PERCEPTION OF TEACHERS OF KARNATAKA ON SCHOOL CURRICULUM

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CHAPTER I

INTRODUCTION

In any country, the educational system especially the school education is viewed as the cornerstone on which a firm foundation is gradually built-up for the proper growth and development of the nation. Under the broad concept of school education, the concept of 'curriculum' constitutes a large domain inclusive of the objectives of curriculum, the curricular areas/subjects denoted by content, the leaning activities suitable for teaching/learning of content and the provision of evaluation of students' learning outcomes. Curriculum development is a continuous process involving:

a) The planning and development of a new curriculum, with all components therein,

b) The implementation of the newly developed curriculum,

c) A continuous evaluation, both formative and summative, of the curriculum in practice/revision of curriculum based on its evaluation after a reasonable period of implementation.

All these activities need to be done in the context of socio-political realities of any given society, the advancement in knowledge and the psychology of learning and the learner.

After independence, the national debates and discussions on the shape of education to be provided to the teeming millions of children culminated in the formulation of a 'National' system of education by the Kothari Commission on Education in 1966. Such a vision on school education and curriculum ernerged as an ideal to be strived for our federal structure of government where education is a subject in the concurrent list with the major responsibility resting with the State Governments and the Central Government acting as a patron and pace setter in

the formidable task of providing a 'Framework' of school education/curriculum to the states.

It is in this content that the NCERT came into being as the apex body in school education under the MHRD, Government of India for the formulation and implementation of educational policies. The NCERT formulated and published the school curriculum framework entitled "The curriculum for the 10 year school" in 1975 with clear-cut guidelines, based on national consensus, regarding the planning and implementation of all the areas/subjects in school curriculum. Again, under the auspices of the National Policy of Education 1986, the NCERT, after discussion at regional and national levels, brought out the document on curriculum framework, "National Curriculum for Elementary and Secondary Education Framework" in 1988. For over a decade, this document has served as a beacon light for curriculum developers, implementors and for teacher-education programmes across the nation.

In the last decade, India has emerged as a resurgent economy having its impact on the social, political, scientific and technological spheres. This has had a bearing on India's standing and relations internationally. All these have influenced the perceptions and practices as to the roles and functions of education in general and of school education in particular. Hence, a need has emerged to give a relook at the existing national curriculum framework. Accordingly, the NCERT has initiated a fresh effort of discussions and debates towards evaluating the existing curriculum and evolving a new curriculum framework.

A draft curriculum framework developed by the NCERT has been circulated widely. The document highlights the concerns and issues which are either of a general nature or specific to the curricular areas. They have not been discussed here to avoid repetition. However, they are presented in brief as they relate to the school education in Karnataka in the chapter on "Discussion of Findings". Several regional and national level seminar and discussions have been held with a view to evolve a new curriculum framework for the nation in the new millenium.

In this context, the perceptions borne out of experiences of teachers are important since it is a teacher who implements any curriculum. Hence, apart from the above efforts, it was also decided by the NCERT to undertake a quick study of perceptions or teachers across the country.

To undertake a study which is representative of a large and diverse nation such as ours, the NCERT, New Delhi decided to involve the four Regional Institutes of Education at Ajmer, Bhopal, Bhubaneswar and Mysore, apart from the National Institute of Education located at its headquarters. Further, every RIE was required to conduct a teacher perception study in one of the states in the region in which it is located. Thus RIE Mysore took up the study in the state of Karnataka.

With a view to consolidate the findings nationally, the NCERT developed a general guideline and research design to be implemented uniformly by each constituent. However, provision was made to adapt the guideline and research design to suit the structure and the design of the curriculum in the state selected for the study.

1.1 OBJECTIVES OF THE STUDY

The main purpose of this study was to collect the views, opinions and perceptions of teachers working at various levels of school education on those issues and aspects of a curriculum, which may have a bearing on the nature of the curriculum framework being evolved. Hence, the following objectives were formulated for the study.

1. To collect the perception of teachers related to general curricular issues, and the issues specific to language education, science and mathematics education and social science education at the school level.
2. To study the variation in perception of teachers across the levels of background variables viz., the level of school at which teaching, locale, gender, qualification and experience.
3. To draw implications for the national curriculum framework based on the perception of teachers.

CHAPTER II

METHODOLOGY OF THE STUDY

This chapter deals with the method of the study, the sampling design, the tools used in the data, the procedure of collection of data and its analysis.

2.1 METHOD OF THE STUDY

Since the study intends to collect the perception of teachers on issues pertaining to the curriculum, the method followed in the study is one of survey. The general framework of the study is one of descriptive status survey rather than that of an evaluative survey since no efforts were to be made to arrive at value judgements about the desirability or otherwise of the perceptions held by teachers. The effort was to describe the existing perception of teachers and the patterns and variations therein in terms of the background variables.

2.2 SAMPLE FOR THE STUDY

As the study was intended to ascertain the opinions of teachers at different levels of school education on issue concerning school curriculum, multistage stratified random sampling design was adopted for selection of teachers.

Teachers working in primary (both lower and upper) secondary and senior secondary (Pre-university course) schools in the state constituted the population for the study. As per the national research design, it was planned to have a sample of 500 teachers representing the three levels of school education in the ratio 4:3:3. In order to draw such a sample it was decided to select two educational divisions out of five divisions in Karnataka state and five districts from the two divisions. From each district, at least 10 schools each at primary and secondary levels and five schools at senior secondary level to draw 40 primary

teachers and 30 teachers each at secondary and senior secondary levels were to be selected randomly. It was also planned for representing all subjects to select one teacher each of language, mathematics and/or science, and social science from each of the selected secondary and senior secondary schools. Thus, hundred teachers were to be selected from each of the five districts there by making the sample size of 500 teachers across locale, levels and subject taught. Districtwise sample planned and obtained is given below:

District	Sample	
	Planned	Obtained
Belgaum	100	98
Dharwad	100	85
Mandya	100	101
Mangalore	100	102
Mysore	100	85
Total	500	471

Thus the obtained sample is 94.2% of the planned, which means the loss in size of sample is negligible both in total as well as district-wise. Thereby, there is no distortion in representing each of the five districts in the sample drawn for the study. Planned and obtained sample for representing teachers at different levels of school education is given below:

Level	Sample	
	Planned	Obtained
Lower and Upper Primary	200	230
Secondary	150	156
Senior Secondary	150	85

It can be seen that the representation of teachers at senior secondary level is not as per plan. This is due to the fact that the teachers were not available in the number expected at the time of data collection and that the senior secondary schools are spread over a large area.

The composition of the sample in terms of locale is, rural 276(58.6%) and urban 195(41.4%). There were 289(61.4%) male teachers and 182(38.6%) female teachers in the sample. The sample also gives representation to levels of background variables-age, experience and qualification.

2.3 TOOLS FOR THE STUDY

The primary data for the study consists of perceptions of teachers working at different levels of school education on various issues related to school curriculum. It was planned to collect the data through structured questionnaires. As per the research design planned at the national level, three questionnaires were to be used, one each related to Language Education, Science and Mathematics Education and Social Science Education. Accordingly, the core team of the NCERT prepared three questionnaires. These questionnaires were sent to RIEs for adoption. However, the project team of this study at RIE Mysore decided to use one more questionnaire dealing with general issues of school curriculum and to restructure the three questionnaires referred above.

In all the questionnaires, it was decided to use either selection- type or supply-type of questions. The selection-type of questions includes Yes/No-type questions providing for a list of items to be checked and those providing for three-point scale for response.

Questions seeking suggestions on curricular issues were open-ended. The questionnaires, originally prepared in English were translated in to Kannada.

A brief description of each of the questionnaires is given in the following sub-sections:

2.3.1 Questionnaire on General Issues

This questionnaire was developed to collect information pertaining to various general issues/problems/concerns related to school curriculum. Questions were prepared and arranged under broad issues related to:

- All-round development of a child,
- Development of values,
- Contextuality of textbooks,
- Promotion policy,
- Continuous and comprehensive evaluation,
- Non-cognitive areas of curriculum,
- Structure of school education,
- Homework/home assignment,
- Minimum levels of learning, and
- Weightages to different subjects at different levels.

There are twelve main items in this questionnaire.

2.3.2 Questionnaire on Language Education

The questionnaire on Language Education consists of questions covering issues on:

- Implementation of three language formula,
- Study of English as a compulsory language,
- Appropriate level for introduction of English,
- Appropriate level for introduction of third language and number of years of its study,
- Aspects of language to be taught in second and third languages,

- Teaching of foreign language in place of Hindi or a modern Indian language,
- Introduction of classical languages,
- Language (English) skills to be taught,
- Teaching of English grammar,
- Approaches for teaching English,
- Reading material in language textbooks,
- Qualification of teachers to teach languages,
- Objectives of teaching English,
- Medium of instruction at different levels of school education,
- Quality of text books English as first, second and third language, and
- Exercises and activities in language textbooks.

2.3.3 Questionnaire on Science and Mathematics Education

This questionnaire was designed to ascertain opinion of teachers on issues related to existing Science and Mathematics curricula including practices being followed in transacting them. The questionnaire consists of 18 items 7 on Mathematics curriculum, 6 on Science curriculum and 5 on both.

The questions on mathematics curriculum cover issues on:

- Adequacy of oral mathematics at primary level,
- Mathematics background required for teaching it at primary level,
- Differentiated mathematics courses for students at secondary and senior secondary levels,

- Need for mathematical laboratory,
- Practical examination in mathematics at secondary and senior secondary levels,
- Adequacy of mathematics to study other subjects and to solve problems of day-to-day life, and
- Instructional strategies for teaching theorems in geometry.

The items on Science curriculum cover issues such as:

- Practice of teaching EVS in classes III to V,
- Science as a compulsory subject upto secondary,
- Approaches to teaching of Science at secondary level,
- Science background for teaching it at primary level,
- Relevance of Science curriculum to understand societal issues, and
- Development of Scientific skills and experimentation.

Issues concerning both Science and Mathematics curricula covered by the questions include:

- Science and Mathematics as compulsory subjects unto secondary level,
- Use of calculators in Science and Mathematics during examinations,
- Load of mathematics & science curriculum at different levels,
- Stress and anxiety among students caused by curriculum and remedial steps required to reduce stress and anxiety, and
- Suggestions to improve science and mathematics curricula.

2.3.4 Questionnaire on Social Science Education

This questionnaire consists of fourteen major items covering issues related to:

- Subjects required to have been studied to teach social studies,
- Need for Social Studies laboratory and practical in Geography,
- Coverage of Socio-cultural issues of present day India in the curriculum,
- Appropriateness of curriculum to develop sensitivity to socio-cultural issues,
- Coverage of different areas of Social Science in the curriculum,
- Weightages to different areas of Social Science,
- Approach to teaching of Social Sciences
- Load of Social Science curriculum at different levels,
- Adequacy of Social Science curriculum at secondary level,
- Coverage of core curricular components,
- Relevance of learning Social Science at +2 level by students of Science stream and vice-versa,
- Relevance of studying all areas of Social Science at +2 level, and
- Extent of attainment of objectives in Social Science curriculum.

The questionnaires are presented in Appendix-A.

2.4 DATA COLLECTION AND ORGANISATION

As mentioned earlier, the study envisaged collecting opinion of teachers at each level of school education about issues concerning school curriculum for all levels. Also it was planned that each subject teacher would respond to issues related to other subjects. This means that every teacher in the sample was required to answer to all the four questionnaires. In order to avoid loss of data due to a teacher not being administered/responded to any of the questionnaires if administered one questionnaire after another, all the questionnaires along with the Performa seeking identification data were pinned together as a booklet. Care was taken to ensure that each booklet contained all the questionnaires in complete and clear print.

The task of collection of data from the sampled teachers from about 125 schools spread over 5 districts in Karnataka was enormous. As the study was time bound, it was decided to collect data by administering the questionnaires in person by members of team of RIEM faculty selected for the purpose. The team consisted of five faculty members including two members of the project team. Each member of the team was assigned a district each for collection of data. Before undertaking the task, the team members had a thorough discussion with other members of the project team about contact person, sampling procedure to be followed, tools and their administration including English equivalent to the terms in Kannada, and response pattern. The DDPIs, Principals of DIETs and Heads of Schools were officially informed in advance about the project and the kind of cooperation required to them.

The team members visited the districts allotted to them as per the schedule for data collection and administered the questionnaires to teachers.

The data collected through the questionnaires from teachers were coded and entered as per the requirements of Excel/SPSS software. The non-responses to items were entered as zero. The project team members and a few Research Scholars of the Department of Education did the job of data entry in the RIEM

Computer Cell. In order to improve the quality of data, steps were taken to detect and rectify wrong entries, wrong coding, shifting of field, no response etc.

2.5 THE ANALYSIS OF DATA

The data collected were analysed using descriptive statistical techniques mainly of frequency and percentages. These techniques were considered appropriate since the purpose for using them was only to consolidate the perceptions. Further. It may be recalled that the tool consisted of three types of items as mentioned under section 2.3. For the first type of item i.e. Yes/No type, only the 'Yes' responses have been consolidated. The responses of the second category of items, namely, checklist type have been consolidated as the number of teachers responding to an item in the list. The responses made on the last type of items (three-point scale) have been consolidated under each of the three categories. Also, for all items, percentage is calculated out of number responding to an item rather than the total size of the sample or sub-sample.

CHAPTER III

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with analysis and interpretation of perception of teachers related to general curricular issues and issues related to language, science and mathematics, and social science curricula at different levels of school edcation.

3.1 PERCEPTION OF TEACHERS ON GENERAL CURRICULAR ISSUES

Issues relating to curriculum may be viewed broadly as those, which are general in nature and concern all teachers and those, which concern teachers teaching a specific subject. The general issues were separated out for the study of perceptions from the subject related issues. Perceptions of all teachers in the study have been obtained on each of these general issues and have been analyzed in terms of the background variables. The tool used for this purpose is provided in the Appendix.

3.1.1 Effectiveness of the Existing Curriculum in Terms of All-round Development of Children

The goal of school education is to ensure the all-round development of children. All-round development consists of the development of children in the cognitive, affective and psychomotor domains. Teachers were asked to rate the extent to which development in these three domains is attained through the existing curriculum on a three-point scale consisting of 'not at all' 'to some extent' and 'to a large extent'.

Table 3.1.1: Perception of Teachers on All-round Development of Children

Level of teaching	Cognitive	Emotive	Psychomotor
Lower Primary	39.27	36.65	37.17
Upper Primary	36.45	21.96	21.29
Secondary	25.15	10.43	9.82
Senior Secondary	13.87	2.89	14.45

The general opinion of the teachers is that the existing curriculum is not fully effective in attaining all-round development of children since a majority of teachers (64% to 68%) opine that the development of children in the three domains is attained 'to some extent'. In other words, not even 30% of the teachers think that the existing curriculum ensures all-round development of children.

Other observations that can be made regarding teacher perception on this issue are: (a) Cognitive development is better addressed to by the school curriculum compared to other domains. (b) emotional development is the most neglected of the three domains, (c) only at the lower primary level, the teachers think that the attainments in the three domains are almost equal (39.27%, 36.25%, 37.17%), and (d) the effectiveness of the school curriculum in terms of development of the child is viewed to be diminishing as the child proceeds from lower primary to senior secondary level, in all the three domains. In other words, 'the law of diminishing returns' seems to be applicable to the curriculum as well.

3.1.2. Common Core Components

The curriculum, apart from the all-round development of an individual, prepares him or her to interpret and uphold the socio-cultural, scientific and spiritual ethos of the nation. A national curriculum, though implemented in several contexts of schooling, aims to provide a national identity to the students through schooling. Such components in a curriculum may not specifically fall in one or the other subjects taught but may find place as a core concern in implementation. Such concerns are value loaded and hence are also referred as core curricular values. The present curriculum envisages developing in its citizens 12 such values.

It was felt that the teacher's perception about the development of these values as a result of schooling could be an important input to the efforts at curriculum review. The perceptions of teachers were obtained on a 3-point scale ranging from "not at all" to "to a large extent". The data thus obtained has been analysed in the context of the values, location, sex and subject taught. The results are provided in the following tables.

Table 3.1.2(a): Perception of Teachers on Development of Core Values: Level-Wise

Core Values	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
India's Freedom Movement	1.8	7.6	8.0	2.1	19.5
Constitutional Obligations	1.7	3.3	4.0	1.7	10.6
National Identity	4.5	6.1	4.5	2.3	17.4
Our Cultural Heritage	7.2	8.1	5.3	2.8	23.4
Equality of Sexes	9.5	11.1	5.3	4.2	30.0
Protection of Environment	10.1	13.1	10.6	3.6	37.4
Egalitarian, Democracy & Secularism	4.7	7.8	6.8	2.4	21.7
Removal of Social Barriers	3.1	5.0	4.5	2.4	14.9
Population & Small Family Norm	5.7	9.1	9.8	4.8	29.4
Human Rights	4.7	6.3	7.4	4.0	22.3
Scientific Temper	5.8	7.6	5.5	4.8	23.8
National Integration	4.9	8.5	6.8	2.3	22.5

1. If all teachers, irrespective of the level at which they are teaching is taken as a group, then, in their opinion the present school curriculum has not succeeded in developing the values in any of the twelve core curricular areas. This is evident from the fact that majority (50%) of teachers felt that none of the twelve values is developed in children to a large extent.

2. A sizeable portion of teachers think that the values pertaining to 'Equality of Sexes' and 'Protection of Environment' are developed through the present curriculum to a large extent (30.0% and 37.4%).

3. The values which are considered to be developed by 20% to 30% teachers are 'Our Cultural Heritage', 'Egalitarianism', 'Democracy and Secularism', 'Population and Small Family Norm', 'Human Rights', 'Scientific Temper', and 'National Integration'.

4. A small portion of teachers (less than 20%) think that the values pertaining to 'India's Freedom Movement', 'Constitutional Obligations', 'National Identity', 'Removal of Social Barriers'.

Table 3.1.3(b): Perception of Teachers on Development of Core Values: Locale-Wise & Gender-Wise

Core Values	Locale		Gender	
	Rural	Urban	Male	Female
India's Freedom Movement	10.5	8.9	11.4	8.0
Constitutional Obligations	5.2	5.4	6.1	4.5
National Identity	10.3	7.0	9.9	7.5
Our Cultural Heritage	14.2	9.3	13.0	10.4
Equality of Sexes	18.9	11.1	16.2	13.9
Protection of Environment	23.2	14.2	19.8	17.6
Egalitarian, Democracy & Secularism	12.5	9.2	13.0	8.7
Removal of Social Barriers	8.1	6.9	7.6	7.3
Population & Small Family Norm	17.3	12.0	18.6	10.7
Human Rights	11.6	10.7	11.9	10.5
Scientific Temper	12.7	11.1	13.4	10.4
National Integration	13.1	9.4	13.8	8.7

A further analysis was undertaken to study the perception of teachers across level, locale and sex. It was revealed that

1. The contribution to the perception was predominantly from the upper primary and secondary level teachers.

2. The perception did not vary much between the upper primary and secondary teachers.

3. Between the lower primary and senior secondary teachers whose contribution to the perception is very less, the senior secondary teachers view that the core values are not developed. Since they deal with students who are in the terminal level of school education, their perception assumes a greater significance.

4. Between rural and urban teachers, greater portion of rural teachers think that the values are developed than their urban counterparts.

5. The perceptions of rural and urban teachers are similar with respect to the values pertaining to 'Constitutional Obligations', 'Human Rights' and 'Scientific Temper'.

6. The differences in perception are more pronounced between rural and urban teachers on values pertaining to 'Protection of Environment', "Equality of Sexes', 'Our Cultural Heritage', 'Population and Small Family Norm', and 'National integration' in that order.

7. Between male and female teachers, the male teachers perceive consistently that the core values are developed through the existing curriculum. However, their perceptions were similar on values pertaining to 'Constitutional Obligations', 'National Identity', Protection of Environment', 'Removal of Social Barriers' and 'Human Rights'.

8. The difference in perception of male and female teachers are more pronounced on values pertaining to 'Population and Small Family Norm', 'National Integration', 'Egalitarianism, 'Democracy and Secularism', 'India's Freedom Movement' and 'Scientific Temper' in that order.

Core values are an integral part of the curriculum and hence are to be developed through the transaction of curriculum. They are not taught as separate subjects and hence they are to be developed in integration with the teaching of different school subjects. Accordingly, certain values are more amenable to certain subjects. It is in this background that a study of the perception of teachers teaching different school subjects was made regarding the development of values contained in the core curricular areas. Results obtained are as follows.

Table 3.1.2(c): Perception of Subject Teachers on Development of Core Values

	Languages	Science	Social Studies
India's Freedom Movement	30.8	18.6	33.3
Constitutionnel Obligations	15.6	05.0	19.7
National Identity	16.3	10.0	18.3
Our Cultural Heritage	21.3	10.7	23.8
Equality of Sexes	22.7	11.7	28.7
Protection of Environment	35.6	30.8	32.3
Egalitarian, Democracy &Secularism	26.4	11.7	25.8
Removal of Social Barriers	13.6	15.0	11.3
Population & Small Family Norm	36.7	25.0	31.7
Human Rights	27.6	16.7	26.2
Scientific Temper	19.8	18.5	20.0
National Integration	25.0	13.3	25.8

1. The Science teachers are more skeptical of the development of values in children where as the social science teachers are more contented with the existing curriculum in so far as the development of values are concerned.

2. More than a quarter of language teachers think that the values, pertaining to 'India's Freedom Movement', 'Protection of Environment', 'Egalitarianism, Democracy and

Secularism', 'Population and Small Family Norm, 'Human Rights' and 'National Integration' are developed through the curriculum.

3. More than a quarter of science teachers think that the values pertaining to 'Protection of environment' and 'Population and Small Family Norm' are developed through the curriculum.

4. More than a quarter of social science teachers think that the values pertaining to 'Constitutional Obligation', 'Equality of Sexes', 'Protection of Environment', 'Egalitarianism, Democracy and Secularism', 'Population and Small Family Norm', 'Human Rights' and 'National Integration' are developed through the curriculum.

3.1.3 Contextuality of Textbooks

A national curriculum framework is rather suggestive than prescriptive because at the time of implementation it needs to be made local specific. This is particularly important because the learning in a school could be meaningful if the learner is able to relate to the local context. This would also enable the learner to be more functional as a part of the society. Further, abstraction in learning needs to take place gradually as one progress through general education to specialisation.

The teachers were asked to indicate the extent to which the present textbooks are contextualised to the local socio-cultural and physical environs. The results obtained are as follows.

