relationship between performance of students on post-test and academic motivation on linear overt, branching and response prompt forms, but skip programme had a positively significant relationship.

(v) Most of the students had positive attitude towards programmed learning.

Kumar Shruti (1977), made a study to prepare programmed learning material in Hindi Grammar and to investigate into its effectiveness.

The major findings of the study were:

(1) Results ensured that programmed learning material had a direct bearing on the minds of learners. They understood things more clearly with programmes.

(2) Programmed learning material had superior performance in comparison to traditional group as its effectiveness is proved by the experiment.
(3) Girls and boys had the same ability to understand the things whether they learnt by programmed material or by teacher in traditional way. Learning was not affected by their sex.

(4) Results had shown that the students of rural areas did better than the students of urban area, whether they were boys or girls and whether they had learnt by programmes or they were taught by the teacher.

Kumar, Jitendar (1978), made a study on programmed instruction effectiveness in relation to extraversion. The study attempted to investigate the interaction between extraversion and instructions through linear programme and conventional methods of instructions.

Trivedi, I.U. (1980), performed a study on use of brunching variety of programmed learning material as diagnostic and remedial tools.

The major findings of the study were:

(i) For class VI, the programmed learning material was more effective than the conventional method of teaching whereas for classes V and VII, both the methods were equally effective in terms of pupils' achievement.
In the case of class VI, girls learnt better than boys through the use of programmed materials, whereas in the case of classes V and VII, there was no significant difference between the mean scores of boys and girls learning through programmed materials.


The findings of the study was that the programme learning material was superior to the traditional way of teaching, irrespective of different variables.

Shah, J.C. (1981), studied to develop and try programmed material in mathematics for students of class V in Gujarat State.

The outcome of the inquiry were:

(i) Programmed material on the selected units in mathematics for class V was developed. The total time for completing the programmed material was twenty four hours and forty minutes.

(ii) The reactions of the students and the teachers were favourable.
Mavi, N.S. (1981), developed a programmed text in physical Geography for high school students.

The findings of the study were:

(i) Ninety-five percent of the learners were able to respond correctly to 95 percent of the frames.

(ii) The cumulative density calculated by taking into account the number of frames and the number of responses expected did not exceed 0.50.

(iii) Sequence progression for information through the frames was fairly normal.

(iv) On unit tests, the success reached by learners ranged from 85 to 91 percent.

(v) The opinion expressed by the students was found to be favourable towards the programme.

Rizvi, Rani Bano (1982), investigated the effectiveness of linear programme and conventional methods of teaching in relation to learner's characteristics. This study proposed to investigate interaction between Introversion - Extroversion and Neuroticism on the one hand and achievement through programmed learning and conventional methods of
teaching in the other. The results clearly showed that achievement through Instruction (ATI) researches can go a long way for individualization of instruction by assigning instructional treatment suited to the learner's attribute.

A study on development of multi-media instructional strategy for teaching science (Biology) at secondary school level was done by Ravindranath, M.J. (1982).

The main findings of the investigation were:

(i) The instructional strategy was effective to the extent that 70 percent of the experimental group students obtained 60 percent and above on all the unit tests and the comprehensive test.

(ii) The experimental group students performed better than the control group on the comprehensive test and also on the annual examination conducted by the school authorities.

(iii) Development of scientific attitude was significantly higher for the experimental group students.

(iv) About 70 percent students expressed favourable reactions to all the components except towards team teaching.
There was positive and significant correlation between intelligence and achievement through the strategy.

The strategy was quite feasible in terms of time as it required only ten additional periods spread over the whole year for completing the course.

Both types of FLM, namely, inductive and deductive were equally effective as instructional material.

In an attempt, Singh, Brajvir (1984) studied programmed instruction effectiveness in relation to cognitive styles. The main objective of the study was to investigate the interaction between three dimensions (analytical, relational, and categorical) of cognitive styles and two instructional treatments: namely, expository and programmed learning. It was found that the students low on analytical dimension and high on categorical dimension achieved high through programmed learning than their counterparts.