Table 3.1.3(a): Percentage Teachers who Perceive that the Textbooks at Different Levels are 'Not at all' Contextualised

Levels of Teaching	Textbooks of			
	Lower Primary	Upper Primary	Secondary	Senior Secondary
Lower Primary	10.0	--	--	1.9
Upper Primary	17.3	7.8	12.8	21.4
Secondary	23.4	11.1	28.6	13.6
Senior Secondary	20.0	17.1	36.2	33.8
Total	28.3	13.9	34.8	23.0

Table 3.1.3(b): Percentage Teachers who perceive that the Textbooks at Different Levels are Contextualised 'To some extent'

Levels of Teaching	Textbooks of			
	Lower Primary	Upper Primary	Secondary	Senior Secondary
Lower Primary	52.5	72.0	69.2	53.8
Upper Primary	52.9	68.0	76.6	64.3
Secondary	54.5	75.3	60.5	46.8
Senior Secondary	66.7	65.9	79.5	51.3
Total	55.2	70.2	67.3	53.3

Table 3.1.3(c): Percentage Teachers who perceive that the Textbooks at Different Levels are Contextualised 'To a large extent'

Levels of Teaching	Textbooks of			
	Lower Primary	Upper Primary	Secondary	Senior Secondary
Lower Primary	37.5	26.1	30.8	38.5
Upper Primary	29.8	24.2	10.6	14.3
Secondary	22.1	13.6	10.9	17.0
Senior Secondary	13.3	17.1	6.8	15.0
Total	27.5	20.4	11.2	17.0

1. Teachers, irrespective of the level at which they are teaching, predominantly consider that the present textbooks at all levels of school education accommodate local contexts of learners only 'to some extent' (46.8% to 79.5%).

2. The percentage of teachers who are not at all in agreement that the textbooks are contextualised ranges from 29.7% for senior secondary level textbooks to 9.5% for higher primary level.

3. If the perception of teachers who think that the textbooks are contextualised 'to a large extent' is taken into account, then the textbooks at the lower primary level are most contextualised (27.5%) followed by higher primary (20.4%), senior secondary (17%) and secondary (11.2%).

4. More than 25 percent of teachers at the lower primary level (26.1% to 28.5%) think that the textbooks at all levels are contextualised 'to a large extent'. Their perceptions are most favourable to the issue. Whereas, the senior secondary

teachers least agree that the textbooks at different levels are contextualised (6.8% to 17.1%).

5. According to teachers at different levels, the textbooks at secondary level are the least contextualised.

6. At all levels, teachers do not consider the textbooks they teach are the most contextualised. In their view, those at some other level are more contextualised than the books they teach.

3.1.4 Examination Policy

Examinations and assessments are an essential feature of curriculum transaction for evaluating the extent to which the objectives of a curriculum are attained. However, a new entrant to a school, thus felt by some, should not be subjected to examination and assessment if they mean detention of some children who have not attained specified objectives. Detention, it is also felt could shy away some children from the school thereby increasing the dropout rate. The state of Karnataka is one of those states, which borrows no detention policy at primary stage. Teachers were asked to show their agreement to the policy. The data have been analysed according to the level of schooling at which a respondent is teaching. Further, those respondents who agreed with the policy were asked to indicate the class up to which the policy is to be implemented. Whereas those who did not agree with the policy are asked to indicate when the examination for promotion needs to be conducted – annually or at the end of each stage of schooling.

The 12 years of general education are divided into 4 stages namely – lower primary, upper primary, secondary and senior secondary. The existing system of examination also gives differentiate status to the examinations conducted at the end of an academic year. The public examinations conducted at the terminal year of a particular level of education are viewed as essential for comparability in the alignment of students completing different levels of schooling. In the state of Karnataka a public examination has been introduced at standard VII, which is terminal year of the upper primary level. Teachers were asked to indicate their agreement to the conduct of this public examination.

Table 3.1.4(a): Percentage of Teachers Favouring Continuation of 'No Detention Policy' at Primary Stage - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Yes	13.4	28.9	33.6	24.2	43.4

1. A majority of teachers (56.6%) are of the opinion that the 'not detention policy' needs to be stopped.

2. The rural teachers (58.4%) are predominantly in favour of continuing with the 'no detention policy' compared to their urban counterparts (41.5%).

3. Interestingly, the secondary level teachers (33.6%) are in most favour of continuing with the policy. Whereas, the lower primary school teachers (13.4%) have least favoured the policy.

A large percentage of teachers who favour the 'no detention policy' have opined that it should be continued upto standard IV (45.6%). The next preference in opinion is for extending the policy up to VII standard (17.4%) followed by that upto II standard (14.3%).

Table 3.1.4(b): Percentage of Teachers Favouring Public Examination for Promotion of Students from Upper Primary to Secondary Stage - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Percentage	19.0	32.7	30.6	17.8	78.5

The teachers are highly in favour of conducting the public examination at standard VII (78.5%). This perception is particularly strong amongst the upper primary (32.7%) and the secondary (30.6%) school teachers who are essentially connected with this examination.

3.1.5 Continuous and Comprehensive Evaluation

The National Policy of Education made a strong emphasis at introduction of continuous and comprehensive evaluation at school level. This was particularly felt in the context of the stated objective of schooling namely all-round development of an individual. Continuous and comprehensive evaluation means that effort at assessing

public testing the developmental direction of learners needs to be continuous than sporadic or at long intervals of time. It also means that the excessive emphases on cognitive areas of curriculum need to be reduced by including the non-cognitive development of a learner under the rubric of evaluation. The teachers were asked to indicate the extent to which continuous and comprehensive evaluation is progressed at different levels of school education on a 3-point scale. The data have been analyzed in terms of location and level.

Table 3.1.5: Percentage of Teachers Favouring Public Examination for Promotion of Students from Upper Primary to Secondary Stage - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Percentage	19.0	32.7	30.6	17.8	78.5

The responses of teachers, it was found, were largely from those who belonged to that level.

1. In the opinion of teachers representing all levels of school education, continuous and comprehensive evaluation is practiced at the lower primary (75.4%) and upper primary (69.8%) levels whereas, there are almost as many teachers who say that it is practiced at the higher levels as those who say that it is not practiced.

2. A very large number of lower primary teachers (87.7%) and upper primary teachers (87.3%) opine that continuous and comprehensive evaluation is practiced at the lower primary level. Whereas secondary (61.9%) and senior secondary (75%) teachers feel strongly that it is not practiced at the lower primary level.

3. At the upper primary level, the continuous and comprehensive evaluation (CCE) is very much in practice according to both the upper primary (85.5%) and lower primary (81.25%) teachers.

4. A very large number of secondary school teachers, said that the CCE is 'not in practice' at the secondary level (73.7%) and senior secondary level (80%). This perception was not agreeable to the teachers at lower levels.

5. A very large number of senior secondary teachers, state that the CCE is 'not in practice' at the senior secondary level (82.6%). Whereas, this view is not held by the teachers at the lower levels.

3.1.6 Minimum Levels of Learning

One of the significant changes that the National Policy of Education 1986 brought about to the curriculum was the introduction of Minimum Levels of Education. It was argued that a specification of MLLs was essential for equality and improvement of quality in school education. Efforts were made to specify them up to standard V and the states took initiative to implement them including efforts at revision of textbook. However, disagreement about the likely influence of MLLs in improving the quality of learning exists among the educational functionaries. The teachers were asked whether they think that the MLLs have influenced positively the quality of learning in the schools. Those saying 'Yes' were asked whether the specification of MLLs needed to be made at class beyond 5. Whereas the teachers saying 'No' were asked Why they thought the MLLs did not improve the quality of learning in schools.

Table 3.1.6(a): Opinion Of Teachers Regarding Effect of MLLs on Quality of Learning - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Yes	76.9	66.4	60.0	75.3	69.9

Table 3.1.6(b): Opinion Of Teachers Regarding Effect of MLLs on Quality of Learning – Locale and Gender

	Locale		Total	Gender		Total
	Rural	Urban		Male	Female	
Yes	66.5	71.4	69.9	64.8	74.8	69.9

Table 3.1.6(c): Opinion Of Teachers Regarding Effect of MLLs on Quality of Learning – Age-wise

Age	1	2	3	4
Yes	65.1	71.6	74.0	57.6

1. A majority of teachers (69.9%) have opined that the specification of MLLs as a favourable effect on the quality of learning.
2. This perception was most amongst the Lower Primary School Teachers (76.9%) and the Senior Secondary Teachers (75.3%).

3. The urban (71.4%) teachers perceived the effect on quality more than the rural (66.5%) teachers.

4. The teachers in the highest age bracket perceived the effect on quality least (57.6%) as compared to the category lower than them (74%).

5. Female teachers perceived the effect on quality more than the male teachers.

Table 3.1.6(d): Percentage of Teachers Favouring Formulation of MLLs for Higher Classes - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Yes	87.1	71.4	85.2	17.4	81.9

Table 3.1.6(e): Percentage of Teachers Favouring Formulation of MLLs for Higher Classes – Locale- and Gender-wise

	Locale		Gender		Total
	Rural	Urban	Male	Female	
Yes	81.0	83.5	82.7	80.7	81.9

1. Teachers have strongly expressed the need for specification of MLLs in Higher classes (81.9%).

2. The Senior Secondary teachers have expressed the need most (88.5%) and the urban primary teachers have expressed the need least (71.4%).

3. The rural teachers perceived the need less than their urban counterparts.

4. The male teachers perceived the need more than the female teachers.

Table 3.1.6(f): Opinion Of Teachers Regarding Reasons for Lack of Influence of MLLs on Quality of Learning- Level-wise

	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Lack of knowledge of MLLs	11.32	26.40	47.16	15.09	15.77
Lack of proper training in MLLs	18.52	34.56	25.92	20.98	24.10
Ineffective implementation of MLLs	6.89	32.75	36.20	24.13	17.26
Insufficient instructional time	15.90	36.36	31.81	15.90	13.09
Insufficient resources	17.18	31.25	20.31	31.25	19.04

Teachers, at all levels taken together, consider that lack of proper training in MLLs (24.10%), insufficient resources (19.04%), ineffective implementation of MLLs (17.26%), lack of knowledge of MLLs (15.77%) and insufficient instructional time (13.09%) are the reasons for lack of desired influence of MLLs on quality of learning. The lower primary teachers who ought to be implementing the MLL approach opine that lack of proper training in MLLs (18.52%), insufficient resources (17.18%), and insufficient instructional time (15.90%) are the reasons for lack of desired influence of MLLs on quality of learning.

3.1.7 Inclusion of Non-cognition Areas

A curriculum framework designed for the all-round development of a learner cannot be biased to any one or the other dimension of development while neglecting some. The present school curriculum framework envisages that Work Experience, Art Education and Health & Physical Education are provided due importance and are considered integral parts of the curriculum. However, in a competitive environment where verbal and written expressions are used as a yardstick for attainment, these areas which are non-cognitive by nature, not because they do not need cognition but because the expression of attempt in them are more qualitative than quantitative, have been viewed as neglected in curriculum transaction. The teachers were asked to indicate the status vis-à-vis a non-cognitive areas at the 4 levels of schooling.

Further, the teachers were asked whether sufficient resources and facilities are available in schools to teach the above-mentioned subjects. Those who said 'No' were asked to specify the type of facilities they suggest for providing at the 4 levels of schooling. The data analyzed in the context of the background variables has been provided below.

There seems to be a difference in the views with respect to the existing content of the non-cognitive areas in the curriculum. If some suggest that what is present is appropriate, there are others who would say that either it needs to be increased and hence recommend additional content or that it needs to be reduced. Some others are of the view that the existing content is out dated and need to be replaced with the content

appropriate for the changing times. Teachers were asked to show their opinion about the content of non-cognitive areas.

1. A large number of teachers think that the subjects under the non-cognitive area are not a part of the curriculum in practice, as evidenced from the fact that a fairly small percentage of teachers have responded favourably.

2. However the teachers at the upper primary level, as compared to the teachers at other levels, consider that Work Experience, Art Education and Health and Physical Education form an integral part of the curriculum in practice.

3. Health and Physical Education is perceived to be more in practice as an integral part of curriculum than the other two non- cognitive areas as evidenced from the fact that a larger percentage of upper primary teachers and that a considerably greater number of teacher in general have perceived it to be so. However, this trend in perception is applicable only to the lower primary, upper primary and secondary levels. Whereas it is de-emphasized at the senior secondary level.

Table 3.1.7(a): Percentage of Teachers Opining the Need for Revising Content of Non-Cognitive Subjects - Levelwise

	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Lower Primary	27.4	36.3	21.9	14.4	31.7
Upper Primary	9.3	42.6	31.0	17.1	28.0
Secondary	2.6	16.5	60.9	20.0	25.0
Senior Secondary	4.3	20.0	28.6	47.1	15.3

Table 3.1.7(b): Percentage of Teachers Opining the Need for Revising Content of Non-Cognitive Subjects - Localewise

Locale	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Rural (275)	72.6	70.5	43.5	40.0	59.8
Urban (185)	27.4	29.5	56.5	60.0	40.2

1. An overwhelming portion of teachers have expressed that the existing content of the non- cognitive subjects need to be revised in accordance with the changing times.

2. The secondary school teachers perceive the need for revising the content most (90%), whereas the higher primary teachers perceive the need least (76.5%).

3. Both rural and urban teachers perceive the need for revision to the same extent (82.1% and 84%).

Table 3.1.7(c): Percentage of Teachers Opining the need for the teachers of non-cognitive areas at Different Stages- Levelwise

Level of Teaching	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Lower Primary	23.4	31.3	28.9	16.4	32.1
Upper Primary	10.4	40.9	27.0	15.7	28.8
Secondary	5.6	16.7	55.6	22.2	22.6
Senior Secondary	1.5	22.7	31.8	43.9	16.5

Table 3.1.7(d): Percentage of Teachers Opining the need for the teachers of non-cognitive areas at Different Stages - Localewise

	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Rural	68.0	69.6	45.6	45.5	59.7
Urban	32.0	30.4	54.4	54.5	40.4

1. If the overall perception of teachers is taken into account, there is a greater need for the teachers of non-cognitive areas at the primary stage than at the higher levels.

2. Except for the teachers at the lower primary level, the teachers at the other levels think that the need for teachers of non-cognitive areas is most at the level at which they are teaching. At the lower primary level, however, the policy is of having a single teacher for a class.

3. A higher percentage of rural teachers (59.65%) perceive the need for an additional teacher than the urban teachers.

4. More rural teachers at the lower primary and upper primary levels (68% and 69.6%) and more urban teachers at the secondary and senior secondary level (54.4% and 54.5%) perceive the need for additional teacher.

Table 3.1.7(e): Percentage of Teachers Opining the need for infrastructure for teaching of non-cognitive areas at Different Stages - Levelwise

Level of Teaching	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Lower Primary	28.5	33.3	22.4	15.8	32.0
Upper Primary	10.9	40.9	28.5	19.7	26.6
Secondary	4.8	14.3	61.9	19.0	24.5
Senior Secondary	8.0	16.1	21.8	54.0	16.9

Table 3.1.7(f): Percentage of Teachers Opining the need for infrastructure for teaching of non-cognitive areas at Different Stages - Localewise

Locale	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Rural	73.3	68.6	52.4	43.7	61.9
Urban	26.7	31.4	47.6	56.3	38.1

1. The need for infrastructure is felt most at the lower primary level to the least at the senior secondary level.

2. Teachers other than those at the lower primary level have expressed greater need for additional infrastructure at the level at which they are teaching.

3. The need for infrastructure is more in the rural schools upto secondary level and in the urban schools at the senior secondary level. This could be because the senior secondary schools are located in urban areas more than the rural areas.

Table 3.1.7(g): Percentage of Teachers Opining the need for Student Reference Material in non-cognitive areas at Different Stages-Level-wise

Level of Teaching	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Lower Primary	30.2	30.2	26.7	12.9	28.1
Upper Primary	9.6	48.1	24.0	18.3	25.2
Secondary	4.4	17.7	57.5	20.4	27.4
Senior Secondary	5.0	22.5	22.5	50.0	19.3

Table 3.1.7(h): Percentage of Teachers Opining the need for Student Reference Material in non-cognitive areas at Different Stages - Localewise

Locale	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Rural	69.0	67.3	54.9	47.5	60.5
Urban	31.0	32.7	45.1	52.5	39.5

1. Teachers at all levels of education think that there is a greater need for student reference material in non-cognitive areas at the school level at which they are teaching.

2. The need for students' reference material is more at the primary stage (53.3%) than at the senior and senior secondary stage (46.7%).

3. The need for students' reference material is felt more by the rural teachers (60.5%) than the urban teachers (39.5%).

4. The need for Teacher's Handbook in non-cognitive areas is felt most at the lower primary level and least at the senior secondary level.

5. The need for Teachers' Handbook is expressed more strongly by the secondary school teachers for the secondary level (60.9%) than any other category of teachers for any other level.

6. Rural teachers have felt the need for Handbook more than the urban teachers.

Table 3.1.7(i): Percentage of Teachers Opining the need for Guidelines for Teaching non-cognitive areas at Different Stages-Levelwise

Level of Teaching	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Lower Primary	25.5	36.6	21.4	16.6	29.8
Upper Primary	8.7	47.6	27.0	16.7	25.9
Secondary	5.6	15.9	60.3	18.3	25.9
Senior Secondary	8.9	20.0	22.2	48.9	18.4

Table 3.1.7(j): Percentage of Teachers Opining the need for Guidelines for Teaching non-cognitive areas at Different Stages- Localewise

Locale	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Rural	71.0	69.0	46.8	51.1	60.6
Urban	29.0	31.0	53.2	48.9	39.4

1. The need for guidelines for teaching is felt most by the secondary school teachers for the secondary level (60.3%) than any other category of teachers for any other levels.

2. If the perception of all teachers is taken into account, the need for teaching guideline is in a decreasing order from lower primary to senior secondary level.

3. The rural teachers feel the need for teaching guidelines (60.6%) more than the urban teachers (39.4%).

Table 3.1.7(k): Opinion of Teachers Regarding Resource Requirement for Non-cognitive Areas at Different Levels

Level	Type Resource Requirement				
	Teacher	Equipments Infra-structure	Student Reference Material	Teacher's Handbook	Guidelines for teaching
Lower Primary	32.9	32.0	28.1	31.7	29.8
Upper Primary	28.8	26.6	25.2	28.0	25.9
Secondary	22.6	24.5	27.4	25.0	25.9
Senior Secondary	16.5	16.9	19.3	15.3	18.4
Total	399	515	413	460	487

1. If the total number of teachers opting to respond in affirmative is taken into account, 'Equipments and Infrastructure' is the most felt need for improving instruction in non-cognitive areas and the need for an additional teacher is the least.

2. The trend for resource support, in general is maximum at the lower primary level and the need is felt less and less as one move up the levels.

3.1.8 Structure of School Education

The National Curriculum Framework is a part of the National System of Education with a nationally accepted structure of school education. The Government of India accepts and advocates the 5+3+2 structure for the 10 years of general education. Education being the concurrent subject, some states have opted for a structure other than the national structure. Karnataka for example follows a 4+3+3 structure. A structure is not merely an addition of numbers but an expression of the perception of growth and development of a child, which indicates the transition from one qualitative level to the other. Teachers were asked to show their agreement to the existing structure of 5+3+2. Those who said 'No' were asked to suggest the alternative structure and those saying 'Yes' were asked whether they recommend that it should be practiced uniformly by all states.

Table 3.1.8(a): Percentage of Teachers Who Agree with the Present Structure School Education - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Yes %	73.3	61.3	71.8	71.0	68.8

Table 3.1.8(b): Percentage of Teachers Who Agree with the Present Structure School Education - Locale wise

Locale	Rural	Urban	Total
Yes	65.4	73.6	68.8

1. A large majority of teachers agree with the existing structure of 5+3+2.
2. The upper primary school teachers have agreed to the existing structure least (61.3%) and lower primary school teachers have agreed most (73.3%).
3. The urban teachers (73.6%) are more in favour of the existing structure as compared to the rural teachers (65.4%).

Table 3.1.8(c): Percentage of Teachers Who Suggest 4+3+3 Structure for School Education - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Yes %	73.3	72.5	65.0	42.3	65.8

1. The teachers should have not agreed to the structure of 5+3+2 have opted for 4+3+3. Incidentally this structure is prevalent in the state of Karnataka and hence they have agreed with the existing structure rather opting for a change.
2. The senior secondary teachers have agreed with the structure of 4+3+3 the least (42.3%) and the lower primary school teachers have agreed with it the most (73.3%).
3. It was also found that 12% of the teachers have actually suggested 5+3+2 structure, which means that the agreement to the 5+3+2 structure is more than what has been mentioned above.
4. Rural teachers (67.5%) have opted for the alternate structure more than the urban teachers (62.5%).

Table 3.1.8(d): Percentage of Teachers Favouring Uniform Implementation of the Existing Structure School Education - Level-wise

Level	Lower Primary	Upper Primary	Secondary	Senior Secondary	Total
Yes	92.5	87.8	93.8	86.1	90.5

1. An overwhelming majority of teachers (90.5%) have suggested that the existing structure of school education must be implemented uniformly in all states.

2. The secondary (93.8%) and lower primary school teachers have favoured this suggestion more strongly than their counterparts at upper primary (87.8%) and senior secondary (86.1%) levels.

3. Both rural (90.2%) and urban (90.8%) teachers have expressed equally that the structure should be uniform in states.

3.1.9 Home work/Home assignment

Homework/Home assignment forms an extension of classroom teaching. This is also is an area of curriculum with considerable disagreement in opinions. It was due to such diversity in opinions that the Government of India constitutes a Committee to look into the load of the school bag especially at the primary stage. The teachers were asked to indicate whether home work/home assignment required to be given at different levels of school education and in different curricular areas. The data obtained have been analyzed for different subject areas, levels and location.

Table 3.1.9(a): Percentage of Teachers Favouring Homework in Different Subjects at Lower Primary Stage- Level-wise

Subject	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Language	30.6	34.7	21.1	13.6	242
Mathematics	32.7	38.1	20.8	8.4	202
Science	33.1	34.5	22.1	10.3	145
Social Science	34.9	38.0	17.1	10.1	129
Work Experience	32.6	33.7	24.7	9.5	95
Art Education	27.3	38.4	22.2	12.1	99
H & P Education	26.9	33.7	23.1	16.3	104

1. At the lower primary level, teachers have preferred homework/ home-assignment in the cognitive subjects than in the non-cognitive subjects.

2. Among the cognitive subjects, the order of preference for homework has been for language, mathematics, science and social science.

3. Among the non-cognitive subjects, the preference has been not as much varied as in the case of the cognitive subjects.

4. The Upper Primary school teachers perceive the need for giving home work most, whereas the Senior Secondary teachers perceive the need least.

5. Maximum difference of opinion between teachers at different levels was found with respect to Mathematics (8.4% and 38.1%), Social Science (10.1% and 38%) and Science (10.3% and 34.5%). Art Education and Work Experience also had greater differences of opinion than Health and Physical Education.

Table 3.1.9(b): Percentage of Teachers Favouring Homework in Different Subjects at Upper Primary Stage- Level-wise

Subject	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Language	9.5	46.8	30.9	12.7	220
Mathematics	10.6	46.9	28.6	13.9	245
Science	10.0	49.5	26.2	14.3	210
Social Science	10.6	50.3	25.1	14.0	179
Work Experience	10.6	44.4	28.2	16.9	142
Art Education	12.5	45.0	27.5	15.0	120
H & P Education	10.2	43.8	28.9	17.2	128

1. At the upper primary level, like in the case of the lower primary level, teachers have preferred homework/home-assignment in the cognitive subjects than in the non-cognitive subjects. However, the emphasis on homework in both cognitive and non-cognitive areas is more at the upper primary level than at the lower primary level.

2. Among the cognitive subjects, the order of preference is for mathematics than language. This is in contrast to that at the lower primary level where the emphasis for homework is on language.

3. The order of preference for homework at the upper primary level is mathematics, language, science and social science.

4. Among the non-cognitive subjects, teachers' favoured homework in the order of work experience, health and physical education, and art education.

5. Like in the case of lower primary level, teachers at the upper primary level as compared to those at other levels have favoured homework/home assignment being a part of the curriculum at upper primary level.

6. Maximum variation in preference for homework at Upper Primary level was found for Social Science (10.6% and 50.3%) followed by Science (10% and 49.5%) and Language (9.5% and 46.8%).

Table 3.1.9(c): Percentage of Teachers Favouring Homework in Different Subjects at Secondary Stage- Level-wise

Subject	Level of Teaching				Total N
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Language	4.7	19.3	60.8	15.2	171
Mathematics	4.5	19.1	59.3	17.2	204
Science	4.5	16.9	58.2	20.2	201
Soc. Science	6.0	16.9	59.0	18.1	166
Work Experience	2.4	16.7	54.8	26.2	126
Art Education	4.5	20.9	52.7	21.8	110
H & P Education	6.1	17.5	55.3	21.1	114

1. At the Secondary level preference for homework was most with respect to Mathematics and was followed by that for Science. Language that was most favoured at Lower Primary level occupies the third place at the secondary level.

2. The Secondary school teachers favoured most giving home work at the secondary level and the lower primary school teachers favoured home work at the secondary level the least.

3. Maximum variation in perception was found in Language (4.4% and 59.3%) followed by Mathematics (4.5% and 58.2%).

Table 3.1.9(d): Percentage of Teachers Favouring Homework in Different Subjects at Senior Secondary Stage- Levelwise

Subject	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Language	5.1	29.1	24.1	41.3	79
Mathematics	7.6	26.1	25.0	41.3	92
Science	8.0	26.4	25.3	40.2	87
Social Science	6.3	25.0	22.5	46.3	80
Work Experience	4.8	20.6	23.8	50.8	63
Art Education	8.6	22.4	20.7	48.3	58
H & P Education	8.2	16.4	27.9	47.5	61

1. The trend in preference for homework observed at the secondary level was also found for the senior secondary level. The preference was Mathematics, Science, Social Science, and Language in that order.

2. The senior secondary teachers favoured giving assignment the most as compared to the other teachers.

3. Maximum variation in perception existed in Social Science (6.3% and 46.3%) and Language (5.1% and 41.8%).

3.1.10 Weightage to Subjects in the Curriculum

A curriculum consists of several component subjects. These subjects may have differential role to play in the developments of an individual and also may have different levels of needs for a learner. Such a differential status of subjects under a curriculum gets reflected in the differential weightage assigned to a subject within a curriculum. It is also true that a subject given a particular weightage at one level of schooling may not require the same weight age at a different level of schooling. In a sense the subjects along with their weightage in a curriculum are an expression of the development of a learner. Teachers were asked whether they agree with the existing weightage of subjects. If they did not agree they were asked to show the weightage, which they would like to give to different subjects at different levels.

It can be observed from the table on weightages for different curricular subjects at the school level that the teachers have suggested some changes in the existing weightages given to different subjects. However, it may be noted that the aggregate percentage is more than 100. This would mean that at least some teachers have not redistributed the weightage properly. While increasing the weightage for a certain subject, they have not reduced from some other subject. Hence the figures are not accurate. The response obtained is useful only to the extent that we may know the trend of change in weightage.

Table 3.1.10: Opinion Of Teachers Regarding Weightage For Different Subjects At Different Levels

Subjects	Level of Teaching					
	Lower Primary		Upper Primary		Secondary	
	Present	Suggested	Present	Suggested	Present	Suggested
Languages	30	33.87	32	33.81	30	28.24
Mathematics	15	17.96	12	16.94	12	17.87
Science	15	16.18	12	15.36	12	18.62
Soc. Science	20	14.59	12	13.20	12	12.13
Work Exp.	10	8.05	12	10.03	12	9.55
Art Education	10	7.17	10	9.44	8	7.77
H & P Education.	10	9.31	10	9.51	8	9.15
Contempo-rary India	--	--	--	--	6	5.71
Total	100	107.13	100	108.29	100	109.04

1. At the lower primary level, the teachers have not favoured a shift in the relative importance of subjects in the cognitive area while assigning weightages to them.

2. The teachers have preferred a slight increase in weightage given to languages, mathematics and science while suggesting a reduction in weightage for social science, work experience and physical education and art education.

3. Among the subjects in non-cognitive area, the teachers have preferred a differential weightage for the three subjects instead of equal weightage as in the present curriculum. The order of importance is health and physical education, work experience, art education.

4. At the higher primary level, the teachers have favoured discrimination among subjects while assigning weightages. In the present curriculum, mathematics, science, social science and work experience have equal weightage whereas the teachers have favoured a differential weightage to them while maintaining the order for assigning different weightages.

5. An increase in weightage is favoured for languages, mathematics, science and social science with the maximum increase suggested for mathematics.

6. The weightages for subjects under the non-cognitive area have been reduced with a maximum reduction suggested for work experience.

7. At the secondary level, teachers have suggested a decrease in the weightage for languages while suggesting an increase in the weightage for mathematics, science and social science. The maximum increase is suggested for science.

8. While suggesting a decrease in weightage for work experience, art education and contemporary India, the teachers have favoured an increase in the weightage given to health and physical education at the secondary level.

3.2 PERCEPTION OF TEACHERS ON LANGUAGE EDUCATION IN SCHOOL CURRICULUM

In this section, the opinions of teachers on issues pertaining to language education in school curriculum are discussed. A questionnaire consisting of 19 items was administered to teachers belonging to lower primary, upper primary, secondary and senior secondary. The 19 items of this language questionnaire covers different aspects of language curriculum. The data were analysed in terms of locale, teaching level of teachers. Percentages and frequencies were computed for each item in respect of all these four background variables. The results were presented and discussed hereunder.

3.2.1 Three Language Formula

Three Language Formula has been introduced in our school curriculum to cater to the needs of different linguistic groups. In the context of planning for a new curriculum framework for school education, it is necessary to know the opinions of teachers about the relevance of three-language formula. Hence the opinions of teachers, about implementation of three-language formula in the state and continuation of the same, were collected and results were presented separately in the following table.

Table 3.2.1(a): Opinion of Teachers regarding Implementation and Continuation of Three Language Formula – Levelwise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Implementation	88.1	94.8	97.7	93.0	94.1
Continuation	91.5	94.7	88.5	87.1	90.8

Table 3.2.1(b): Opinion of Teachers regarding Implementation and Continuation of Three Language Formula– Locale wise

	Location	
	Rural	Urban
Implementation	93.9	94.4
Continuation	92.3	88.3

Out of total number teachers responded to this question, 94.1% stated that the three language formula was implemented by state in its schools and only 5.9% opined that it was not implemented. Those who responded that it has not been implemented might have not aware of the implementation of three-language formula in the state of Karnataka. Upper primary (94.8%), secondary (97.7%) and senior secondary (93%) are more aware of the fact that three-language formula is in vogue in the state than their counterparts in lower primary (88.1%).

As regards continuation of three-language formula, 90.8% opined that three language-formula should be continued. Among those who agreed for continuation, rural teachers (92.3%) were more inclined for its continuation than their urban (88.3%) counterparts. Teachers of primary level (lower, 91.5% and upper, 94.7%) were more favourable to continuation of three-language formula when compared to their counterparts in secondary (88.5%) and senior secondary (87.1%).

From the above results it is evident that majority of teachers (above 90%) belonging to different locale and teaching level have agreed that three-language formula was implemented in the state and were favourable to its continuation.

3.2.2 Compulsory Language

English occupied a very significant place in our schooling during pre-independent days and continue to play a dominant role in post-independence days. There are certain people who feel that Indian languages especially Hindi be given importance in place of English. This controversy has some implications in curriculum development. While planning for a curriculum frame, it is necessary to

obtain the opinions of teachers about the language, which is to be taught as compulsory in schools.

The results, pertaining to the opinions of teachers about learning English as a Compulsory subject, are presented in the following tables.

Table 3.2.2(a): Opinion of Teachers regarding study of English as Compulsory Language - Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	80.9	89.5	84.4	87.7	85.9

Table 3.2.2(b): Opinion of Teachers regarding study of English as Compulsory Language– Locale wise

	Location	
	Rural	Urban
Yes	84.6	88.1

The above table reveals that 85.9% of teachers opined that all the students should learn English Language as a compulsory subject, whereas 14.1% of teachers disagreed to it. Among those who agreed for making English as a Compulsory subject urban teachers 88.1% were more inclined to Compulsory English than their rural counterparts 84.6%.

Among those who agreed, Upper Primary 89.5% and Senior Secondary 87.7% teachers were more inclined to it than their counterparts in Lower Primary 80.9% and Secondary 84.4%.

Table 3.2.2(c): Opinion of Teachers regarding study of Hindi as Compulsory Language – Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	95.3	93.1	82.6	76.1	87.4

Table 3.2.2(d): Opinion of Teachers regarding study of Hindi as Compulsory Language – Locale wise

	Location	
	Rural	Urban
Yes	89.7	83.5

Among total number of teachers 87.4% opined that Hindi should be taught as a compulsory language in all states. Further, rural (89.7%) teachers were more favourable to make Hindi a compulsory language when compared to their urban (83.5%) counterparts.

Further, Lower Primary teachers (95.3%) were more favourable to make Hindi a compulsory language than their counterparts in Secondary (82.6%), Upper Primary (82.6%) and Senior Secondary (76.1%).

From the above results it is evident that majority of teachers (above 85%) belonging to different locale and teaching level would like all the students to learn English and Hindi languages as a compulsory subjects.

3.2.3 Stage of Introduction of English

As majority of teachers agreed for compulsory English, it is essential to decide the level at which English be introduced. Opinions of teachers about the level at which English is to be introduced was sought and results were presented in table 3.2.3.

Table 3.2.3: Opinion of Teachers regarding stage of Introduction of English

Variable	Category	Pre-prim	Class I	Class III	Cl V/VI
Locale	Rural	7.6	18.8	23.2	50.5
	Urban	10.0	19.3	17.9	52.9
Teaching level	LP	1.3	16.0	22.7	60.0
	UP	8.6	19.7	22.2	49.6
	Sec	7.3	17.3	20.9	54.6
	SS	19.1	25.4	17.5	38.1
Total		8.5	19.2	21.1	51.2

The above table reveals that majority of teachers (51.2%) opined that English be introduced at class V/VI followed by class III (21.1%), class I(19.2%) and Pre-primary (8.5%). Similar trend is noticed in respect of teachers belonging to different locale and teaching level.

3.2.4 Stage of Introduction of Third Language

The results pertaining to the opinions of teachers about third language, in respect of the class where it is to be introduced and the class up to which it is to be taught, are presented in the following table.

Table 3.2.4: Opinion of Teachers regarding stage of Introduction of Third Language

Variable	Category	Beginning V class	End X class
Locale	Rural	73.3	73.9
	Urban	60.7	77.6
Teaching level	LP	75.7	77.1
	UP	78.1	73.4
	Secondary	55.3	80.5
	Sr. secondary	67.2	67.2
Total		68.4	75.4

Among total number of teachers, 68.4% opined that third language should be started at V class and 75.4% felt that it should be taught upto X class.

Majority of rural teachers (73.3%) opined that it should be introduced at V class as against urban teachers (60.7%). As regards class up to which it is to be taught, urban teachers were more favourable to X class (77.6%) compared to their rural counterparts (73.9%).

Between the teachers of different levels, Upper Primary (78.1%) teachers were more favourable to start third language at V class followed by Lower Primary (75.7%), Senior Secondary (67.2%), and Secondary (55.3%) teachers. Among teachers who opined that it should be taught up to X class, Secondary (80.5%)

teachers were more favourable when compared to their counterparts in Upper Primary (73.4%), Lower Primary (77.1%) and Senior Secondary (67.2%).

Among those teachers who have suggested other classes to introduce third language, few have suggested 6^{th} class (8.3%), 4^{th} class (7%) and 1^{st} class (6.2%). As regards the class upto which it is to be taught, few teachers suggested 12^{th} class (8.1%) and 7^{th} class (5.1%).

On the whole, irrespective of locale, teaching level, age and experience of teachers, it is observed that majority of them (above 68%) suggested that third language should be introduced at V class. Further, majority of teachers (above 75%) belonging to different locale and teaching level suggested that the third language should be taught upto X class.

3.2.5 Aspects to be focused in Teaching Second Language at Secondary Level

Teachers were asked to respond for the second language to be taught upto secondary level, which one of the following is most important.

a) Teaching grammar and structural nature of the language along with the history of its development.

b) Teaching the masterpieces of literature in that language and explaining its literacy theories and metaphorical use.

c) Teaching the contemporary forms of the language with all its social functions in speech and in writing and teaching only practical grammar where necessary.

Results pertaining to teaching of second language are presented in following table.

Among total number of teachers responded 51.7% preferred teaching contemporary form of language with social functions, 42.1% preferred teaching grammar and structural nature of the language and very few (6.2%) preferred teaching masterpieces of literature in that language. Rural teachers were found to

be more favourable to contemporary forms (52.3%), whereas urban teachers (42.5%) were more favourable to grammar and structural nature.

Table 3.2.5: Opinion of Teachers regarding aspects to be focused in Teaching Second Language at Secondary level

Variable	Category	a	b	c
Locale	Rural	41.6	6.1	52.3
	Urban	42.5	6.5	51.1
Teaching level	LP	52.5	8.2	39.3
	UP	37.4	2.0	60.6
	Secondary	40.3	5.4	54.3
	Sr secondary	42.2	12.5	45.3
Total		42.1	6.2	51.7

Between the different groups of teaching levels, Upper Primary teachers (60.6%) were more favourable for teaching of contemporary forms of language, co pared to their counterparts in Lower Primary (39.3%), senior secondary (45.3%) and Secondary (54.3%). Further, Lower Primary teachers (52.5%) were more favourable for teaching grammar and structural nature of language followed by senior secondary (42.2%), secondary (40.3%) and upper primary (37.4%) teachers.

On the whole, it is observed that, most of the teachers belonging to different locale and teaching level preferred teaching contemporary form of language with social functions (above 51%) and teaching grammar and structural nature of language (above 41%). But very few of them preferred teaching literature (around 6%).

3.2.6 Aspects to be focused in Teaching of Third Language at Secondary level

Teachers were asked to respond in similar way as in teaching of second language. Results pertaining to teaching of third language are presented in the following table.

Table 3.2.6 : Opinion of Teachers regarding aspects to be focused in Teaching Third Language at secondary level

Variable	Category	a	b	c
Locale	Rural	36.4	11.5	52.2
	Urban	37.0	13.0	50.0
Teaching level	LP	34.5	19.0	46.5
	UP	39.0	6.3	54.7
	Secondary	36.9	12.3	50.8
	Sr secondary	34.4	14.1	51.5
Total		36.5	12.1	51.4

Most of the teachers preferred teaching contemporary form of language with social functions (51.4%). Rural teachers (52.2%) were more favourable than their urban (50%) counterparts in preferring contemporary form. Upper Primary (54.7%) teachers were more favourable to this followed by senior secondary (51.5%) secondary (50.8%) and lower primary (46.5%) teachers.

On the whole, it is observed that, more than 51% of teachers belonging to different locale and teaching level preferred teaching of contemporary form of language with social functions followed by grammar and structural nature (above 36%) and literature (around 12%). Out of these three areas, teachers irrespective of locale and teaching level, least preferred teaching the masterpieces of literature in language and explaining its literary theories and metaphorical use.

3.2.7 Content/Type of Language to be focused

Teachers were asked to prefer any one of the following.

a) standardise the grammatical structure and accent of all the languages taught

b) retain the regional varieties of the structure and accent of all the languages

c) standardise the official and the associate official language (Hindi & English) of India and retain regional varieties of all the other national languages.

The results pertaining to this area were presented in the following tables.

Table 3.2.7: Opinion of Teachers regarding Content/Type of Language to be focused

Variable	Category	a	b	c
Locale	Rural	53.9	9.5	36.6
	Urban	50.0	11.3	38.7
Teaching level	LP	59.5	12.2	28.3
	UP	57.4	8.7	33.9
	Secondary	52.4	8.1	39.5
	Sr secondary	34.4	14.8	50.8
Total		52.5	10.1	37.3

It is observed that 52.5% of teachers have agreed to standardise the grammatical structure and accent of all the languages taught; 37.3% to standardise only Hindi and English and retain regional variety of all other languages; and only 10.1% to retain the regional varieties of the structure and accent of all languages. Rural and urban teachers found to differ in their agreement to these points. Further rural teachers (53.9%)were more agreeable to standardise the grammatical structure and accent of all languages taught when compared to their urban counterparts (50%).

Variation in agreeing to these points was evident among teachers belonging to different teaching level. Further, lower primary (59.5%) teachers were more favourable to standardisation of all languages, followed by upper primary (57.4%), secondary (52.4%) and senior secondary (34.4%) teachers.

On the whole, it is found that, most of the teachers (about 52%), irrespective of their locale and teaching level agreed to standardise the grammatical structure and accent of all the languages taught. About 37% of them agreed to standardise Hindi and English and retain regional varieties of all other national languages. Only about 10% of teachers favoured to retain regional varieties of the structure and accent of all the languages.

3.2.8 Teaching of Foreign Languages as Second/Third Language

Teachers were asked to respond to the teaching of a foreign language (French or Chinese) in place of Hindi or Modern Indian language. Results pertaining to this were presented in the following tables.

Table 3.2.8(a): Opinion of teachers regarding teaching of Foreign Languages as Second/Third language – Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	11.8	20.3	8.2	8.3	12.7

Table 3.2.8(b): Opinion of teachers regarding teaching of Foreign Languages as Second/Third language – Localewise

	Locale	
	Rural	Urban
Yes	14.4	10.1

Majority of teachers (87.3%) were against introducing foreign language. Urban teachers (89.9%) were more against introducing foreign language than their rural counterparts (14.4%).

Secondary teachers (91.8%) were more against its introduction than their lower primary (88.2%), primary (79.7%) and Senior Secondary (91.7%) counterparts.

On the whole, it is observed that, irrespective of their locale and teaching level, majority of teachers (about 87%) were against introducing foreign language, like French or Chinese, as second /third language in lieu of Hindi or a Modern Indian Language.

3.2.9 Teaching of Classical Languages in Schools

Results pertaining to the opinions of teachers about teaching of classical languages were presented in the following table.

Table 3.2.9(a): Opinion of teachers regarding teaching of Classical Languages - Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	23.1	42.7	47.5	37.7	39.3

Table 3.2.9(b): Opinion of teachers regarding teaching of Classical Languages – Locale wise

	Location	
	Rural	Urban
Yes	37.4	42.2

Among teachers responded to this 60.7% were against introducing a classical language, whereas 39.3% were in favour of it. Rural and urban differences, in support and against introduction of a classical language, were noticed. Rural teachers (62.6%) were more against its introduction than their urban (57.8%) counterparts.

Secondary teachers (47.5%) were more favourable and Lower Primary teachers (76.9%) were more against introduction of a classical language compared to their counterparts in other teaching levels.

On the whole, among teachers belonging to different locale and teaching level, about 60% were against and about 40% were in favour of teaching a classical language like Arabic or Persian or Sanskrit in Schools. Teachers have not given a clear mandate either in favour or against teaching classical language.

3.2.10 Teaching of Listening and Speaking Skills in English

Results pertaining to the opinions of teachers about teaching skills of listening and speaking in English at the school level were presented in the following table.

Table 3.2.10(a): Opinion of teachers regarding teaching of listening and speaking skills in English - Levelwise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	87.7	97.0	90.2	93.1	92.4

Table 3.2.10(b): Opinion of teachers regarding teaching of listening and speaking skills in English – Locale wise

	Location	
	Rural	Urban
Yes	94.1	89.5

Majority of teachers (92.4%) agreed that skills of listening and speaking in English should be taught at school level. Rural teachers (94.1%) were much more favourable than their urban (89.5%) counterparts.

Variations were noticed between teachers of different levels in their opinions. It is observed that Upper Primary teachers (97%) were more favourable to teach listening and speaking skills in English than their counterparts in senior secondary (93.1%), secondary (90.2%) and lower primary (87.7%).

On the whole, it is noticed that, almost all the teachers (above 92%), irrespective of the locale and teaching level, opined that listening and speaking skills in English should be taught at school level.

3.2.11 Types of English Grammar to be taught in Schools

Teachers were asked to respond to which of the following types of grammar should be taught in schools.

a) Theoretical, prescriptive grammar as a subject

b) Functional, descriptive grammar.

Results, pertaining to the opinions of teachers on type of English grammar to be taught in schools, were presented in the following table.

Table 3.2.11(a): Opinion of teachers regarding types of English Grammar to be taught in schools - Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	19.2	16.0	15.8	10.2	15.7

Table 3.2.11(b): Opinion of teachers regarding types of English Grammar to be taught in schools – Locale wise

	Locale	
	Rural	Urban
Yes	17.5	12.8

Most of the teachers 84.3% opined that functional. descriptive grammar should be taught in schools. Only 15.7% of teachers were favourable to teach theoretical, prescriptive grammar as a subject in schools. Rural teachers (17.5%) were more favourable to theoretical prescriptive grammar than urban teachers (12.8)%.

Lower Primary (19.2%) teachers were relatively more favourable to theoretical prescriptive grammar than their counterparts in Upper Primary (16%), Secondary (15.8%) and senior secondary (10.2%).

On the whole, majority of teachers (above 84%), irrespective of locale and teaching level, opined that functional descriptive grammar should be taught in schools.

3.2.12 Approaches Appropriate for Teaching English

Teachers were asked to respond to which one of the following approaches of teaching English they prefer.

a) Structural approach

b) Aural-oral approach

c) Communicative approach

d) Situational approach.

Results pertaining to their opinions about approaches of teaching English were presented in the following tables.

Table 3.2.12: Opinion of teachers about Approaches appropriate for Teaching English

Variable	Category	a	b	c	d
Locale	Rural	37.6	11.6	16.9	33.9
	Urban	32.6	18.8	25.7	22.9
Teaching level	LP	31.1	8.1	24.3	36.5
	UP	40.8	12.0	10.4	36.8
	Secondary	36.1	10.9	21.9	31.1
	Sr secondary	30.9	30.9	29.4	8.8
Total		35.7	14.2	20.2	30.0

It is observed that 35.7% of teachers preferred structural approach followed by situational approach (30%), communicative approach (20.2%) and aural-oral approach (14.2%). Rural and urban teachers vary in their intensity of preference to these approaches. Rural teachers were found to be more favourable to structural (37.6%) and situational (33.9%) approaches, whereas urban teachers favoured aural-oral (18.8%) and communicative (25.7%) approaches.

Variations, in the opinions of teachers between different teaching level, were evident. It is found that Upper Primary and Secondary teachers were more inclined to prefer structural (40.8%) and 36.1%) and situational (36.8% and 31.1%) approaches.

From the above results it is evident that the highly preferred approach was structural and least preferred was aural-oral. Irrespective of locale and teaching level, teachers preferred structural approach followed by situational, communicative and aural-oral approaches.