Kalra, Sunita (1989), studied interaction effects between intelligence and programmed and expository styles of teaching in distance learning.
It was concluded that the use of expository lesson texts was not fruitful in distance learning for high as well as low intelligence students and the programmed lesson texts may be adopted for low intelligence students perhaps due to the fact that through programmed lesson text, the student got frequent reinforcements and feedback just like in face to face teaching situations.

2.2.4 Curriculum Development (Development of Literature)

Shukla, G.B. (1975) made a critical study of curriculum development at the stage of elementary education in the state of Gujarat.

The major findings of the investigation were:

(i) The primary education curricula was divided into two phases, for classes one to five, and for classes five to eight. The major defects of the primary school curriculum were lack of practical knowledge, inadequate arithmetic in the lower classes, emphasis on information rather than understanding, a heavy load of subjects matter, absence of moral education, low level of instruction in history, rational geography, the local trade, industry etc., a curriculum divide flexibility and the like.
(ii) The respondent felt an urgent need for a continuous programme of monitoring and evaluation of the curriculum.

(iii) The need to undertake studies for improving teacher motivation was felt.

(iv) Teachers and teacher-educators felt a lack of involvement in the process of curriculum construction.

Uppal, S.S. (1977), made an attempt to study development of curriculum in science for standard VIII of the secondary schools in the state of Maharashtra. The findings of the study clearly indicated that the existing syllabus in forces in the state needed modification, and the syllabus suggested by the investigator was found to be effective.

Sundararaj, S. (1978) studied on development of curriculum on population education for college students, and to examine its efficacy in terms of pupils' knowledge, understanding, application as well as conditioning, awareness, opinion and attitude. The findings of the study were:

(1) Improvement in overall performance through instruction was shown by the significant difference in the mean scores of the experimental group in the post-test as compared to those in the pre-test.
Performance of the experimental group in the post-test was significantly higher than that of the control group on conditioning scores.

Performance of the experimental group on awareness scores in the post-test was significantly higher than that of the control group.

Performance of the experimental group on the opinion scores in the post-test was significantly higher than that of the control group.

The adjusted post-test mean attitude score of the experimental group was significantly higher than the adjusted post-test mean score of the control group.

Thakore, R. (1979) studied on developing a curriculum in population education for secondary teachers under training. For developing a curriculum on population education for secondary teachers under training, the investigator made an elaborate study of all the relevant literature available both in the area of curriculum theory and that of population education. The new curriculum developed was actually tried out for the whole academic year in the normal working conditions. The measurement aspect of evaluation was complemented by the
assessment aspect. Finally the curriculum package was developed for teacher trainees.

A study and tryout of a curriculum for mentally handicapped children was performed by Shukla, N.N. (1979), developed and evaluated the curriculum for mentally handicapped children. It was found:

(1) The Gujarati medium students taught by the modified instructional material performed better in language and arithmetic in the first evaluation while in the second evaluation they were significantly better in all aspects.

(2) Among the two groups of the Marathi medium students there was no difference in the first evaluation, while in the second evaluation those exposed to the modified syllabus showed better performance in arithmetic, general knowledge, community living, drawing and handicraft.

(3) According to teachers' opinion regarding improvement of Gujarati medium students Chi-square values were not significant. However, there was significant improvement in arithmetic, language, general knowledge health and community living among those exposed to the new curriculum, while there was no improvement proved in handicrafts, music and physical education.
Teachers' opinion regarding improvement of Marathi medium students taught the new curriculum indicated significant improvement in general knowledge, language, arithmetic, sense-training, music, health and community-living while in handicrafts and physical education the difference was not significant.

Pai, S.G. (1981) studied on preparation and tryout of curriculum in environmental studies leading to life-long education for college students. The main findings of the study were:

(1) There was significant difference in the performance of the experimental group as compared to control group on knowledge score and attitude scores.