3.2.13 Quality of Reading Material in the Language Textbooks

The reading material, provided in the textbooks of languages, plays an important role in classroom transaction and to bring out desired learning outcomes. It is essential to know the adequacy of reading material provided in the existing textbooks. Hence the teachers were asked to give their opinion about the reading materials in the text books for teaching the first, second and third languages. They were asked to give their responses in a three point continuum, viz. too much and heavy; just adequate and manageable and too little and light. The results, pertaining to the opinions of teachers about reading material in the text books of first, second and third languages, were provided in the following table.

Among total number of teachers, more than 54% of them opined that the reading material, in textbooks of first, second and third language was just adequate and manageable. Variations in rating the reading material were evident between rural and urban teachers. Most of the rural teachers rated reading material in second language (40.8%) and third language (23.1%) textbooks as too much and heavy against urban teachers (21.2% and 14.5%).

Table 3.2.13: Opinion of teachers regarding quality of Reading Material in the Language Textbooks

Variable	Category	First language			Second language			Third language		
		a	b	c	a	b	c	a	b	c
Locale	Rural	7.4	77.2	15.4	11.1	48.1	40.8	18.9	58.0	23.1
	Urban	12.0	73.6	14.4	13.8	65.0	21.2	28.2	57.3	14.5
Teaching level	LP	1.4	84.3	14.3	13.1	52.5	34.4	29.6	48.2	22.2
	UP	6.8	82.8	10.4	9.1	50.9	40.0	11.2	68.2	20.6
	Sec	10.4	71.9	17.7	14.4	50.0	35.6	23.7	53.6	22.7
	SS	19.3	59.6	21.1	12.7	70.9	16.4	35.9	52.8	11.3
Total		9.1	75.9	15.0	12.1	54.4	33.5	22.4	57.7	19.9

Variations between teachers of different teaching level were evident in rating reading material. Senior Secondary teachers rated reading material in third language textbooks as too little and light (35.9%) as against others (11% to 29%).

On the whole, it is observed that, irrespective of locale and teaching level, to which teachers belong, more than 54% of them opined that the reading material, in text books of first, second and third languages was just adequate and manageable. As regards first language, more than 75% of teachers rated the reading material in textbooks as just adequate and manageable, whereas in second and third languages it ranged from 54% to 57%.

3.2.14 Qualifications Required for Teaching Languages

Teachers were asked to respond to who among the following is suitable to teach language.

a) Any teacher qualified to teach any subject(s)

b) Only those teachers who have studied the concerned language as a major subject but might not have studied the methodology of teaching language.

c) Only those teachers who might not have studied the concerned language as a major subject but might have studied the methodology of teaching it.

d) Only those teachers who have studied both language and the methodology of teaching it.

Results, pertaining to the opinions of teachers about eligibility/suitability of persons to teach language, were presented in the following table.

Table 3.2.14: Opinion of teachers regarding qualifications required for teaching Languages

Variable	Category	a	b	c	d
Locale	Rural	10.5	10.1	13.2	66.2
	Urban	3.8	15.9	9.8	70.5
Teaching level	LP	21.2	9.1	15.2	54.5
	UP	6.7	17.6	16.0	59.7
	Secondary	4.1	10.7	9.2	76.0
	Sr secondary	1.9	9.3	5.6	83.2
Total		8.0	12.5	11.9	67.6

Majority of teachers stated that teachers who studied language and methodology are suitable to teach language in schools (67.6%). A large number of urban teachers (70.5%) were holding this opinion compared to their rural (66.2%) counterparts.

Variations between teachers of different teaching levels were noticed in this regard. Senior Secondary (83.2%) and Secondary teachers (76%) were more in agreement to this opinion compared to their counterparts in Upper Primary (59.7%) and Lower Primary (45.5%).

On the whole, majority of teachers (above 67%) irrespective of their locale and teaching level opined that persons who studied both language and methodology are suitable to teach language.

3.2.15 Objectives of Teaching English

Teachers were asked to respond to which of the following are the objectives of teaching English in schools today. They were asked to mark one or more of the following depending on their perception.

1) to write and speak English whenever and wherever required

2) to read English literature written by great authors

3) to cultivate good style of writing by imitating good authors

4) to help in getting good job, keep it and make progress

5) to get social prestige, privileges and carry influence

6) to acquire the latest knowledge of different school subjects one has to study

7) to make a great scholar

Results pertaining to the opinions of teachers about the objectives of teaching English in schools, were presented in the following table.

Table 3.2.15: Opinion of Teachers regarding Objectives of Teaching English

Variable	Category	a	b	c	d	e	f	g
Locale	Rural	48.1	25.6	15.4	32.3	24.1	45.1	47.4
	Urban	48.4	26.4	15.1	32.7	15.1	40.3	45.9
Teaching Level	LP	47.6	35.7	25.0	29.8	25.0	40.5	50.0
	UP	51.1	28.9	17.0	36.3	25.2	42.2	48.2
	Sec	48.9	19.3	9.6	28.9	17.0	45.9	45.9
	SS	40.9	19.7	9.9	35.2	14.1	42.3	42.3
Total		43.5	23.4	13.8	29.8	18.7	39.1	42.3

Majority of teachers (43.5%), opined that the objective of teaching English in schools today is to write and speak English whenever and wherever required. Further, 42.3% stated the objective is to make a great scholar and 39.1% to acquire the latest knowledge of different school subjects. Cultivating good style of writing by imitating good authors was found to be the least preferred objective of teaching English.

There was no much variation in this opinion of rural and urban teachers. It is found that Upper Primary teachers (51.1%) were more in favour of the first objective than their Secondary (48.9%). Lower Primary (47.6%) and Senior Secondary (40.9%) counterparts.

On the whole, most of the teachers, irrespective of their locale and teaching level, stated that the objective of teaching English is to write and speak whenever and wherever required. The ranking of the stated objective of teaching English, as perceived by teachers, from highest to lowest is as follows:

I. to write and speak English whenever and wherever required

II. to make a great scholar

III. to acquired the latest knowledge of different school subjects one has to study

IV. to help in getting good job, keep it and make progress

V. to read English literature written by great authors

VI. to get social prestige, privilege and carry influence

VII. to cultivate good style of writing by imitating good authors

3.2.16 Medium of Instruction

Teachers were asked to give their opinion about the language, which they prefer to be the medium of instruction at the different school stages. Teachers were asked to select one of the following languages as medium of instruction.

1. Home language/tribal language/dialect
2. Standard regional language
3. English
4. Any other language

It is found that no teacher has suggested any other language as medium of instruction at different school stages. Results pertaining to the opinions of teachers about medium of instruction were presented in the following table.

Table 3.2.16(a): Opinion of Teachers regarding Home Language as Medium of Instruction

Variable	Category	pre-school	Primary	UP	Sec	SS
Locale	Rural	59.4	34.6	12.0	4.9	3.4
	Urban	59.1	27.0	8.8	5.0	1.3
Teaching level	LP	69.1	56.0	11.9	2.4	3.6
	UP	60.7	27.4	14.8	3.7	3.0
	Secondary	49.6	25.9	7.4	6.7	-
	Sr secondary	62.0	21.1	7.0	7.0	4.2
Total		53.5	28.7	9.8	4.5	2.3

Majority of teachers (53.5%), opined that home language should be medium of instruction at pre-school stage. Further 28.7% preferred home language as medium of instruction at primary stage. Rural teachers were more

preferring home language as medium of instruction at pre-school (59.4%) and primary (34.6%) stage compared to their urban counterparts (59.1% and 27%).

Most of the Lower primary teachers preferred home language as medium of instruction at pre-school (69.1%) stage as against teachers belonging to other levels of teaching (49% to 62%). Further, majority of Lower Primary teachers formed home language at primary(56%) stage also compared to their counterparts in other teaching levels(21% to 27%).

On the whole, majority of teachers, irrespective of their locale and teaching level, preferred home language as medium of instruction at pre-school stage (above 53%) followed by primary (above 28%), upper primary (above 9%), secondary (above 4%) and senior secondary (above 2%) stages. From this it is evident that teachers opined that medium of instruction at pre-school and primary stages should be in home language.

Table 3.2.16(b): Opinion of Teachers regarding Standard Regional Language as Medium of Instruction

Variable	Category	pre-school	Primary	UP	Sec	SS
Locale	Rural	17.7	43.2	41.0	28.2	12.8
	Urban	23.9	49.7	53.5	39.6	19.5
Teaching level	LP	14.3	22.6	21.4	13.1	6.0
	UP	11.1	45.2	43.7	17.8	10.4
	Secondary	30.4	54.1	55.6	52.6	16.3
	Sr secondary	23.9	57.8	59.2	43.7	32.4
Total		18.1	41.2	41.2	29.3	13.8

Majority of teachers preferred standard regional language as medium of instruction at both primary (41.2%) and upper primary (41.2%) stages. Variations in opinions in respect of locale were evident. Urban teachers were found to be relatively more favourable to this compared to their rural counterparts.

Secondary and Senior Secondary teachers were more favourable to this when compared to their Lower Primary and Upper Primary counterparts.

From the above results, it is evident that majority of teachers, irrespective of their locale and teaching level, preferred that standard regional language should be the medium of instruction at primary (above 40%) and upper primary (above 40%) stages. Some teachers also preferred regional language as medium of instruction at secondary (29%), pre-school (above 17%) and senior secondary (above 13%) stages.

Table 3.2.16(c): Opinion of Teachers regarding English as Medium of Instruction

Variable	Category	pre-school	Primary	UP	Sec	SS
Locale	Rural	2.6	6.8	26.7	27.4	29.7
	Urban	3.2	10.7	24.5	42.1	45.3
Teaching level	LP	1.2	2.4	23.8	22.6	21.4
	UP	2.2	8.9	33.3	28.2	28.2
	Secondary	2.2	14.1	19.3	41.5	38.5
	Sr secondary	7.0	16.9	26.8	36.6	59.2
Total		2.6	7.4	23.4	29.7	32.1

Majority of teachers preferred English as medium of instruction at senior secondary stage (32.1%) followed by secondary (29.7%) and upper primary (23.4%) stages. Between rural and urban teachers, urban teachers (24% to 45%) were more favourable to English medium, compared to their rural counterparts (26 to 30%) at upper primary, secondary and senior secondary stages.

Between teachers of different teaching levels, senior secondary, secondary and upper primary teachers were more favourable for English medium at senior secondary (59.2%) secondary (41.5%) and upper primary (33.3%) stages respectively than their counterparts in other teaching levels.

On the whole, irrespective of locale and teaching level, most of the teachers preferred English as medium of instruction at senior secondary (above 32%), followed by secondary (above 29%), upper primary (above 23%), primary (above 7%) and pre-school (above 2%) stages.

3.2.17 Class Upto which Home Language to be retained

Teachers were asked to respond up to which class home language be retained as medium of instruction. Results pertaining to this were presented in the following table.

Table 3.2.17: Opinion of Teachers regarding Class upto which home language to be retained

Variable	Category	I	IV	V	VII	X
Locale	Rural	28.8	30.2	8.6	15.1	17.3
	Urban	19.3	38.6	17.1	14.8	10.2
Teaching level	LP	2.0	46.9	14.3	22.5	14.3
	UP	42.7	21.3	12.0	10.7	13.3
	Secondary	23.4	40.6	6.3	15.6	14.1
	Sr secondary	23.7	28.9	18.4	10.5	18.4
Total		25.1	33.5	11.9	15.0	14.5

The opinions of teachers, about the class up to which home language to be retained, were scattered across pre-primary classes to 12^{th} class. However, majority of teachers (33.5%) opined that it should be retained up to IV class, which is a terminal class for primary education in Karnataka. Between teachers of different locale, urban teachers (38.6%) were more in its favour than their rural counterparts (30.2%).

Between the teachers of different level, Lower Primary (46.9%) and Secondary (40.6%) teachers were relatively more favourable to this.

On the whole, irrespective of their locale and teaching level, most of the teachers opined that home language should be retained up to IV class (about 33%) followed by I class (about 25%), VII and X classes (about 15%) and lastly V class (about 12%).

3.2.18 Quality of English Language Textbooks

Teachers were asked to rate, English textbooks currently being used at lower primary, upper primary and secondary levels, in a five point response continuum.

a) Extremely good and useful

b) Very good

c) Just good enough

d) Poor and Useless

e) Worthless and out-dated

For the convenience of analysis, the above five point response continuum was reduced to two, viz, good and poor. The sum of the scores on extremely good, very good and just good were considered as 'good' and sum of the scores on poor and worthless as 'poor'.

The results, pertaining to ratings of teachers on English text books currently being used as first, second and third language, at different levels, were presented in the following table.

Table 3.2.18(a): Opinion of Teachers regarding quality of First language English Text Books

Variable	Category	Lower Primary		Upper Primary		Secondary	
		Good	Poor	Good	Poor	Good	Poor
Locale	Rural	38.1	61.9	48.2	51.8	57.3	42.7
	Urban	65.5	34.6	61.1	38.9	62.4	37.6
Teaching level	LP	20.4	79.6	25.9	74.1	33.3	66.7
	UP	43.4	56.6	49.4	50.6	40.5	59.5
	Secondary	66.7	33.3	67.9	32.1	68.6	31.4
	Sr secondary	63.9	36.1	59.0	41.0	64.1	35.9
Total		46.8	53.2	52.7	47.3	59.8	40.2

English text books as first language were rated by teachers as poor at primary (53.2%%), good at upper primary (52.7%) and secondary (59.8%) levels.

Between the teachers of different locale, most of the urban terachers rated text book of lower primary (65.5%), upper primary (61.1%) and secondary (62.4%) as good when compared to their rural counterparts (38.1%, 48.2% and 57.3% respectively). Urban and rural teachers vary in their ratings of first language English text books, where in urban teachers rated them as good and rural rated as poor at all the three levels.

Across the different levels of teaching, majority of secondary and senior secondary teachers rated first language English text books at all the three levels (59% to 68%) compared to lower primary and upper primary teachers (20% to 49%).

On the whole, the ratings of teachers, about English text book in first language at different levels, were similar, irrespective of their locale and teaching level. Most of the teachers rated lower primary text books as poor (53.2%), whereas upper primary and secondary text books were rated as good (52.7% and 59.8%).

Table 3.2.18(b): Opinion of Teachers regarding quality of Second language English Textbooks

Variable	Category	Lower Primary		Upper Primary		Secondary	
		Good	Poor	Good	Poor	Good	Poor
Locale	Rural	61.6	38.4	52.0	48.0	58.3	41.7
	Urban	64.9	35.1	51.9	48.2	62.6	27.3
Teaching level	LP	50.0	50.0	26.8	73.2	31.6	68.4
	UP	62.5	37.5	56.8	43.2	50.0	50.0
	Secondary	70.3	29.7	61.5	38.5	65.7	34.3
	Sr secondary	64.9	35.1	50.0	50.0	69.4	30.6
Total		62.9	37.1	52.0	48.0	60.3	39.7

As regards English text books on secondary language, most of the teachers rated them as good at all the levels, viz. lower primary (62.9%), upper primary (52%) and secondary (60.3%). Between teachers of different locale, disparities in ratings were evident. More number of urban teachers rated text books as good at lower primary (64.9%) and secondary (62.6%) compared to their rural counterparts. But, more number of rural teachers rated upper primary text books as good (52%) compared to their urban counterparts (51.9%), however, these variations were not much.

Among teachers belonging to different teaching levels, most of the secondary and senior secondary teachers (50% to 70%) rated second language English text books as good at all the three levels, compared to their counterparts in lower and upper primary levels (50% to 62%). Further, it is observed that more that 50% of teachers belonging to all the four levels of teaching rated lower primary text books as good.

On the whole, it is observed that, irrespective of their locale and teaching level, most of the teachers rated second language English text books as good at all the three levels.

Table 3.2.18(c): Opinion of Teachers regarding Third Language English Text Books

Variable	Category	Lower Primary		Upper Primary		Secondary	
		Good	Poor	Good	Poor	Good	Poor
Locale	Rural	58.5	41.5	50.8	49.2	51.0	49.0
	Urban	66.7	33.3	62.6	37.4	71.6	28.4
Teaching level	LP	64.0	36.0	33.4	66.6	21.1	78.9
	UP	58.6	41.4	56.1	43.9	52.9	47.1
	Secondary	67.9	32.1	63.0	37.0	66.7	33.3
	Sr secondary	56.2	43.8	57.9	42.1	71.4	28.6
Total		61.7	38.3	54.8	45.2	60.5	39.5

Out of total number of teachers of most of them rated third language English text book as, just good enough at lower primary (61.7%), upper primary(54.8%) and secondary (60.5%).

Among teachers of different locale, most of the urban teachers rated the text books as good (62% to 71%) at all the three levels, compared to their rural counterparts (50% to 58%).

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Most of the teachers belonging to different teaching levels rated the text books as good (52% to 71%). However, lower primary teachers rated upper primary (66.6%) and secondary (78.9%) text books as poor.

On the whole, it is observed that out of total number of teachers, irrespective of their locale and teaching level, rated third language English text books of all the three levels as good.

3.2.19 Scope of Exercises/Activities in the Language Textbooks

Teachers were asked to give their opinion regarding the exercises/activities presented in the language textbooks of first, second and third languages on following eight aspects.

1. Caters to the development of all skills in language
2. Caters to the development of same skills only
3. Home Variety
4. Interesting for the learner
5. Thought provoking and creative
6. Provides scope for practice
7. Caters to memorisation

8. Provide scope for evaluation of skills.

The results, pertaining to the opinions of teachers on exercises/activities in the language textbooks, were presented in the following pages.

Table 3.2.19(a): Opinion of Teachers regarding scope of Exercises/Activities in First Language textbooks

Variable	Category	Activities/Exercises							
		1	2	3	4	5	6	7	8
Locale	Rural	53.8	19.6	30.8	41.4	33.1	30.8	36.1	31.2
	Urban	46.5	30.8	33.3	34.0	36.5	39.0	33.3	31.5
Teaching Level	LP	71.4	20.2	31.0	51.2	45.2	45.2	45.2	42.9
	UP	60.7	23.0	33.3	42.2	31.9	34.1	37.8	34.1
	Sec	37.8	23.7	31.9	31.1	29.6	28.1	26.7	23.7
	SS	32.4	29.6	28.2	29.6	33.8	29.6	32.4	25.4
Total		51.1	23.8	31.8	38.6	34.4	33.9	35.1	31.3

Majority of teachers (51.1%) opined that the exercises/activities in first language text books cater to the development of all skills in language. About 35% to 38% of teachers perceived that the exercises/activities in first language textbooks were interesting for learner (38.6%), catering to memorisation(35.1%), thought provoking and creative(34.4%) and having scope for practice(33.9%). Perceptional variations were evident between rural and urban teachers. About 53.8% of rural teachers as against 46.5% of urban teachers, opined that exercises/activities in first language textbooks were catering to the development of all skills in language.

Perception of teachers about the exercises/activities were varying between different teaching levels. Most of lower primary (71.4%) and upper primary (60.7%) teachers opined that, exercises in text books were catering to the development of all skills in language, compared to their dounterparts in secondary (37.8%) and senior secondary (32.4%) levels.

On the whole, irrespective of their locale and teaching level, about 51.1 of teachers perceived that exercises/activities of first language textbooks were catering to the development of all skills in language followed by interesting for the

learners(38.6%), catering to memorisation (35.1%), thought provoking and creative(34.4%), providing scope for practice (33.9%), having variety (31.8%) providing scope for evaluation of skills (31.3%) and catering to the development of some skills only (23.8%). Most of the teachers viewed that the exercises/activities in first language textbooks were catering to the development of all the skills in language.

Table 3.2.19(b): Opinion of Teachers regarding scope of Exercises/Activities in Second Language textbooks

Variable	Category	Activities/Exercises							
		1	2	3	4	5	6	7	8
Locale	Rural	13.5	35.7	17.7	24.4	17.7	23.7	16.5	15.4
	Urban	19.5	35.9	18.9	22.6	20.8	23.3	25.2	17.6
T.level	LP	15.5	23.8	7.1	17.9	10.7	16.7	11.9	10.7
	UP	13.3	37.8	17.8	30.4	19.3	27.4	25.9	23.0
	Sec	17.8	40.0	24.5	20.0	20.7	27.4	21.5	12.6
	SS	16.9	36.6	19.7	25.4	23.9	16.9	14.1	16.9
Total		15.8	35.8	18.1	23.8	18.8	23.5	19.8	16.2

With regard to exercises/activities in second language textbooks, most of the teachers opined that they were catering to the development of some skills only(35.8%). Between rural and urban teachers, urban teachers(35.9%) were in slightly favour of this opinion when compared to their rural counterparts(35.7%).

Between the teachers of different teaching levels, secondary teachers (40%) endorsed this opinion more than their counterparts in other teaching levels.

On the whole, it is observed that majority of teachers, irrespective of their locale and teaching level, opined that exercises/activities in second language textbooks were catering to the development of some skills only(35.8%), whereas about 23% of teachers perceived that they were interesting to the learner and providing scope for practice, about 18% to 19% felt that they were catering to memorisation, thought provoking and variety. Very few teachers stated that they were providing scope for evaluation of skills (16.2%) and were catering to the development of all skills(15.8%).

Table 3.2.19(c): Opinion of Teachers regarding scope of Exercises/Activities in Third Language textbooks

Variable	Category	Activities/Exercises							
		1	2	3	4	5	6	7	8
Locale	Rural	12.4	17.7	18.1	20.7	13.9	20.7	13.5	11.7
	Urban	12.6	21.4	13.8	15.7	8.8	17.6	16.4	15.7
Teaching Level	LP	10.7	8.3	10.7	13.1	7.1	11.9	6.0	7.1
	UP	15.6	20.7	17.8	26.7	15.6	25.9	24.4	19.3
	Sec	12.6	21.5	21.5	16.3	14.1	21.5	13.3	12.6
	SS	8.5	23.9	11.3	15.5	7.0	12.7	8.5	9.9
Total		12.5	19.1	16.5	18.8	12.0	19.5	14.6	13.2

As regards exercises/activities in third language textbooks, teachers opined that they were not much catering to any of the aspects listed. However, among them about 19% of teachers felt that the exercises/activities were catering to the development of some skills only (19.1%), interesting to the learner (18.8%), and providing scope for practice (19.5%). Between rural and urban teachers, rural teachers (20.7%)seemed to have perceived favourably that. the exercises provide scope for practice in third languagetext books, than their urban counterparts (17.6%). Variations. between teachers of different teaching levels, were not much evident.

On the whole. most of the teachers. irrespective of their locale and teaching level, felt that the exercises/activities of third language textbooks were not substantially catering to any of the aspects listed. The percentage of teachers favourably perceived was ranging from 12 to 19 only.

3.3 PERCEPTION OF TEACHERS REGARDING SCIENCE AND MATHEMATICS CURRICULUM

In this section, the analysis of responses of teachers with respect to questions regarding Science and Mathematics part of school curriculum is presented along with the main trends in their perceptions. The responses of teachers from the four stages of school education have been analyzed.

Of the 19 questionnaire items in this section, 9 pertained to mathematics curriculum, 6 dealt with science curriculum in schools and 4 items were common to both. The analysis is presented in two parts.

3.3.1 Perceptions of Teachers on Mathematics Curriculum

The opinions of teachers regarding various aspects of Mathematics curriculum are presented hereunder.

i. Oral Mathematics

By oral mathematics we mean making the children recite numbers, addition and subtraction examples, the multiplication tables etc. It includes drilling, teacher asking questions and pupils answering in a chorus so that both the 'aural' (listening) and the 'oral' (speaking) methods are exploited in order to give a firm foundation to primary children in the use of numbers along with the four basic operations. Regarding this matter, the opinion of primary teachers is important. The summary of perception regarding adequacy of emphasis given for oral mathematics by 396 teachers (out of a total 471) teaching at different levels is presented in Table 3.3.1.i(a). Responses of Rural and Urban teachers are presented in Table 3.3.1.i(b).

Table 3.3.1.i(a): Opinion of Teachers regarding Oral Mathematics – Level wise

	Level of Teachers				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	75.29	71.75	51.35	63.76	65.40
Total	96.59	92.25	71.15	81.17	84.07

Table 3.3.1.i(b): Opinion of Teachers regarding Oral Mathematics – Locale wise

	Locale	
	Rural	Urban
Yes	66.14	63.69

1. A Majority of teachers (65%) expressed their satisfaction regarding the existing emphasis given to oral mathematics at primary stage. Further, the LP and UP teachers hold this view more strongly than their counterparts at secondary and senior secondary levels.

2. Both rural and urban teachers hold the view that sufficient emphasis is given to oral mathematics at the primary stage.

ii. Qualification of Teachers

Many states are adopting the rule that candidates joining teacher-training course to prepare teachers for the elementary stage (classes 1 to 7/8), should have passes the senior secondary stage (+2 or pre-university). This is a welcome trend in keeping with the increasing demands pertaining to content competencies on elementary teachers. But here, there are two groups of teachers-trainees- a) Those who studied mathematics only upto X standard, taking other courses at +2 level. b) Those who studied mathematics upto the +2 level. Hence, it becomes a concern of mathematics curriculum to find out the opinion of teachers regarding the qualification required of mathematics teachers at elementary level. The summary of responses to item 2 is presented in Tables 3.3.1.ii(a) and 3.3.1.ii(b).

Table 3.3.1.ii: Opinions of Teachers regarding Qualification for Teaching Mathematics at Primary levels – Level wise

Teacher Qualification	Level of Teachers				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
X standard	52.43	35.11	07.01	05.79	25.50
Senior Secondary	34.14	43.51	40.35	40.57	39.39
Degree	13.41	21.37	52.63	53.62	34.34
Total	82	131	114	69	396

Table 3.3.1.ii(b): Opinions of Teachers regarding Qualification required for Teaching Mathematics at Primary levels – Locale wise

Teacher Qualification	Locale	
	Rural	Urban
X std	32.12	14.18
Senior Secondary	41.76	37.83
Degree	26.10	47.97
Total	249	148

1. There is a clear opinion in favour of higher qualification (Senior Secondary and Degree) for mathematics teachers in elementary schools with 40% of the responding teachers favouring mathematics knowledge up to senior secondary level for elementary teachers and 34% supporting mathematics knowledge up to degree level. Only a small group of teachers (26%) favour mathematics up to X standard as qualification for elementary teachers.

2. Among the rural/urban groups of teachers also, we see a similar trend of opinion-with 42% of the former and 38% of the latter suggesting mathematics knowledge up to senior secondary level for elementary teachers. But a contrast appears in these two groups when it comes to the requirement of degree level mathematics knowledge among elementary teachers. While a sizeable group of urban teachers (48%) favour degree level mathematics for elementary teachers, a lesser percentage of rural teachers (26%) express this opinion. They have favoured mathematics knowledge up to sr. secondary level. Thus, the urban teachers have suggested a higher qualification in mathematics than the rural teachers.

iii. Status of Mathematics up to 10th standard: Compulsory or Optional subject?

For many years, mathematics has been a compulsory subject up to 10th standard, which means there is no option to drop mathematics and take up another subject at secondary stage for a large number of students who find mathematics difficult. Such relatively higher difficulty in mathematics compared to other school subjects, is evidenced by the large number of students failing in mathematics at the state level X class examination. Hence the perception of teachers has been sought whether they favour the existing system of compulsory mathematics up to 10th standard or not. The responses are summarized in Tables 3.3.1 and 3.3.2.

Table 3.3.1.iii(a): Opinions of Teachers regarding Compulsory Mathematics – Level wise

	Level of Teachers				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	95.29	98.50	92.50	88.40	94.36
Total	85	134	120	69	408

Table 3.3.1.iii(b): Opinion of Teachers regarding Compulsory Mathematics – Locale wise

	Locale	
	Rural	Urban
Yes	3.79	95.36
Total	258	151

1. Most of the teachers (94%) agree with the continuation of mathematics as a compulsory subject up to class X.

2. This opinion regarding compulsory mathematics is shared by the teachers working at each of the four levels of school education, the percentage responses ranging from 88 to 98.

3. Both rural and urban teachers opine strongly that mathematics should be continued as a compulsory subject up to X standard.

iv. Mathematics Laboratory

Mathematics is usually considered to be an abstract subject difficult to learn. To concretize the ideas and consequently reduce the difficulty level, some suggests setting-up of mathematics laboratory in schools. Opinion of teachers on this issue has been presented in Tables 3.3.1.iv(a) and 3.3.1.iv(b).

Tables 3.3.1.iv(a): Opinions of Teachers regarding Mathematics Laboratory – Level wise

Level	Level of Teachers				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Secondary	75.00	75.00	84.74	73.84	77.74
Senior Secondary	25.00	25.00	15.26	26.16	22.26
Total	80	128	118	65	391

Tables 3.3.1.iv(b): Opinions of Teachers regarding Mathematics Laboratory – Locale wise

Teacher Qualification	Locale	
	Rural	Urban
Secondary	76.00	80.98
Senior Secondary	24.00	19.02
Total	250	142

The perception of a large proportion (78%) of the respondents is in favour of setting-up of mathematics laboratory in schools. Teachers at all levels hold this view with the secondary teachers favouring strongly (85%).

Similar trend favouring mathematics laboratory is also noticed among a large proportion of rural teachers (76%) as well as urban teachers (81%), with the urban teachers being more favourable to the setting-up of mathematics laboratory in schools.

This question is logically sequenced for those teachers who expressed approval of setting up mathematics Laboratory in schools. It is necessary to find out the level/stage of school education where they would like the mathematics laboratories to come up.

A large percentage of teachers (82%) want mathematics laboratories to be introduced in secondary schools, while only 18% want them in senior secondary schools.

This opinion towards mathematics labs at secondary level prevails among the senior secondary teachers (58%) also, though not to the same extent as found at the other levels (84.6% to 88.2%). The rural teachers (83.9) hold this opinion more strongly than the urban teachers (78.1).

v. Practical Examination in Mathematics

As a sequel to the issue of setting up mathematics laboratories in schools, the idea of conducting practical exams in mathematics comes up-on which the perceptions of teachers at the four levels, have been gathered.

There is a strong support (78%) for the need for mathematics practical examinations among teachers. The rural-urban teachers do not differ with this opinion among themselves. Teachers with different academic qualifications also hold a similar opinion (74%-84%) with the postgraduate teachers favouring the least and teachers with senior secondary qualification favouring the most.

a) Mathematics Practical Examination in Secondary Level or Senior Secondary Level

The perception of teachers as to whether they what the mathematics practical examinations at secondary level or at the senior secondary level, have been gathered and presented in Tables 3.3.1.v(a_1) and 3.3.1.v(a_2).

Tables 3.3.1.v(a_1): Opinions of Teachers regarding Practical Examination in Mathematics – Level wise

	Levels of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Secondary	87.50	88.23	84.61	58.69	82.01
Senior Secondary	78.94	84.16	75.43	69.23	77.86

Tables 3.3.1.v(a_2): Opinions of Teachers regarding Practical Examination in Mathematics – Locale wise

Teacher Qualification	Locale	
	Rural	Urban
Secondary	83.90	79.04
Senior Secondary	78.39	75.52

There is an overwhelming support for introducing mathematics practical examinations at secondary level (81%) versus senior secondary level (19%). This is true among rural (80.3%) and urban (81.5%) teachers also. This clear trend of opinion is reflected across teachers grouped according to the 4 levels of teaching except those at the senior secondary level where a high percentage (41%) of teachers have favoured practical exam at the senior secondary level.

b. Calculators in Examinations

In the modern electronic age calculators and computers are commonplace. If some favour the use of calculators in examination, there are others who think that the true ability in mathematics cannot be measured if students use calculators. The perceptions of teachers regarding the use of calculators at the senior secondary and secondary examinations have been gathered in order to throw light on this important issue 3.3.1.v(b_1) and 3.3.1.v(b_2).

Tables 3.3.1.v(b_1): Opinion of Teachers regarding Use of Calculators in Examination – Level wise

	Level of Teachers				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	26	39	38	24	127
Total	81	131	118	69	399

Tables 3.3.1.v(b_2): Opinion of Teachers regarding Use of Calculators in Examination– Locale wise

	Locale	
	Rural	Urban
Yes	77	50
Total	250	150

1. The opinion of teachers is towards not allowing calculators at the examinations – 68% of teachers saying a definite 'No'. This trend in opinion of not allowing calculators in examination at secondary and senior secondary stage is also observed among teachers classified according to level at which they are teaching and locale.

2. Of those, who favoured use of calculators (32%), all most all of the teachers agreed to allowing the use of calculators during mathematics examination only.

3. Teachers at all levels favoured (50% to 80%) the use of calculators at the senior secondary stage whereas a small percentage of teachers favoured their use at the secondary level.

4. A similar trend in opinion on subject and level for allowing the use of calculators is found among rural and urban teachers as well.

vi. Choice between common and different levels of mathematics courses

As a logical sequence to the view of those teachers expressing support to compulsory mathematics, the question arises whether the compulsory mathematics course in secondary schools should be one common course for all students according to the present practice or whether there should be separate mathematics courses (like 0 level): ordinary mathematics and A level: advanced mathematics) – a separate course for those who will pursue their career in mathematics and another course for the other students.

1. 76% of the teachers favour one common mathematics course for all students up to X standard as against 24% of teachers who favour different levels of mathematics courses.

2. There is no variation in the opinion of the teachers at different levels of school education, the lowest being 59% at the secondary level.

3. Rural teachers are more in favour of one common course in mathematics for all up to X standard (81%) than their urban counterparts (66%).

vii. Correlation of Mathematics with related Subjects

Most educationists feel that a school subject, especially an abstract subject like mathematics, becomes more relevant and motivating to the students if it is presented so as to bring out its usefulness for daily life situations.

It is widely acknowledged that students learn any school subject more meaningfully when it is presented in such a way that its relation/link with other school subjects is shown clearly. The opinion of teachers regarding the presence or absence of such correlation has been sought and the results are presented in Tables 3.3.1.vii(a) and 3.3.1.vii(b).

Table 3.3.1.vii(a): Opinion of Teachers regarding Correlation of Mathematics with other Subjects – Level wise

Mathematics Curriculum at	Levels of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Lower Primary	62(95.38)	79(84.04)	43(76.79)	31(88.57)	215 (85.7)
Upper Primary	41(93.80)	73(80.22)	42(75.00)	33(86.80)	189 (82.2)
Secondary	26(92.9)	36(80.00)	57(73.10)	34(85.00)	153 (80.1)
Senior Secondary	15(78.9)	26(76.4)	31(77.5)	38(82.6)	110 (79.1)

Table 3.3.1.vii(b): Opinion of Teachers regarding Correlation of Mathematics with other Subjects - Locale wise

	Locale	
	Rural	Urban
Lower Primary	146(84.88)	69(87.34)
Upper Primary	128(82.00)	61(82.4)
Secondary	94(81.00)	59(78.7)
Senior Secondary	63(78.8)	47(79.7)

1. In the opinion of the teachers, the present curriculum in mathematics caters highly to the needs of other subjects at the lower primary (86%), upper primary (82%), secondary (80%) and senior secondary (79%) levels.

2. Further analysis of perception of teachers across levels reveals that the teachers at lower primary and senior secondary levels feel more strongly that the curriculum of mathematics caters to the needs of other subjects at all levels of school education.

3. Both rural and urban teachers feel equally strongly that the mathematics curriculum caters to the needs of other subjects at all levels.

viii. Correlation of Mathematics with daily life problems

Table 3.3.1.viii(a): Opinion of Teachers regarding Correlation of Mathematics with Daily life Problems – Level wise

Level	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Lower Primary	62.5	59.86	21.15	32.9	42.68
Upper Primary	38.6	51.4	20.5	30.59	35.0
Secondary	20.45	22.54	39.7	34	29.9
Senior Secondary	12.5	12.68	8.97	20	12.73

Table 3.3.1.viii(b): Opinion of Teachers regarding Correlation of Mathematics with Daily life Problems – Locale wise

Level of Teaching	Locale	
	Rural	Urban
Lower Primary	49.6	32.8
Upper Primary	42.0	25.0
Secondary	29.0	30.77
Senior Secondary	15.22	9.23

1. Regarding the relevance of the present mathematics curriculum at different levels to enable students to deal with the problems of day to day life, teachers opine that the lower primary (42.68%) and upper primary (35%) level curricula are more relevant than secondary (29.9%) and senior secondary (12.73%) level curricula.

2. A scrutiny of perception of teachers across levels reveals that the teachers at a particular level consider the mathematics curriculum at that level more relevant to deal with daily life situations than their counterparts at other levels, except

senior secondary teachers. The senior secondary teachers feel that the curriculum at that level least relevant compared to the curricula at other levels.

3. The rural teachers consider more strongly about the relevance of lower primary (49.6%), upper primary (42.0%) and senior secondary (15.22%)mathematics curricula to daily life situation than their urban counterparts (32.8%, 25.0% and 9.23% respectively). Where as about 30% of both rural and urban teachers feel that the mathematics curriculum at secondary level is relevant to daily life situation.

ix. Curriculum Load in Mathematics/Science

There is a feeling among the students, teachers and the parents that the curriculum in science and mathematics at the school level is burdensome for children. This view is mainly due to a feeling that the content at a particular level was once upon a time the prescribed content at a higher level(s). In other words, at least some of the content prescribed at a level is difficult for children to learn. Secondly, the time taken by children to learn content is much more than that earlier. In other words, the time available for children to learn is much less than what they need. The opinion of teachers on this issue is presented in table 3.3.1.ix(a) to 3.3.1.ix(b).

Table 3.3.1.ix(a): Opinion of Teachers regarding Science Burden – Level wise

Curriculum load in Science at	Level of teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Lower Primary	42.3	28.6	25.0	26.53	29.6
Upper Primary	21.2	43.96	20.7	22.4	28.5
Secondary	21.2	18.7	39.1	26.53	27.1
Senior Secondary	15.4	8.8	15.2	24.48	14.8

Table 3.3.1.ix(b): Opinion of Teachers regarding Science Burden – Locale wise

Curriculum load in Science at	Locale		Total
	Rural	Urban	
Lower Primary	33.0	23.5	29.6
Upper Primary	31.0	24.5	28.5
Secondary	24.6	32.0	27.4
Senior Secondary	12.0	20.0	14.8

1. Teachers with respect to the science curriculum feel that the curricula at lower primary (29.6%), upper primary (28.5%) and secondary (27.1%) levels are more burdensome for children than that at the senior secondary level (14.8%).

2. A scrutiny of data reveals that, teachers at a particular level consider the curriculum at that level more burdensome than their counterparts at other levels, except for senior secondary.

3. With respect to the lower and upper primary level science curricula, the rural teachers (33% and 31%) consider them more burdensome than their urban counterparts (23.5% and 24.5%). Whereas, an opposite trend to this is found with reference to the secondary and senior secondary curricula.

Table 3.3.1.ix(c): Opinion of Teachers regarding Mathematics Burden – Levelwise

Curriculum load in Mathematics	Level of teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Lower Primary	30.68	34.5	16.67	31.76	27.39
Upper Primary	15.91	33.09	32.69	24.71	28.24
Secondary	21.59	23.94	47.44	27.06	31.85
Senior Secondary	2.27	9.15	15.38	17.65	11.46

Table 3.3.1.IX.(d): Opinion of Teachers regarding Mathematics Burden – Locale wise

Curriculum load in Mathematics	Locale		Total
	Rural	Urban	
Lower Primary	31.16	22.05	27.39
Upper Primary	31.52	23.59	28.24
Secondary	30.79	33.33	31.85
Senior Secondary	9.78	13.85	11.46

In case of Mathematics Curriculum,

1. Teachers opine that the curriculum at secondary level (31.85%) is more burdensome for pupils that those at upper primary (28.24%), lower primary (27.39%) and senior secondary (11.46%) levels.

2. Teachers at primary (30.68%) and secondary (47.44%) levels feel that the curricula at those levels are more burdensome than the curricula at other levels. Whereas, teachers at upper primary (34.5%) and senior secondary (31.76%) consider that the curriculum at primary level is more burdensome that the curricula at other levels.

3. With respect to the lower and upper primary level mathematics curricula, the rural teachers (31.16% and 31.52% respectively) consider them more burdensome than their urban counterparts (22.05% and 23.59% respectively). In case of secondary and senior secondary curricula, an opposite trend to this perception is found.

x. Approach to Teaching Theorems in Geometry at Secondary Level

The emphasis in teaching of geometry in secondary schools is mostly on establishing the truth-value of generalizations (if proving theorems). In mathematics, the approach to proving theorems (true generalization) is deductive/axiomatic. However, the theorems can first be discovered through induction and the same can then be proved through deduction. The opinion of teachers regarding this issue is presented in tables 3.3.1.x(a) and 3.3.1.x(b).

Table 3.3.1.x(a): Opinion of Teachers regarding Approach to teaching Theorems – Level wise

Approach	Level of teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Deductive	62.5	62.7	68.9	68.2	65.8
Activity-Based (Inductive)	35.4	30.7	20	22.7	26.5
Inductive-deductive	2.1	6.7	11.1	9.1	7.8

Table 3.3.1.x(b): Opinion of Teachers regarding Approach to teaching Theorems – Locale-wise

Approach	Locale	
	Rural	Urban
Deductive	69.8	59.6
Activity- Based (Inductive)	27.0	25.3
Inductive-deductive	3.1	15.2

1. The opinion of teachers is more in favour of deductive approach to teaching of theorems (66%) than inductive (27%) and inducto-deductive (8%) approaches. This trend is found among teachers at each of the levels.

2. Further, analysis of perception of teachers across levels reveals that teachers at secondary and senior secondary levels are more in favour of deductive (68.9% and 68.2%) and inducto-deductive (11.1% and 9.1%) approaches than their counterparts at primary levels. Whereas teachers at lower (35.4%) and upper primary (30.7%) levels consider inductive approach as more appropriate for teaching theorems than their counterparts at secondary (20.0%) and senior secondary (22.7%).

3. The opinion towards deductive approach to teaching theorems is stronger among rural teachers (69.8%) than their urban counterparts (59.6%). Among those who favoured inductive approach, there is no rural and urban divide. Though very small percentage preferred inducto-deductive approach, the preference is more among the urban teachers (15.2%) than their rural counterparts (3.1%).

3.3.2 Perception of Teachers on Science Curriculum

The opinion of teacher regarding various aspects of Science Curriculum are presented here.

i. Teaching of EVS -1 and EVS-2

Presently Environmental Studies (EVS) is taught as a single subject in classes I and II, where as in classes III to V it is taught separately as EVS-1 and EVS-2. While EVS-1 covers Social Studies topics, EVS-2 deals with Science topics. The opinion of lower primary teachers who teach these subjects and also the teachers working at upper primary, secondary and senior secondary levels have been sought regarding the continuation of teaching EVS as two separate subjects in classes III to V. The summary of responses from 359 teachers (out of a total of 471) teaching at four levels is presented in Table 3.3.2.i(a). The responses of teachers grouped on the basis of their locale are presented in Table 3.3.2.i(b).

Table 3.3.2.i(a): Opinion of Teachers regarding teaching EVS separately for classes III to V-Level-wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	69%	70%	84%	75%	74%
Total	77	126	99	57	359

Table 3.3.2.i(b): Opinion of Teachers regarding teaching EVS separately for classes III to V- Locale-wise

	Locale	
	Rural	Urban
Yes	172(73%)	96(77%)

1. A majority of teachers (74%) agree with the existing practice of teaching EVS-1 and EVS-2 as separate subjects in classes III to V. Further, the teachers of secondary (84%) and senior secondary teachers (75%) are more in favour of

continuation of the existing practice than those at the lower levels (69% and 70%).

2. Urban teachers (77%) are more in favour of continuation of teaching EVS-1 and EVS-2 as two separate subjects in classes III to V as compared to the rural teachers (73%).

ii. Compulsory Science in School Education

Science is a compulsory subject in the existing curriculum up to class X and there is no option for students to drop science and take-up another subject. The purpose of teaching science as a compulsory subject is to provide scientific knowledge and to promote scientific attitude required for living an effective life in the present modern world. There is also a thinking that science should be offered as an optional subject since all the students do not have the aptitude to perform well in science at the terminal examination of secondary level as reflected in the results. The level and locale wise opinion of teachers on the above issue have been presented in Tables 3.3.2.ii(a) and 3.3.2.ii(b) respectively.

Table 3.3.2.ii(a): Opinion of Teachers on Science as a Compulsory Subject-Level-wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	91%	92%	98%	97%	94%
Total	77	125	113	62	377

Table 3.3.2.ii(b): Opinion of Teachers on Science as a Compulsory Subject-Locale-wise

	Locale	
	Rural	Urban
Yes	93%	97%

1. Most of the teachers (94%) agree with the continuation of science as a compulsory subject up to class X. This opinion regarding compulsory science is shared by the teachers working at each of the four levels of school education – the percentage being above 90% in all the sub groups.

2. The perception of rural and urban teachers is similar with respect to the continuation of science as a compulsory subject. The percentage of teachers in both the groups expressing this view is above 90.

iii. Choice Between Common Science Course and Different Levels Courses

The teachers who want that science should be taught as a compulsory subject at the secondary level have been asked whether they would favour one common science course for all the students or two separate courses – O-level course (Ordinary level) and A-level course (Advanced level) for students with different aptitude. The opinion of teachers on this issue is presented in Table 3.3.2.iii(a), 3.3.2.iii(b) and 3.3.2.iii(c).

Table 3.3.2.iii(a): Opinion of teachers on offering different levels of science courses-Level wise

Type of Course	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Common Course	79%	78%	73%	37%	75%
Different levels of Courses	21%	22%	27%	31%	25%
Total	57	113	106	54	330

Table 3.3.2.iii(b): Opinion of teachers on offering different levels of science courses-Locale-wise

Type of Course	Locale	
	Rural	Urban
Common Course	75%	74%
Different levels of Courses	25%	26%
Total	202	129

Table 3.3.2.iii(c): Opinion of teachers with different academic qualifications on offering different levels of science courses

	Teachers Qualifications			
	X Std.	+2 Level	Degree	PG Degree
One Science Course	39(77%)	65(82%)	71(76%)	73(68%)
Two Science Courses	12(23%)	14(18%)	23(24%)	34(32%)
Total	51	79	94	107

1. 75% of the teachers favour of one common science course for all students given by as against 25% who support different levels of science courses at secondary level. There is no variation in this opinion of the teachers at different levels of school education.