(2) The experimental group had gained more than the control group in environmental activities inventory, indicating effectiveness of the curriculum.

(3) As the result of instructions for using the curriculum, students reflected clear images perceived in terms of their sensitivity towards the environment.

(4) Unit-wise analysis of the performance of the students in the experimental group showed that they have gained over all knowledge in environmental problems as a result of the knowledge gained from the new curriculum.
Muttaqi, I.A. (1981), conducted a study on development of curriculum in Biology for Secondary Schools of Bangladesh. The study was both a developmental and an evaluative research. The major findings of the study were:

1. In the formative evaluation the curriculum and the curricular materials were found suitable, appropriate and effective in achieving the curricular goals.

2. In two grades the rural students showed more favourable attitude towards environment than the urban students of the same grades while in the majority of grades there was no significant difference in the mean gain in achievement of the rural and the urban students.

3. There was significant difference in the level of ecological knowledge of boys and girls, the girls possessed more knowledge than the boys. In majority of the grades there was no differences in attitudes of boys and girls towards environment.

4. In the majority of the grades the difference between the rural and urban boys in respect of knowledge in ecology was significant, the knowledge in ecology of urban boys was greater.
In the same year, Jariaj, G.S. (1981), prepared instructional material for developing creativity in students and assessed the effectiveness of verbal and non-verbal instructional material in the development of creativity of students. It was found that:

(1) The post-test creativity mean scores of students of verbal and non-verbal experimental groups were significantly higher than those of the students of the verbal and non-verbal control groups.

(2) The post-test mean scores of male and female students of verbal experimental group were not significantly different in any of the four aspects of verbal creativity. The post-test mean scores of male and female students of non-verbal experimental group were not significantly different in four of the five aspects of non-verbal creativity, namely, fluency, flexibility, originality and total creativity, whereas in elaboration aspect of non-verbal creativity, female students of the experimental group scored significantly higher than male students of the experimental group.

In another attempt, Ram Das, J. (1981), who studied on curriculum development in science relevant to the Indian School system in Poona University. The study led to some
broad generalizations. The comparison of the control and experimental groups revealed that teachers showed some significant factors such as willingness to change their teaching methods and go beyond the textual material to include real life experiences, and to encourage participation of pupils.

Indian Council of Social Science Research Association of Indian Universities developed a curriculum of population Education for secondary teachers under training, and tryout of developed curriculum was done, under normal set-up of a secondary teachers' training college. It was concluded that such a curriculum may also prove useful for starting in-service programme in population education for the secondary teachers already serving in the school of Gujarat.

After survey of related literature it is concluded that several efforts on curriculum development have been made in foreign countries as well as in Indian situation concerned. The findings of these researches were helpful to mould the curriculum according to existing needs of the learners. These studies showed the weaknesses of curriculum at different levels and also helped to suggest the novel ideas related to learning experiences, content and instructional strategies. The studies on environmental education revealed that awareness in the learners towards their scientific, social and cultural environment is a significant approach.
Scientific researches related to adult education in our country has to be the commitment of the nation because of its direct relevance for improving the existing condition of the poor. The research findings and results of this field are of immediate use and are very helpful to promote this programme. The effort of University in this direction is appreciable.

The review of related literature also indicates that attempts in Curriculum Development, environmental education have been made in India since long. Generally these attempts have been done at school level. Like school students, it is essential to develop awareness, right attitudes in adult learners, which requires a well prepared curriculum directly related to their life experiences. The occupation of an adult learner is an important fact to be considered through which an adult educator can enter into his psychological world.

Thus, it can be said whatever researches conducted in the field of adult education have no relevance with the prevailing conditions and far from realistic situation, which create dilemma of mental exercises. Here the researcher has tried to synthesize the three dimensional nature of the content according to the urgent need of the adult learners in their own environment. This has to enhance the efficacy of the content provided to them as well as sustain their inner urge to read and motivate for desirable learning.
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