2. About three- fourth of both rural (75%) and urban (74%) teachers are in favour of one common course in science.

3. The opinion in favour of a common science course is also found among teachers grouped according to their academic background. Such an opinion is held most (82%) by teachers with senior secondary qualification and least (68%) by teachers with post-graduate qualification.

iv. Approach of Science Teaching

Science at secondary level can be taught in the form of separate subject/discipline – Physics, Chemistry, Botany and Zoology (Disciplinary approach) or as integrated science (Integrated approach). Depending on the approach the curriculum transaction will vary. Before revising the school curriculum framework, it will be useful exercise to find out the perceptions of teachers on this issue. The opinion of teachers regarding this is presented in Table 3.3.2.iv(a) and 3.3.2.iv(b).

Table 3.3.2.iv(a): Perception of Teachers at various levels regarding approach to Science teaching

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Disciplinary Approach	45%	46%	37%	29%	39%
Integrated Approach	55%	54%	63%	71%	61%
Total	65	88	107	62	322

Table 3.3.2.iv(b): Opinion of Rural and urban Teachers regarding Approach to Science Teaching

Approach	Locale	
	Rural	Urban
Disciplinary	43%	32%
Integrated	57%	68%
Total	200	123

1. More teachers are in favour of integrated approach to Science teaching with 61% as against 39% of teachers who favour disciplinary approach to the teaching of Science. Teachers working at lower primary, upper primary and secondary level (between 55% and 63%) share this opinion in favour of integrated approach. Among teachers working at senior secondary level 71% supported this view.

2. The opinion in favour of integrated approach to Science teaching is also reflected among the rural teachers (57%) and urban teachers (68%).

v. Qualification of Science Teachers in Primary Schools

The qualification for primary school teacher is senior secondary plus 2 years teacher training course in four southern states. But those who studied humanities course as well as those who did Science course at senior secondary level are required to teach Science in elementary schools. But the question arises whether senior secondary plus 2 year teacher training course is sufficient to prepare teachers of Science up to class 7 in view of the up gradation of Science curriculum or whether degree level Science should be the qualification. The opinion of teachers on this important issue has been presented in Table 33.2.v(a), 3.3.2.v(b) and 3.3.2.v(c).

Table 3.3.2.v(a): Opinion of Teachers regarding Science Knowledge for the Primary Teacher

Knowledge of Science for the Primary Teacher	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
X Standard	43%	37%	8%	6%	24%
Senior Secondary	35%	36%	41%	42%	38%
Degree	22%	27%	51%	52%	38%
Total	77	122	110	65	374

Table 3.3.2.v(b): Opinion of Rural and Urban Teachers regarding Knowledge of Science for the Primary Teacher

Knowledge of Science for the Primary teacher	Locale	
	Rural	Urban
X Std	29%	16%
Senior Secondary	39%	37%
Degree	32%	47%
Total	236	139

Table 3.3.2.v(c): Opinion of Teachers with different qualifications regarding Science Knowledge for the Primary Teacher

Knowledge of Science for the primary teacher	Teachers Qualifications			
	X Std.	Senior Secondary	Degree	PG Degree
X Std	49%	32%	23%	6%
Senior Secondary	37%	36%	38%	41%
Degree	14%	32%	39%	53%
Total	65	90	98	121

1. The opinion of Teachers is equally divided on this issue with 38% favouring knowledge of Science at senior secondary level and 38% favouring Science knowledge at degree level. Only 24% of teachers are in favour of knowledge of Science at X standard level for Science teachers. A large number of teachers at the senior secondary (52%) and secondary levels (51%) are in favour of Science knowledge up to degree to teach elementary school Science subject when compared to teachers working at lower primary (22%) and upper primary level (27%).

2. Among the urban teachers (47%), the trend of opinion is in favour of Science knowledge at degree level for elementary Science teachers compared to lesser number (37%) favouring Science knowledge at senior secondary level for elementary school teachers. But, among the rural teachers (39%), the trend is in favour of Science knowledge up to senior secondary level compared to 32% who favoured degree level Science knowledge for elementary school Teachers.

3. The teachers with higher qualification i.e. Post-graduation degree (53%) are in favour of Science knowledge at degree level for teaching primary school science followed by teachers with degree qualification (39%), senior secondary (32%) and X standard (14%) respectively. This is also evident from the opinion of the teachers regarding X standard knowledge of Science for teaching elementary school Science – teachers with X standard (49%) followed by senior secondary (32%), degree (23%) and Post-graduation (6%) respectively. The general trend is that the teachers with higher qualifications are suggesting higher qualification for Science teachers and vice versa.

vi. Link of Science Curriculum with Societal/Environmental Issues

In the present world, people expect that the learning of Science is incomplete without awareness of environmental and societal issues. In this

context, the perception of teachers regarding the existing school science curriculum on this issue has been gathered and presented in Table 3.3.2.vi(a) and 3.3.2.vi(b).

Table 3.3.2.vi(a): Teachers' Perception on Societal and Environmental Issues

Environmental Issues in Science	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	88%	74%	72%	64%	75%
Total	76	124	106	64	370

Table 3.3.2.vi(b): Rural and Urban Teachers' Perception on Environmental Issues

Environmental Issues in Science	Locale	
	Rural	Urban
Yes	75%	74%
Total	231	140

1. The vast majority of responding teachers (75%) agrees that the present Science curriculum helps the students to understand environmental and societal issues. Among those teachers who agree with this, the maximum number (88%) is from those working at lower primary level and the minimum number (64%) is from senior secondary level.

2. There is no difference of opinion between teachers working in rural and urban areas on the above issue, since the percentage of teachers expressing the agreement are 75 and 74 respectively.

vii. Scope for Scientific Skills and Experimentation

Many educationists feel that school science curriculum should have scope for developing some basic scientific skills include simple experiments among the students. Hence, the opinion of teachers regarding ways of giving more emphasis on this aspect of science curriculum has been gathered. Three ways of achieving this emphasis on scientific skills were placed before the teachers and they have asked to select the method most suitable according to them. The summary of responses is presented in Tables 3.3.2.vii(a) and 3.3.2.vii(b).

Table 3.3.2.vii(a): Teachers' Perception on How to Promote Scientific Skills - Levelwise

Ways to Promote Scientific Skills	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Specific periods	29%	21%	25%	11%	22%
Field visits	23%	26%	18%	20%	22%
Demonstrations	48%	53%	57%	57%	69%
Total	69	112	101	62	344

Table 3.3.2.vii(b): Rural and Urban Teachers' Perception on How to Promote Scientific Skills

Ways to Promote Scientific Skills	Locale	
	Rural	Urban
Specific periods	21%	23%
Field visits	25%	17%
Demonstrations	54%	60%
Total	209	136

1. The trend of teacher's opinion (56%) was in favour of 'Demonstrations in the classroom' as the most suitable method of imparting scientific skills. The opinion is equally divided regarding the suitability of 'Field visits' (22%) and 'Scientific Periods for this purpose (22%).

2. The above opinion regarding classroom demonstrations is also reflected among the urban teachers (60%) and rural teachers (54%).

viii. Foundation for Science and Mathematics at Senior Secondary Stage

There are two views regarding the objective of teaching Science and Mathematics at Secondary stage. Firstly, it can serve as the foundation for continuing the study of Science and Mathematics at senior secondary level. Secondly, it can provide basic knowledge and skills in Science and Mathematics for students to live an effective life in present world of Science and Technology. Hence, the opinion of teachers regarding first view of secondary science and mathematics stated above has been gathered. The summaries of responses are shown in Table 3.3.2.viii(a) and 3.3.2.viii(b).

Table 3.3.2.viii(a): Teachers' Perception regarding the Foundation of Science and Mathematics at Senior Secondary Stage - Levelwise

Foundation of Course for Senior Secondary	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Science	89%	87%	79%	93%	86%
Mathematics	11%	13%	21%	7%	14%
Total	56	87	105	55	303

Table 3.3.2.viii(b): Rural and Urban Teachers' Perception regarding Foundation of Science and Mathematics at Senior Secondary Stage

Foundation of Course for Senior Secondary	Locale	
	Rural	Urban
Science	90%	80%
Mathematics	10%	20%
Total	186	118

1. The verdict of opinion is clear regarding the utility of secondary school science as foundation for studying science at senior secondary level – with 86% of teachers agreeing with this view. But the opinion regarding secondary school mathematics, as foundation for senior secondary mathematics is clearly negative. Only 14% of teachers agree that School Mathematics can serve as foundation for senior secondary.

2. Most of the rural teachers (90%) and urban teachers (80%) endorse the opinion that the present secondary school science can serve as foundation for the study of Science at Senior Secondary level.

ix. Stress and Anxiety at Secondary and Senior Secondary Level

The overload of content and curriculum in Science and Mathematics at secondary and senior secondary level may lead to Stress and Anxiety in the students. The opinion of teachers regarding this issue is shown in Table 3.3.2.ix(a) and 3.3.2.ix(b).

Table 3.3.2.ix(a): Teachers' Perception on Whether Science and Mathematics cause Stress and Anxiety in Students

Stress and Anxiety in Students due to Science and Mathematics	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	49%	45%	66%	63%	57%
Total	51	69	107	57	284

Table 3.3.2.ix(b): Rural and Urban Teachers' Perception regarding Stress and Anxiety due to Science and Mathematics

Stress and Anxiety in Students due to Science & Mathematics	Locale	
	Rural	Urban
Yes	53%	63%
Total	164	121

1. Many teachers (57%) are of the opinion that the present courses in Science and Mathematics at secondary and senior secondary level cause the stress and anxiety among the students. 49% of lower primary school teachers, 45% of upper primary school teachers, 66% of secondary school teachers and 63% of senior secondary teachers expresses the same opinion.

2. 53% of rural teachers and 63% of urban teachers agree that the existing Science and Mathematics curriculum at secondary and senior secondary cause Stress and Anxiety among the students. Thus on this issue there is no divergence of opinion between the rural and urban teachers.

3.4 PERCEPTIONS OF TEACHERS ON ISSUES RELATED TO SOCIAL SCIENCE CURRICULUM

In this section, the analysis of responses of teachers with respect to questions regarding Social Science Curriculum is presented along with the main trends in their perceptions. The responses of teachers from the four stages of school education have been analysed. There are 14 questionnaire items in this section. The analysis is presented in the following tables.

3.4.1 Qualification for Teaching Social Sciences at Upper Primary and Secondary Levels

The qualification required for teaching at the primary level is 12 years of general education with or without social studies as a subject at +2 level and 2 years of professional education. The qualification for teaching social studies at secondary level is a degree in humanities and a B.Ed. with specialization in teaching social studies. However, the teachers may or may not have studied all the subjects of social science. The opinions of teachers regarding background knowledge required for teaching social science are presented in tables 3.4.1(a) and 3.4.1(b).

Table 3.4.1(a): Opinion of Teachers regarding Qualification for Teaching Social Sciences at Upper Primary Level – Level wise

Subject	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
History	48.9	75.35	41.67	47.06	54.14
Geography	51.14	76.76	40.38	48.24	54.78
Economics	17.05	36.62	19.87	18.82	24.20
Political Science	26.14	50.70	26.92	30.59	34.61
Sociology	43.18	50.70	28.21	30.59	38.22

Table 3.4.1(b): Opinion of Teachers regarding Qualification for Teaching Social Sciences at Upper Primary Level –locale wise

Subject	Locale	
	Rural	Urban
History	63.41	41.54
Geography	64.13	42.05
Economics	27.90	18.97
Political Science	41.30	25.13
Sociology	46.74	26.15

Table 3.4.1(c): Opinion of Teachers regarding Qualification for Teaching Social Sciences at Secondary Level – Level wise

Subject	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
History	29.55	29.58	60.26	64.71	46.07
Geography	28.41	31.69	64.10	67.06	48.20
Economics	26.15	29.58	64.74	67.06	47.35
Political Science	26.15	31.69	60.90	68.24	46.92
Sociology	28.41	30.99	60.90	64.71	46.50

Table 3.4.1(d): Opinion of Teachers regarding Qualification for Teaching Social Studies at Secondary Level – Locale wise

	Locale	
	Rural	Urban
History	44.57	48.21
Geography	45.65	51.79
Economics	43.48	52.82
Political Science	42.75	52.82
Sociology	44.20	49.74

1. A scrutiny of percentages of teachers indicating the background of subjects under social science required for teaching it revealed a clear pattern in perception. History and geography are the two subjects considered as essential by about 54% of teachers followed by sociology (38%), political science (35%) and economics (24%) for teaching social science at upper primary level.

2. This trend in the preference in background knowledge for teaching social science at upper primary level is discernable among teachers at all levels. However, the percentage of teachers preferring the knowledge of the subjects in that order varies from level to level. The teachers at primary levels feel more strongly about the need for knowledge of each of the subjects than their counterparts at secondary and senior secondary levels.

3. Among the rural and urban teachers also, a similar trend in preference in order of importance of knowledge of the subjects is noticed. However, rural teachers are more in favour of knowledge of each of the subjects than their urban counterparts.

4. Regarding the need for knowledge of different subjects under social science for teaching it at the secondary level, teachers by and large give equal importance for all subjects (46% to 48%). That is, teachers in

general opine that a teacher of social science at secondary must have knowledge of history, geography, sociology, political science and economics.

5. This trend of opinion in favour of knowledge in all subjects exists among teachers at all levels. The opinion towards knowledge of subjects prevails strongly among senior secondary teachers followed by secondary, upper primary and lower primary teachers in that order.

6. The opinions of importance of knowledge of all subjects under social science for teaching it at secondary level prevails among both rural and urban teachers with the urban teachers opining more strongly than their rural counterparts.

3.4.2 Social Science Laboratory

Like in science, a need for a social science laboratory in schools is felt. The curriculum framework recommends for organizing learning activities through practical work in geography. The opinion of teachers regarding this issue is presented in tables 3.4.2(a) to 3.4.2(f).

Table 3.4.2(a): Opinion of Teachers regarding need for Social Sciences Lab – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	80.95	73.95	82.14	73.97	77.66
Total	63	119	112	73	367

Table 3.4.2(b): Opinion of Teachers regarding need for Social Sciences Lab – Locale wise

	Locale	
	Rural	Urban
Yes	75.0	81.25
Total	224	114

Table 3.4.2(c): Opinion of Teachers regarding the level at which Social Sciences Lab is to be Provided – Level wise

Level	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Upper Primary	80.39	66.29	19.57	24.53	45.97
Secondary	13.73	22.47	71.74	41.51	40.35
Sr. Secondary	5.88	11.24	8.69	33.96	13.68
Total	51	89	92	53	285

Table 3.4.2(d): Opinion of Teachers regarding need for Social Sciences Lab – Locale wise

Level	Locale	
	Rural	Urban
Upper Primary	53.57	35.04
Secondary	33.93	49.57
Senior Secondary	12.50	15.39
Total	168	117

Table 3.4.2(e): Opinion of Teachers regarding Practicum in Teaching Geography – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	90.32	77.88	89.52	85.51	85.10
Total	62	113	105	69	349

Table 3.4.2(f): Opinion of Teachers regarding Practicum in Teaching Geography – Locale wise

	Locale	
	Rural	Urban
Yes	86.92	82.35
Total	214	136

1. The perception of a large proportion (78%) of teachers is in favour of providing social science laboratory in schools. The teachers at secondary (82%) and primary (81%) levels holding this view more strongly than their counterparts (74%) at both upper primary and senior secondary levels.

2. Similar trend favouring social science laboratory is also noticed among large proportion of rural (75%) and urban (81%) teachers, with urban teachers

favouring more strongly.The need for social science laboratory is felt at upper primary (46%) and secondary (45%) levels than at senior secondary level (14%).

3. The rural teachers (54%) feel the need for social science laboratory in upper primary schools more strongly than their urban counterparts (35%). The trend in perception about social science laboratory at secondary and senior secondary levels is exactly the opposite.

4. Most of the teachers (85%) feel the need for organizing practical in geography. The primary and secondary school teachers (90%) hold such an opinion most, more strongly than senior secondary (86%) and upper primary (78%) of teachers.

5. The rural teachers (87%) hold this opinion more strongly than the urban teachers (82%).

3.4.3 Coverage of socio-cultural Issues in Social Science Curriculum

The study of social science as a component of general education is of critical importance in facilitating development in the learners appropriate knowledge, skills, attitudes and values relevant in the context of social, economic, political and environmental goals in the local, national and global perspectives. The opinion of teachers about the adequacy of social science curriculum to address to such socio-cultural, political and economic issues is presented in tables 3.4.3(a) and 3.4.3(b).

Table 3.4.3(a): Opinion of Teachers regarding Coverage of Socio Cultural issues in Social Sciences Curriculum – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	61.67	67.26	51.38	52.17	58.40
Total	60	113	109	69	351

Table 3.4.3(b): Opinion of Teachers regarding Coverage of Socio- Cultural issues in Social Sciences Curriculum – Locale wise

	Locale	
	Rural	Urban
Yes	64.43	50.0
Total	216	136

About 58% of teachers opine that the social science curriculum addresses socio-cultural issues. Further analysis of perception of teachers across levels reveals that the teachers at primary levels (62 to 67%) feel more strongly than secondary (51%) and senior secondary (52%) teachers.

The rural teachers (64%) feel more strongly than urban teachers (50%) that social science curriculum addresses socio-cultural issues.

3.4.4 Extent of Coverage of Socio-cultural Issues

Regarding the extent of coverage of socio-cultural issues in social science curriculum, majority (59%) of the respondents opine that the issues are addressed partially. Whereas 25% and 15% of respondents feel that social science curriculum address socio-cultural issues fully and very little extent respectively.

Table 3.4.4(a): Opinion of Teachers regarding the extent of Coverage of Socio cultural issues- Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Fully	36.59	30.38	18.18	17.39	25.49
Partially	36.59	54.43	69.70	73.91	59.48
Very little	26.82	15.19	12.12	8.70	15.09
Total	41	79	66	46	232

Table 3.4.4(b): Opinion of Teachers regarding the extent of Coverage of Socio- cultural issues- Locale wise

	Locale	
	Rural	Urban
Fully	28.76	18.75
Partially	56.86	65.0
Very little	14.38	16.25
Total	153	80

1. A scrutiny of opinions of teachers across levels and locales reveals that similar trend in perceptions prevails among teachers at all levels and locales.

2. The lower primary (37%) and upper primary (30%) teachers opine that social science curriculum addresses socio-cultural issues fully as against 18% of secondary and 17% of senior secondary school teachers.

3.The rural teachers (28%) feel more strongly about social science curriculum addressing to socio-cultural issues fully than their urban counterparts (18%).

3.4.5 Effectiveness in enabling Students to respond to Socio-cultural Issues

The social science curriculum not only should contain content related to socio-cultural issues, but its organization should also help the learner to develop sensitivity to respond to those issues. The perception of teachers regarding this aspect of social science curriculum is presented in tables 3.4.5(a) to 3.4.5(d).

Table 3.4.5(a): Opinion of Teachers regarding Effectiveness of Social Science Curriculum to sensitize students to Socio-cultural Issues – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	75.86	65.55	58.56	58.46	63.74
Total	58	119	111	65	353

Table 3.4.5(b): Opinion of Teachers regarding Effectiveness of Social Sciences Curriculum to sensitize students to Socio-cultural Issues– Locale wise

	Locale	
	Rural	Urban
Yes	61.88	66.41
Total	223	131

Table 3.4.5(c): Opinion of Teachers regarding the level of sensitivity to Socio- cultural problems – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Fully	13.33	26.51	22.97	26.53	23.11
Partially	51.11	57.83	66.22	69.39	61.35
Very little	35.56	15.66	10.81	4.08	15.54
Total	45	83	74	49	251

Table 3.4.5(d): Opinion of Teachers regarding the level of sensitivity to Socio- cultural problems – Locale wise

	Locale	
	Rural	Urban
Fully	19.74	28.28
Partially	94(61.84)	60(60.61)
Very little	28(18.42)	11(11.11)
Total	152	99

A majority of teachers (64%) opine that the existing social science curriculum helps students to be sensitive to respond to the socio-cultural needs/problems of present day India.

Further analysis of opinion across the levels reveals that lower primary (76%) and upper primary (66%) hold this view more strongly than their counterparts at secondary and senior secondary levels (59%).

The urban teachers (66%) feel more strongly about the effectiveness of social science curriculum to develop sensitivity among learners to respond to socio-cultural concerns than their rural counterparts (62%).

Among those respondents who expressed positively about the effectiveness of social science curriculum in helping students to develop sensitivity to respond to socio-cultural needs/problems, a majority (61%) indicates that the curriculum is effectively partially. Twenty-three and fifteen percent of teachers feel that the curriculum is fully effective and effective to a very little extent.

3.4.6 Weightage To Subjects Under Social Science

The study of social sciences, at the upper primary stage onwards is expected to comprise elements of history, geography, civics and economics to promote in the earner an understanding of his/her physical and social environment. and an appreciation of the cultural heritage of India and various cultures of the World. The subjects are expected to have differential weightage at different levels depending on the needs and developmental characteristics of the

learner. The opinion of teachers regarding weightage to be given to the subjects at different levels is presented in table 3.4.6.

Table 3.4.6: Opinion of Teachers regarding Average weightage to each subject area up to class X

	Primary	Upper Primary	Secondary
History	34.06	33.07	30.67
Geography	29.28	27.26	25.11
Civics	22.07	22.07	22.69
Economics	17.69	18.75	19.94
Any other	20.34	20.18	15.13

Teachers across levels suggest different weightage to history, geography, civics and economics in that order. More weightage has been given to history and geography at primary level compared to upper primary and secondary levels. Civics has been given almost equal weightage at all the three levels – primary, upper primary and secondary. More weightage was given to economics at secondary level compared to primary and upper primary levels.

3.4.7 Approach To Teaching Social Sciences

Social science like science at upper primary and secondary levels comprises subject areas, which can be taught following a disciplinary and/or integrated approach. The opinion of teachers regarding this issue is presented in Tables 3.4.7(a) to 3.4.7(d).

Table 3.4.7(a): Opinion of Teachers regarding approaches for teaching social studies – Level wise

Approach to Teaching	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Integrated Approach	63.64	66.30	63.44	55.56	62.90
Composite Course	36.36	29.35	32.26	37.04	32.86
Thematic Approach	0.0	4.35	4.30	7.40	4.24
Total	44	92	93	54	283

Table 3.4.7(b): Opinion of Teachers regarding approaches for teaching social studies – Locale wise

Approach to Teaching	Locale	
	Rural	Urban
Integrated Approach	61.93	64.81
Composite Course	36.36	26.85
Thematic Approach	1.71	8.33
Total	176	108

Table 3.4.7(c): Opinion of Teachers regarding the use of suggested approaches – Level wise

Extent of use	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Not at all	4.17	2.24	5.75	18.52	6.83
Some Extent	68.75	78.65	75.86	77.78	75.90
Large Extent	27.08	19.11	18.39	3.70	17.27
Total	48	89	87	54	278

Table 3.4.7(d): Opinion of Teachers regarding the use of suggested approaches – Locale wise

Extent of Use	Locale	
	Rural	Urban
Not at all	3.47	12.26
Some Extent	78.03	72.64
Large Extent	18.50	15.10
Total	173	106

1. While 63% of teachers opined that social sciences should be taught as an integrated subject , 33% favoured. Composite Course. Such a preference for an integrated to teaching of social science is noticed among teachers at lower primary, upper primary and secondary levels, where the percentage of teachers preferring the approach is almost double of those favouring Composite Course. At the secondary level while 56 percent of teachers are in favour of integrated approach, 37% are in favour of Composite Course. At this level, only 7% favoured thematic approach.

2. The rural (62%) and urban (65%) difference in preference for integrated approach to teaching social sciences is marginal. However, the percentage of rural teachers (36) favouring composite course is higher than their urban counterparts (27%). Though the percentage of rural and urban teachers

favouring thematic approach for teaching social sciences is negligible, the rural (2%) and urban (8%) divide is substantial.

3. Regarding the extent of implementation the suggested approach in schools, three-fourths of teachers opined that the suggested approach is being followed in schools to some extent only. Only less than one-fifth of teachers felt that the suggested approach is being followed to a large extent. This trend in opinion is noticed among teachers at upper primary and secondary levels. While 27% of primary schools teachers feel that suggested approach is being followed to a large extent, 19% of senior secondary school teachers opine that the suggested approach is not at all being followed. The difference in opinion between rural and urban teachers on this issue is almost negligible except between those opinions that the suggested approach is not at all being followed in schools.

3.4.8 Curriculum Load in Social Sciences

Students, teachers and parents generally feel that the curriculum of social sciences at the school level is burden some for learners both in terms of quantity of content to be learnt and abstraction involved in learning thee same. The opinion of teachers on this issue is presented in tables 3.4.8(a) to 3.4.8(d).

Table 3.4.8(a): Opinion of Teachers regarding the Social Sciences Curriculum load for students – Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	51.92	49.50	43.27	47.89	47.56
Total	52	101	104	71	328

Table 3.4.8(b): Opinion of Teachers regarding the Social Sciences Curriculum load for students – Locale wise

	Locale	
	Rural	Urban
Yes	46.70	48.48
Total	197	132

Table 3.4.8(c): Opinion of Teachers regarding the Over load of Social Sciences Curriculum – Level wise

Over load of curriculum at	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Upper Primary	75.86	79.63	27.27	42.86	54.91
Secondary	20.69	16.67	70.91	40.0	39.31
Sr. Secondary	3.45	3.70	1.82	17.14	5.78
Total	29	54	55	35	173

Table 3.4.8(d): Opinion of Teachers regarding the Over load of Social Sciences Curriculum – Locale wise

Over load of curriculum at	Locale	
	Rural	Urban
Upper Primary	72.28	30.56
Secondary	24.75	59.72
Senior Secondary	2.97	9.72
Total	101	72

1. From among the respondents, about 48% of teachers feel that the social science curriculum is overloaded. This view is more prominent among lower primary (52%) and upper primary (50%) teachers than their counterparts at secondary (43%) and senior secondary (48%) levels.

2. Both the rural (47%) and urban (48%) feel equally strongly that the curriculum is overloaded.

Regarding the level at which the curriculum is overloaded, teachers as a whole opine that the curricula at upper primary (55%) and secondary (39%) levels are overloaded. Only six percent of teachers feel that the curriculum at senior secondary level is overloaded.

Further scrutiny of data reveals that teachers at both thee primary levels and secondary level consider more strongly that the curriculum at upper primary and secondary levels respectively overloaded than the curriculum at other levels. The teachers at senior secondary feel that thee curricula at upper primary (43%)

and secondary level (40%) are more over loaded than thee curriculum at senior secondary level.

The rural teachers (72%) feel more strongly that the curriculum at upper primary level is overloaded than their urban counterparts (31%). The opposite trend in perception is found with reference to the secondary and senior secondary curricula.

3.4.9 Adequacy of social sciences at Secondary Level for further study

On the factors determining the choice and organization of content of social sciences at secondary level is that thee content provides an adequate bases for study of thee subject at senior secondary level. The opinion of teachers on this issue is presented in tables 3.4.9(a) and 3.4.9(b).

Table 3.4.9(a): Opinion of Teachers regarding the foundation of Social Sciences at Senior Secondary level – Level wise

	Level of Teaching				Total
	Primary	Upper Primary	Secondary	Senior Secondary	
Yes	36(81.82)	51(75)	86(86.87)	45(80.36)	218(81.65)
Total	44	68	99	56	267

Table 3.4.9(b): Opinion of Teachers regarding the foundation of Social Sciences at Sr. Secondary level – Locale wise

	Locale	
	Rural	Urban
Yes	82.61	80.37
Total	161	107

1. Teachers (82%) considered that the social science curriculum at secondary level provides the necessary foundation for study of the subject at senior secondary level. This view is held by most of the teachers at all levels with secondary school teachers (87%) feeling more strongly than their counter parts aft Lower Primary (82%), Upper Primary (75%) and senior secondary (80%) levels.

2. Most of the rural (83%) and urban (80%) teachers endorse the opinion that the secondary school social science curriculum serves as a foundation for the study of social science at senior secondary level.

3.4.10 Coverage of Core Components in the Social Science Curriculum

Social sciences is indeed the singular curricular area which can prove to be the most effective tool for providing education in the context of all the core components indicated in the NPE-86. The curriculum of social sciences, therefore should have adequate coverage of core components in terms of content and learning activities. The opinion of teachers regarding this aspect is presented in tables 3.4.10(a) and 3.4.10(b).

Table 3.4.10(a): Opinion of Teachers regarding the Curricular components in the existing Social studies Curriculum–Level wise

Core Curricular Components	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
India's Freedom Movement	31.82	35.21	41.03	44.71	38.22
Constitutional Obligations	22.73	23.94	26.28	32.94	26.11
National Identity	22.73	23.94	23.72	20 .0	22.93
Our Cultural Heritage	26.14	36.62	35.26	32.94	33.53
Equality of Sexes	25.0	19.01	13.46	22.35	18.90
Protection of Environment	27.27	27.46	34.62	29.41	30.15
Egalitarianism, Democracy & Secularism	22.73	25.35	30.13	22.35	25.90
Removal of Social Barriers	20.45	22.54	19.23	15.29	19.75
Population and Small family Norm	26.14	28.87	32.69	31.76	30.15
Human Rights	18.18	30.99	31.41	23.53	27.39
Scientific Temper	26.14	24.65	21.15	17.65	22.51
National Integration	28.14	34.51	31.41	28.24	31.21

Table 3.4.10(b): Opinion of Teachers regarding the Curricular components in the existing Social studies Curriculum – Locale wise

	Locale	
	Rural	Urban
India's Freedom Movement	43.12	31.28
Constitutional Obligations	27.90	24.10
National Identity	26.81	17.44
Our Cultural Heritage	36.32	28.21
Equality of Sexes	20.65	16.41
Protection of Environment	31.88	27.69
Egalitarianism, Democracy & Secularism	28.62	22.05
Removal of Social Barriers	23.55	14.36
Population and Small family Norm	32.25	27.18
Human Rights	31.16	22.05
Scientific Temper	26.81	16.41
National Integration	35.87	24.62

1. The opinions of teachers at all levels taken together reveals that thee core components are adequately reflected in the existing social science curriculum. This is evident from the data that less than one-third of teachers considered that the core components are adequately reflected in the curriculum except the core components, 'India's Freedom movement' (38%) and 'our cultural heritage ' (34%).

2. A scrutiny of opinions of teachers across levels reveals similar perception about coverage of core components in social sciences curriculum in general. though there is variation in percentage of teachers holding this view.

3. Between rural and urban teachers. greater proportion of rural teachers think that thee core components are adequately reflected in social science curriculum than their urban counterparts.

3.4.11 Study Of Social Sciences/Science As Part Of General Education at +2 Level

In the existing curriculum at +2 level, students who opt for science stream are not required to study social sciences as a subject. However, it is felt that there is a need for strengthening further he learning of core components by studying social sciences as part of general education. The opinions of teachers on this issue is presented in tables 3.4.11(a) and 3.4.11(b).

Table 3.4.11(a): Opinion of Teachers regarding the Learning Social Science in General Education for Science students at Sr. Secondary level – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	90.74	80.23	60.36	71.83	73.29
Total	54	86	111	71	322

Table 3.4.11(b): Opinion of Teachers regarding the Learning Social Science in General Education for Science students at Sr. Secondary level – Locale wise

	Locale	
	Rural	Urban
Yes	76.80	67.44
Total	194	129

A large majority of teachers (73%) feel that social sciences should be studied by students of science stream as a part of general education at senior secondary level.

This view is held by teachers at all levels with most of the lower primary (91%), upper primary (80%) and secondary (73%) favouring the study of social sciences at +2 level.

Between the rural and urban teachers, the rural teachers (77%) favour more strongly the study of social sciences as part of general education by students of science stream at +2 level than their urban counterparts (67%).

3.4.12 Study of Science as a Part of General Education at +2 Level

The students who opt for humanities stream at +2 level, do not study science subjects as a part of general education though scientific knowledge and skills acquired during ten-years schooling is considered to be inadequate. The perceptions of teachers regarding this issue are presented in tables 3.4.12(a) and 3.4.12(b).

Table 3.4.12(a): Opinion of Teachers regarding the Learning Science in General Education for Social Science students at Sr. Secondary level – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	92.45	77.91	61.90	74.29	74.20
Total	53	86	105	70	314

Table 3.4.12(b): Opinion of Teachers regarding the Learning Social Science in General Education for Science students at Sr. Secondary level – Locale wise

	Locale	
	Rural	Urban
Yes	75.26	72.0
Total	190	125

A large proportion of teachers (74%) opine that students opting for humanities stream at +2 level should study science as a part of general education.

Teachers across the levels hold similar opinion with teachers at lower primary (92%), upper primary (78%) and senior secondary (74%) favouring the study of science at +2 level more strongly than their counterparts at secondary level (62%).

Both rural (75%) and urban (72%) teachers favour the study of science as a part of general education at +2 level.

3.4.13 Subjects To Be Studied Under Social Sciences At +2 Level

The subjects, history, geography, civics/political science and economics form social science. The students at upper primary and secondary levels study the subjects as part of social science. However, at +2 level, students of humanities stream are required to study any three of the subjects. It is felt that students should study all subjects, in order to achieve thee objectives of teaching

social sciences. The opinion of teachers about this view is presented in tables 3.4.13(a) and 3.4.13(b).

Table 3.4.13(a): Opinion of Teachers regarding the compulsory History, Geography, Civics & Economics at Sr. Secondary Level – Level wise

	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Yes	80.39	84.71	77.14	77.46	79.81
Total	51	85	105	71	312

Table 3.4.13(b): Opinion of Teachers regarding the compulsory study of History, Geography, Civics and Economics at Senior Secondary Level – Locale wise

	Locale	
	Rural	Urban
Yes	82.11	76.42
Total	190	123

1. Most of the teachers (80%) feel that the study of history, geography, civics and economics should be compulsorily under humanities stream.

2. Teachers across the levels of school education agree to this view. More than eighty percent of primary teachers and three-fourths of both secondary and senior secondary teachers favour study of all subjects under social sciences compulsorily.

3. Teachers across the locales also agree to this view though thee rural teachers (82%) favour more strongly than their urban counterparts (76%).

3.4.14 Attainment Of Objectives Of Social Sciences At Upper Primary And Secondary Levels

The curricula at upper primary and secondary levels are expected to develop different kinds of knowledge, attitudes and skills related to learner's immediate and distant environment. The perceptions of teachers, particularly those who are to be responsible, regarding attainment are presented in tables 3.4.14(a) to 3.4.14(d).

Table 3.4.14(a): Opinion of Teachers regarding the attainment of objectives in Social Science at Upper Primary level – Level wise

Objectives	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Awareness	55.26	43.91	36.23	62.0	47.28
Appreciation	15.79	15.85	34.78	20.0	22.18
Knowledge	28.95	40.24	28.99	18 .0	30.54
Total	38	82	69	50	239

Table 3.4.14(b): Opinion of Teachers regarding the attainment of objectives in Social Science at Upper Primary level – Locale wise

Objectives	Locale	
	Rural	Urban
Awareness	44.37	51.69
Appreciation	19.21	26.97
Knowledge	36.42	21.34
Total	151	89

Table 3.4.14(c): Opinion of Teachers regarding the attainment of objectives in Social Science at Secondary level – Level wise

Objectives	Level of Teaching				Total
	Lower Primary	Upper Primary	Secondary	Senior Secondary	
Awareness	40.74	14.58	13.13	28.0	20.09
Understanding of India's Freedom	14.82	20.84	15.15	20.0	17.41
Understanding of Contemporary world	44.44	64.58	71.72	52.0	62.50
Total	37	48	99	50	224

Table 3.4.14(d): Opinion of Teachers regarding the attainment of objectives in Social Science at Secondary level – Locale wise

Objectives	Locale	
	Rural	Urban
Awareness	19.53	20.83
Understanding of India's Freedom	18.75	15.63
Understanding of Contemporary world	61.72	63.54
Total	128	96

From teachers' perceptions, it is clear that the attainment of objectives of teaching social sciences at upper primary level is not satisfactory. Forty-seven percent of teachers feel that the present curriculum develops an awareness about India's past – social, cultural and scientific developments. Thirty-percent feel that 'knowledge of the civic and political institutions and also the contemporary social and economic conditions' is developed. 'Appreciation for diversities in ways of living and interdependence of various regions of India and the World' is least developed (22%). Teachers at lower primary (55%) and senior secondary (62%) levels opine more strongly about development of awareness about India's past than their counterparts at upper primary (44%) and secondary (36%) levels. Teachers at upper primary level (40%) feel more strongly about development of knowledge, the civic and political institutions and also about contemporary issues than their counter parts at other levels (18 to 29 %). According to the same group (16%), 'appreciation for India's and Worlds' diversities is least attained compared to their counterparts at secondary (35%) and senior secondary (20%).

Rural and urban divide regarding attainment of objectives exists.

At the secondary, teachers feel that except for the objective. 'understanding of the contemporary World problems and India's role in world peace and international cooperation' (63%), the other objectives - `understanding of India's freedom and cultural heritage' (17%) and `awareness about human civilization' (20%) are not attained through the present curriculum.

This view is held more strongly by teachers who are expected to facilitate attainment of the objectives than their counterparts at other levels.

The rural and urban teachers are equally emphatic in holding such view.

CHAPTER IV

FINDINGS AND DISCUSSION

This study is an attempt to ascertain the perceptions of teachers of Karnataka on School Curriculum. The Curriculum is an expression of the aspirations and the expectations of a nation. As implementer of the curriculum, a teacher ought to know the aims and objectives of a curriculum as well as the ways and means of achieving them. Lack of such a knowledge, would result in non-realisation of the aspirations and expectations of the nation. A Teacher's perception of curriculum, hence, is important for a curriculum developer and it has professional implications.

Under this study, perceptions of teachers in Karnataka were obtained on the general curricular issues and the issues related to language education, science and mathematics education and social science education. These issues may have pertained to a particular level in school education or to all levels. The findings, their discussion and implications have been presented in the following.

4.1 COMMON CURRICULAR ISSUES

4.1.1 Attainment of Curricular Outcomes

The present curriculum, as perceived by the teachers, has failed to ensure the all round development of children, particularly in emotive and psychomotor domains. Even in the cognitive domain, the development is not to the extent one generally believes it to be. Further, the effectiveness of the school curriculum is found to be diminishing as the child proceeds from the lower primary to the senior secondary level with reference to all the three aspects of the child's development.

The National Curriculum purports to develop values under twelve core curricular areas in children as they go through the school education. According to

the teachers, the present school curriculum has not succeeded in developing these values in any of the twelve core areas. Further, it is felt by a majority that social science curriculum, which provides for development of many of the core values, it does not reflect adequately these concerns.

The National Curriculum Framework has suggested a certain weightage to different subjects under cognitive and non-cognitive areas. The teachers have suggested a reallocation such that the weightage given to one or the other subject in the cognitive area be increased while reducing the weightage given to the subjects under non-cognitive areas.

The above findings imply that the existing curriculum has not been successful in attaining the intended outcomes. This failure seems to be due to the fact that it does not get implemented the way it should be. The teachers seem to have not related the curricular inputs to its outcomes since the non-cognitive areas are given lesser importance while expressing that the emotive and psychomotor development of the child are insufficient.

4.1.2 Structure of School Education

In 1975, the National Curriculum Framework suggested 5+3+2 structure for the ten years of general education. Education being a concurrent subject, some states have not switched over to the 5+3+2 structure. Karnataka continues to follow a 4+3+3 structure. A structure is not merely an addition of numbers but an expression of the perception of growth and development of a child, which indicates the transition from one qualitative level to the other.

A large majority of teachers, irrespective of the level at which they are teaching, have favoured the national structure of 5+3+2 for the ten years of schooling. This view is stronger among urban teachers than the rural. About one third of the teachers have favoured the continuation of the 4+3+3 pattern in Karnataka.

Whatever be the reason for non-implementation of the 5+3+2 structure in Karnataka, it seems that the teachers are favourable to adopting a uniform structure of 5+3+2 for ten years of schooling. This structure would ensure that a large number of children particularly girls, who now drop out after standard IV would at least avail one more year of schooling since they do not have to commute daily to a semi-urban or urban area in search of upper primary education. In terms of infrastructural facility this may mean an addition of another room and/or a teacher.

A nationally uniform structure is also necessary for the education of those children who alongwith their parents would migrate from one state to another. Moreover for a better comparability of quality of primary education across states or between the achievements at the state and the national levels as done in achievement surveys, a uniform structure is desirable.

4.1.3 Examination Policy

Examination and assessment are an integral part of the teaching-learning process. Evaluation is an essential tool for providing feedback to a learner as well as a teacher. Both, the National Policy of Education as well the National Curriculum Framework advocate a continuous and comprehensive evaluation at school level. This would enable a teacher to provide regular feedback to a learner as well as make developmental assessment at the end of a year of education or at the end of a stage of education such as lower or upper primary. The Government of India took a step in this direction by specifying the 'minimum levels of learning' upto standard V. The MLLs, the specifications of learning outcomes at every year of school education, are expected to ensure a reduction in curriculum load and enhance the accountability in school education. The State of Karnataka follows a 'No Detention Policy' upto standard IV and a 'Public Examination' at the end of standard VII. Further, the state has accepted the MLLs and has undertaken revision of the curriculum and the development of instructional material.

It was found through this study that the teachers, particularly at the lower primary level, favour the discontinuation of the 'no detention policy'. Some teachers who have favoured the policy have agreed that it must be upto standard IV, whereas a few have either suggested its extension upto standard VII or its restriction upto standard II. Teachers, particularly of upper primary and secondary levels, are highly in agreement with the present practice of having a public examination at the end of standard VII.

The continuous and comprehensive evaluation is practiced at the lower and upper primary levels, according to the teachers at these levels. However, there seems to be a difference in opinion between the teachers at the primary level and their counterparts at the higher levels. At secondary and senior secondary levels the continuous and comprehensive evaluation is not being practiced according to the teachers at those levels, whereas the teachers at the primary level have differed on this finding.

Even though there were variations across levels of background variables, the teachers think that the specification of MLLs have influenced favourably the quality of school education and they would like specification of MLLs beyond class V.

Different persons interpret the 'no detention policy' differently. It is not meant as a 'no evaluation policy'. The practice, however, has lead to the situation of no systematic evaluation at the primary stage and hence the ill effects of such a practice are being felt. This might have lead to the suggestion by the lower primary teachers that the policy must be discontinued. This perception when seen along with the perceptions about the continuous and comprehensive evaluation and the effect of specification of MLLs on quality would reveal what is really being practiced in the name of continuous and comprehensive evaluation.

A policy brings with it an underlying philosophy and a means for implementation. For success of any policy, the teacher must clearly understand its basis and must have the capability to implement it in any school context. It

seems both these are missing with the teachers because the suggestion to discontinue a policy such as the no detention policy, which has a favourable influence on improving retention in schools, would mean that the policy is neither understood nor practiced properly. This also means that the teachers need to be trained. Further, necessary steps may have to be taken to specify minimum levels of learning beyond class V, since the teachers opine that MLLs contribute to improvement in quality and that it is desirable to specify MLLs beyond class V.

4.1.4 Non-Cognitive Areas in the Curriculum

Besides the subjects under the cognitive areas of a curriculum, there are other subjects such as work experience, art education and health and physical education, which should form an integral part of the curriculum and its implementation for the all round development of a child.

According to the teachers, except the teachers at upper primary level, the subjects under the non-cognitive areas do not form an integral part of the curriculum in practice in Karnataka. Further, among the subjects under the non-cognitive areas, it is Health and Physical Education than Work Experience and Art Education, which get better attention during transaction of the curriculum.

Despite a sound philosophy underlying its inclusion, the non-cognitive areas continue to be neglected in the transaction of a curriculum. This may partly be in keeping with the general notion that schooling is synonymous with reading, writing and arithmetic. This notion gets support from the opinions expressed by the teachers that the present curriculum does not ensure the all round development of a child.

Further, the reason for the perception of teachers that the non-cognitive areas do not form an integral part of the school curriculum could be due to the fact that the subjects under this area are not so well defined as those under the cognitive area. Further, the ambiguity as to which experiences of learning are to be provided during an academic year also might contribute to its neglect.

For making non-cognitive areas an integral part of the curriculum, teachers say that the schools must be provided with equipment and infrastructure; guidelines for teaching; teacher and student reference material and an additional teacher with necessary background for transacting these areas, in that order. The need is felt most at the lower primary level and it reduces as one moves to higher levels of school education. Also, the rural schools have a greater need for resource support than the urban schools.

The findings reveal that the expectation of the curriculum framework of incorporating the non-cognitive areas into the curriculum is not being realised in its transaction. Teachers seem to be less confident and capable of transacting the non-cognitive areas. The infrastructure and the instructional resource support required in a school for transacting the non-cognitive areas are generally not available. The policy of the Government, at the primary level, is that a teacher should be able to transact both cognitive and non-cognitive areas of a curriculum. The Institutes of teacher education also have a similar stand on preparation of teachers. However, the fact that teachers feel less confident to transact non-cognitive areas seem to reflect the lop-sidedness in the emphasis given to the two areas in the training of teachers.

The implications of this finding would be that necessary steps would have to be taken to:

- *develop MLLs for non-cognitive areas*
- *develop guidelines for transacting*
- *provide teacher and student reference material*
- *develop suitable guidelines for teacher training*
- *look into the policy of staff structure at the primary level*
- *inquire into the feasibility of handling both cognitive and non-cognitive areas by every teacher at the primary level*

- *to evolve suitable inservice training programmes for equipping the existing teachers with necessary knowledge and skills*

4.1.5 Weightage to Subjects in the Curriculum

The curriculum framework assigns different weightages to different subjects both within and across levels of school education. The weightage assigned to a subject at a level is an expression of relative importance attached to it vis-à-vis the development of a child.

Teachers have suggested an increase in the weightages assigned to the subjects under the cognitive area as compared to the non-cognitive area. Within the cognitive area, the teachers have suggested relatively greater importance for language and mathematics at lower primary, mathematics and science at upper primary and secondary levels. Also, they suggest a substantial decrease in weightage for social science at lower primary level and a marginal decrease in languages at secondary level. With respect to the subjects under non-cognitive area, the teachers suggest a differential weightage for the three subjects even at the lower primary level. For all levels, the teachers suggest a slight reduction in the weightage for non-cognitive areas. Across levels, health and physical education has received a higher weightage as compared to the other two areas, and at secondary level the teachers suggest a higher weightage than what is proposed in the curriculum framework.

Generally, the teachers prefer a bias towards the cognitive areas in the curriculum than the non-cognitive areas. This is in contradiction to the goal of all round development. Further, it could be seen from the section on science, mathematics and social science education that the teachers consider the existing curriculum burdensome for students at lower primary, upper primary and secondary levels, whereas, they suggest an increase in weightage to the very same subjects. This is apparently contradictory. Under the circumstances, the interpretation made by the teachers of the curriculum load might not be increase in content for transaction in a fixed time. Probably, their interpretation of increase

in weightage might mean a suggestion for increasing the instructional time while keeping the content same. This could be due to the fact that the teachers are more aware of what is to be attained through the teaching of subjects under the cognitive areas. Hence, the implications drawn about non-cognitive areas would generally hold good for weightages for subjects as well.

4.1.6 Contextuality of Textbooks

The textbook reflects the implementation of a curriculum in context. Hence, contextuality of the curriculum is largely related to the degree to which a textbook is contextualised.

The teachers in general opine that the textbooks at all levels accommodate for contextual conditions only to 'some extent'. Whereas, there were some teachers who felt that the textbook is either not at all contextualised or that it is contextualised to a large extent. They opine that the lower level textbooks are most contextualised followed by the other higher levels in the order of upper primary, senior secondary and secondary respectively. In other words, the textbooks at the secondary level are the least contextualised. Interestingly, the teachers at a particular level of school education say that the textbooks at other levels are more contextualised than the ones they use in teaching.

All subjects may not have the same means of contextualising. Language and Social Science (EVS at primary level) need to be contextualised both in content as well as its transaction whereas, in mathematics it is mainly in transaction than in content that the contextualisation is attained. This would mean that while developing the instructional material, especially the textbooks, care must be taken to appropriately contextualise the curriculum.

4.1.7 Curriculum Load

People concerned about school education feel that school curriculum at all levels is burdensome for children. Such a view is mainly because at least some of

the content prescribed at a level is difficult for children to learn within the time available for them to learn. Though attempts were made in the past to look into this problem and to suggest steps to reduce the load on school students at all levels, the curricula continue to be overloaded.

According to the teachers, the school curricula at all levels are overloaded. The curriculum load is considered to be more at the upper primary and secondary levels than at senior secondary level. This view is held by teachers at all levels. The load of curricula in social science at upper primary and secondary levels is perceived to be more as compared to science and mathematics curricula. While the rural teachers consider that the curriculum load at primary levels is more, the urban teacher feel that the curricula at secondary and senior secondary levels are overloaded.

The heavy load of curricula is viewed to be causing stress and strain amongst students and thus affecting their normal development. A majority of teachers at all levels opined that the present mathematics and science curricula at secondary and senior secondary levels cause stress and anxiety amongst students. Teachers who actually transact the curricula at these levels hold this view more prominently. A majority of both the rural and urban teachers hold this view with urban teachers feeling more strongly than their rural counterparts.

The above findings reveal that the attempts made in the recent past to reduce the load of curricula have not produced desired results. The problem of curriculum load is a very complex one. The problem cannot be resolved by simply reducing the quantum of content to be transacted. Necessary changes in curriculum transaction including evaluation procedures are to be made. This has implications for both preservice and inservice teacher education to bring relevant changes to develop and enhance teachers' competence required for effective curriculum transaction.

4.1.8 Qualification of Teachers

Effective implementation of curriculum requires competent teachers who are themselves capable of creating and organising knowledge as well as disseminating the knowledge to students. Teachers are expected to have a thorough background not only in subject matter they are expected to teach, but also in methodology of teaching. However, the academic and professional qualifications of teachers vary widely across subjects, states, context of schooling, type of school, management of school etc. The minimum qualification prescribed for teachers for teaching upto upper primary stage in the four southern states is 12 years of school education and 2 years of professional education. But teachers at primary levels are generally required to teach almost all subject areas with or without having studied science/social sciences/mathematics at senior secondary level. However, the priority accorded to these subjects in our primary and secondary schools led to inclusion of college level content in the curricula at these levels. The question thus arises, whether the minimum academic qualification prescribed for teaching at primary levels is adequate or a subject background upto degree level is required. The opinions of teachers on this issue are presented in the following paragraphs.

For teaching science and mathematics at upper primary level, the opinion of teachers is in favour of higher qualification (i.e. science background upto senior secondary and degree). About one-fourth of teachers considered that science/mathematics background upto X standard is sufficient for teaching at the elementary level. The teachers at secondary level those working in urban locale strongly favoured a degree in the subject for teaching it at upper primary level, the teachers at primary levels and those working in rural schools strongly favoured subject background upto X standard only. The teachers with higher qualification (i.e. post-graduate/ degree) were in favour of subject background upto degree level as compared to teachers with a lower qualification who favoured X standard knowledge of the subject.

For teaching of languages at all levels, a majority of teachers opined that teachers must have studied both the language and the methodology of teaching it. The urban teachers and those teaching at secondary levels were more in favour of this view than their counterparts. Further, one fifth of lower primary teachers viewed that any teacher can teach language also. The existing practice in certain schools might have influenced this view.

Majority of teachers across levels and locale felt that to teach social sciences at upper primary levels, teacher must have studied history, civics and sociology. About one-fifth of teachers also favoured study of economics though the curriculum in social sciences at upper primary level may not warrant such a background. For teaching of social sciences at secondary level, equal importance for background knowledge of history, geography, civics, economics and sociology was emphasised by teachers across levels and locale.

Taking into account the views of teachers regarding the qualification/background knowledge required for teaching various subjects, a general trend in opinion emerges strongly in favour of higher qualification than what is prescribed at present.

The implication of this finding would be that necessary steps would have to be taken to review teacher recruitment policy vis-à-vis the selection procedure for pre-service teacher education programme for primary and secondary education. This review should take into account the existing variations across states/boards with respect to the essential qualifications for a teacher at different levels of school education. For example, a graduate with elementary teacher education may prove to be a better teacher than one who is only +2 qualified due to a higher level of maturity and a higher level of exposure to content.

4.1.9 Study of Science and Mathematics as compulsory subjects upto secondary level

Under a common scheme of studies envisaged for classes I to X, science and mathematics are compulsory curricular areas. The study of these subjects is

meant to provide appropriate knowledge, skills and attitudes for living an effective life in the present modern world. It is felt that the present science and mathematics curricula at the secondary level do not provide necessary foundation for those who would like to pursue study of these subjects at higher levels. There are some others who feel that there should be differentiated courses at secondary level-one course for those who will pursue the study of the subjects at higher levels and another course for those for whom class X will be a terminal stage. The perceptions of teachers regarding these issues are presented below.

An overwhelming majority of teachers across different teaching levels and locale are in favour of continuation of the study of science and mathematics as core curricular areas upto secondary level. Similarly teachers across different teaching levels, locale and academic backgrounds strongly favour one common course in science as well as mathematics for all. A sizeable percentage of teachers support the idea of differentiated courses at secondary level.

A large majority of teachers across different levels and locale have expressed that the science curriculum at secondary level is 'adequate' to provide necessary foundation to pursue further study of the subject at senior secondary and degree levels, whereas in mathematics, teachers hold the opposite view.

The implications of the findings are that (1) science and mathematics must continue as compulsory subjects of general education upto class X. (2) the content of science and mathematics to be taught should be common for all students upto class X but providing for individual needs in their transaction and (3) the mathematics curriculum at secondary level should be made relevant for providing sufficient foundation to pursue future learning at higher levels.

4.1.10 Need for Mathematics and Social Science Laboratories in Schools

Like in science, the need for mathematics and social science laboratories is felt. Laboratory lessons are viewed as a new approach to learning. They provide

experiences for the learner who has difficulty in learning the formal, abstract treatment of the typical textbook. The laboratory lesson provides a non-threatening, realistic, concrete approach to learning. Thus it is helpful in dealing with individual differences. The inquiry approach in a laboratory provides the student with experiences in thinking for himself/herself, in discovering ideas and in communicating his/her discoveries. This shifts the emphasis from teaching to learning, from prescribing and proscribing to helping, and from authority to inspiration. Despite these advantages, schools hardly follow laboratory approach to learning.

Teachers across different levels, overwhelmingly support the idea of a laboratory for mathematics and social sciences. The need is felt more for social sciences at upper primary and secondary levels and for mathematics at secondary level. Very few teachers felt the need for a laboratory in social sciences or mathematics at the senior secondary level.

Further, teachers irrespective of levels or locale, favour strongly a practical examination in geography and mathematics at the secondary level.

However, a laboratory means different things to different teachers. It is not clear whether teachers consider a laboratory as a room for special activities or a way of teaching. It is therefore necessary to clarify the nature, scope and procedure of laboratory lessons. Further, even though the teachers have strongly favoured conducting practical examination in geography and mathematics, it is not a part of the current practice in either Karnataka or any other board of school education. What needs to be tested through practical examination is not clear and hence needs to be probed. Also to make the idea realistic, necessary infrastructural facilities have to create in schools and teachers have to be trained to develop the competence to adopt this approach to learning.

4.2 ISSUES RELATED TO LANGUAGE EDUCATION

4.2.1 Three language formula

The national curriculum framework envisages that a student should study three languages as part of general education upto secondary level. Under the three-language formula the first language has to be the home language or the mother tongue or the regional language, which is to be learnt from the first standard. The second and third languages should be learnt from class VI to X. However, the three-language formula is not being followed in some of the states or boards and the mother tongue of the pupil is being denied the status of the first language. There is no uniformity in the languages offered as the first and the second language. English is offered from the class I in some states or boards and from class III in others. Some states follow only two-language formula whereas in others classical languages like Sanskrit or Arabic are being studied in lieu of modern Indian language. Some boards permit even European languages like French and Germany in place of Hindi. Teachers' perceptions regarding three-language formula and its implementation are presented in the following paragraphs.

An overwhelming percentage of teachers across levels and locale favour the continuation of three-language formula with rural and primary teachers holding this view more strongly than their counterparts. As regards introduction of English, majority of teachers irrespective of locale and teaching levels opined that it should be introduced from V/VI standard (first year of the upper primary stage depending on the structure being followed in the state), while one fifth of teachers suggested that it should be introduced from class III or class I. Similarly, an overwhelming majority of teachers favoured study of Hindi as a compulsory language in all the states. Teachers across different locale and teaching levels favoured strongly introduction of third language, such as Hindi, Sanskrit and Marathi from class V and continuation of the same up to class X.

According to teachers, the second and third languages should focus on teaching contemporary forms of language with its social functions followed by a considerable number of teachers favouring the teaching of grammar and structural nature of the languages. However, the teachers do not prefer the teaching of masterpieces of literature in the language concerned.

Teachers across different locale and levels are not in favour of introduction of foreign language, like French or Chinese, as second/ third language in lieu of Hindi or a Modern Indian Language. A sizable percentage of teachers are in favour of introduction of classical language like Arabic or Persian or Sanskrit as second/third language in lieu of Hindi or a Modern Indian Language.

The findings reveal the acceptability of three-language formula in the state of Karnataka. It is also implemented in the state. However, there is no uniformity in the implementation of the neither three-language formula nor does such uniformity exist in the perceptions of teachers. It may be mentioned that the medium of instruction and the first language are not one and the same. In English medium schools, for example, the first language may be the mother tongue or standard regional language. The choice of first language is also influenced by other practical considerations such as the transferability of parents and the non-availability of the mother tongue in the place of study/schooling. It is noticed that the second language is not introduced uniformly in all states. There are schools which are found to introduce the first and second languages in standard I itself. It is suggested that the second language be introduced from the upper primary classes. The third language is introduced at the upper primary level but may or may not be continued upto standard X, depending upon the board or the state. There seems to be an ambiguity with respect to the stage of introduction and duration of study in so far as the third language is concerned. The language issue being complex in a multilingual society like India, there is a need to undertake systematic studies with a view to arrive at a strong policy for language education.

English and Hindi or a classical language should be introduced from the upper primary classes. The teaching of the second and third languages must focus on teaching contemporary forms of language with its social functions in speech and writing and teaching only practical grammar wherever necessary. This view is in keeping with the current thinking on the purpose and approach in teaching second and third languages.

Efforts may have to be made to orient teachers to the issues, objectives and approach to teaching of languages in schools since teachers are found to hold divergent views on them.

4.2.2 Medium of Instruction

Quality of curriculum transaction and the level of achievement of children depend much on the medium of instruction. The medium of instruction can be that language which the learner understands and in which he can comfortably interact. So, home language or mother tongue is a natural choice for medium of instruction, at early stages of schooling. English may be accepted as medium of instruction at the later stages of schooling. Imposing English as medium of instruction at primary stage may hamper the development of the child. Deciding a language as medium of instruction at different stages of schooling is a serious concern and has lot of implications for curriculum development. The opinions of teachers about medium of instruction are pertinent in curriculum review and development.

Teachers across different locale and teaching levels suggested that home language should be the medium of instruction at pre-primary followed by primary level of schooling. Further, they opined that standard regional language should be the medium of instruction at lower primary and upper primary levels. The order of preference suggested by teachers for the introduction of English, as medium of instruction, is senior secondary, secondary and upper primary. Majority of rural and lower primary teachers preferred home language, as medium of instruction, at pre-school and primary stages.

Perceptions of teachers about medium of instruction reveal that at pre-school stage home language, at primary stage standard regional language and at senior secondary English may be introduced as medium of instruction. It needs to be mentioned however that home language, if it is not the standard regional language, is hardly found to be the medium of instruction at the pre- school stage. Further, the pre-school education, except for Anganwadi, is available in urban areas and towns and the medium of instruction followed in such schools is English.

4.2.3 Approaches of teaching

Language education plays an important role in developing desirable attitudes and values. Development of attitudes and values related to all the core components is possible through suitable and appropriate teaching learning strategies. Language learning is essential for cognitive, emotional and social development of the child. Creative expression and the ability to think on one's own should be encouraged in language teaching. Children should be equipped to express their opinions freely and interpret events around them and also the events of the past. Accomplishment of the objectives of language education is possible through an effective language teaching. Efficiency in language teaching depends on selection of suitable approach in teaching language and implementing it in classroom situation. The important approaches in language teaching are structural, aural-oral, communicative and situational. Teachers' opinions are sought in respect of these approaches in language teaching, as they have some implications in the development of language curriculum.

Teachers favoured structural approaches followed by situational, communicative and aural-oral approaches in teaching English. Rural and urban teachers vary in their degree of preference to these approaches. Rural teachers are found to be more favourable to structural and situational approaches, whereas urban teachers favoured aural-oral and communicative approaches. Similarly, variations are evident across different teaching levels. It is found that upper

primary and secondary teachers are more inclined to prefer structural and situational approaches. The teachers have favoured teaching of functional descriptive grammar to theoretical prescriptive grammar as a subject. Also they have favoured ability in 'writing and speaking English' over 'becoming a scholar' as the objective of teaching English.

From the above findings, it may be implied that there is an overall consensus for structural and situational approaches in teaching English, which is currently in practice at all levels. This preference for approach is not in consonance with their perception of objective of teaching English and the type of grammar to be taught. In recent years communicative approach has envisaged prominence in the teaching of English, particularly in schools following the CBSE curriculum. This may be due to a shift in the perception of the purpose of learning English as revealed by the present study. The importance of communicative and aural-oral approaches in initiating desired learning outcomes has also been realised by some teachers, especially urban teachers. This implies that rural teachers require some training to use these approaches in classroom. Adequate emphasis should be provided to these approaches in the curriculum. These findings have implications to preparation of reading material, teacher handbooks and also in planning of in-service training programmes.

4.2.4 Language Skills

The purpose of language education is to develop language skills among children. Failure to teach language skills properly in the early years will lead to difficulties in learning later through the upper primary, the secondary and the senior secondary stages of school education. Children with poor language background remain poor in all areas unless specially helped in improving their language skills. In natural sequencing of language learning, listening and speaking comes first followed by reading and writing. The elements of language are integrated in the skills of listening, speaking, reading and writing. Language learning is a continuous and comprehensive process involving these skills.

Listening and reading are receptive or passive skills, whereas speaking and writing are production or active skills of language. Curriculum in language should ensure that children acquire these language skills. Of the four skills of language listening and speaking are generally neglected both during instruction and evaluation. This holds true particularly with respect to the teaching of English. Hence teachers' opinions are sought in respective of these language skills.

An overwhelming percentage of teachers across different locale and teaching levels, expressed the need to teach listening and speaking skills in English. However, variations in this perception of teachers are evident across locale and teaching levels. Rural teachers are more favourable to teaching of listening and speaking skills in English than their urban counterparts. Upper primary teachers held this view more strongly than their counterparts at other levels of school education.

The above findings imply that the teachers realise the importance of listening and speaking skills in teaching of English. In practice, however, these skills are neglected. This is partly due to the approaches currently followed for teaching English, which are structural and situational. Adopting communicative approach would help in the development of listening and speaking skills. Suitable actions need to be taken to orient the teacher and make available instructional materials including audio-video exemplar materials.

4.2.5 Quality of Textbooks

Textbooks are extensively used in the teaching and learning of languages, be it first, second or third language. Learners too depend heavily on the textbooks to judge their learning. Hence, textbooks need to be so designed that the reading matter is appropriate and adequate and the exercises and activities cater to the development of all skills of language. It is needless to say that for achieving this goal, the exercises or activities in the textbooks have to be interesting to the learner and must provide a variety of experiences. In order that they are thought provoking, the exercises have to be designed innovatively.

Teachers rated as 'good' the quality of first language textbooks at upper primary and secondary levels, whereas they rated as 'poor' those textbooks at lower primary level. Lower and upper primary teachers rated the first language textbooks of all three levels as 'poor', whereas the secondary and senior secondary teachers rated them as 'good'. The quality of second and third language textbooks for all the three levels, were rated as 'good'. Teachers opined that the reading material is 'just adequate and manageable' in first, second and third language textbooks.

Teachers opined that activities/exercises in first language textbooks are catering to the development of 'all skills' of language, second language textbooks are catering to the development of 'some skills' and third language textbooks are not catering to the development of 'any skills'. A similar trend was observed in the perception of teachers regarding the other criteria of quality of exercises/activities.

In the light of the perceptions held by the teachers, there is a need for a fresh look at the language textbooks in terms of reading material and exercises/activities provided in them. There is a need to change the process of preparation and production of language text books in the context of changed role of language education. In place of present teacher-centred and content-oriented learning material, competency based and process-oriented materials should be developed to facilitate joyful self-learning experiences. Instead of a single content-loaded textbook, there is a need to develop a complete package of textbooks, workbooks, teachers' handbooks and multimedia materials. Before making any changes in the textbooks, it is necessary to know in detail the drawbacks of existing language textbooks and to identify the components that require modification. It is also evident from the perceptions of teachers that the second and third language textbooks, reading material, and exercises/activities therein need greater modification than in the first language.

4.3 ISSUES PERTAINING TO SCIENCE EDUCATION

4.3.1 Teaching of EVS at Primary Level

The present organisation of knowledge in the curriculum is from integrated to differentiate or from wholistic to specialised forms. Hence, science and social sciences are taught earlier to specific subjects in science or social sciences, environmental studies I and II before science or social sciences and an integrated environment studies at standard I and II.

Teachers have agreed with the existing pattern of teaching EVS as one subject at standards I and II and as EVS-1 and EVS-2 at classes III to V. Hence, the existing pattern may be retained in organising content under the curriculum at lower primary level.

4.3.2 Linkage of Science Curriculum with Societal/ Environmental Issues

It is generally considered that the learning of Science is incomplete without an awareness of societal and environmental issues. The curriculum, it is believed should provide scope for a linkage with environmental/societal issues.

The findings reveal that a large majority of teachers, across locale perceive that the present curriculum provides for a linkage with societal/environmental issues. This view is stronger among lower primary teachers.

It may hence be said that the present curriculum has succeeded in incorporating the environmental/societal issues. However, this perception goes against the general belief that education does not foster the sensitivities among children to issues such as protection of environment. Hence, it may be appropriate to make a detailed study of the nature and extent to which the students understand the societal/environmental issues.

4.3.3 Scope for Scientific Skills in Experimentation

Many educationists feel that school science curriculum should have scope for developing basic scientific skills including experimental skills among the students. The opinion of teachers regarding three ways of developing these skills through the science curriculum were gathered.

A majority of teachers, across locale, have opined that 'Demonstrations' in the classrooms' as most suitable for developing scientific skills as against 'Field Visits' and 'Specific Periods' for the purpose.

Since experimentation is the essence of science education, the approaches of field visit and organising specific periods are likely to be inappropriate, if they are not organised systematically. Considering that the teachers who opted for specific periods were fairly high in number, it may be implied that these teachers need suitable orientation as to what constitutes scientific skills and the conditions under which it can be developed. It is surprising to note that the option for field visits is not generally agreed by the teachers. Field visits provide an opportunity to undertake naturalistic observation, gather information and articulate scientifically. If the method has to be used by the teachers, then the guidelines and instructional material required have to be made available to the teachers. Considering that the teachers have generally opined that the curriculum has not been effective in the psychomotor domain, the extent to which these skills are developed in classrooms need to be analysed. Also, the infrastructure available in schools for demonstration in the classroom may be insufficient if the approach has to be followed in practice.

4.4 ISSUES PERTAINING TO TEACHING OF MATHEMATICS

4.4.1 Oral work in Mathematics

In learning mathematics children must know how to do simple and rapid mental computations. They must be accustomed to finding very quickly solutions

to concrete problems. Although computational skill has always been considered essential for students of all abilities, it is often complained that children in schools, in colleges and on the job generally lack this skill.

Oral work in mathematics has the potential to develop mental arithmetic ability in learning of mathematics particularly primary levels. Concepts, facts, rules/procedures, basic skills in the four fundamental operations and skills in problem solving can be reviewed, practiced and explained orally by students. Doing exercises orally can help: to check thinking process, to identify errors vis-a-vis learning difficulties, and to detect hesitancy in pupils' learning.

A majority of teachers across different teaching levels and locale opined that sufficient emphasis is given to oral work in mathematics at primary levels. This perception is more pronounced among teachers at primary level.

However, the oral work in mathematics being followed in primary levels merely includes reciting in a chorus/individually, of number names (even their spelling), number rhymes, multiplication tables, days in a week and may be simple addition and subtraction facts. Oral work can be more interesting and creative than simple recitation. There is, therefore, a need to clarify, the nature, purpose and approaches to oral work in mathematics.

4.4.2 Use of Calculators in Examinations

Use of Calculators is one of the concerns pertaining to teaching of mathematics. It is increasingly recognised that calculators are valuable tools in teaching mathematics, not only in secondary and senior secondary levels, but also at primary levels, provided that they are used imaginatively. At an earlier age than expected, children can be made to understand thoroughly concepts such as place value, negative numbers, decimal fractions the four fundamental operation; be familiar with large numbers; investigate number patterns. At higher levels, calculators are useful to handle real data with speedy and accuracy and verify calculations made. The calculators have a motivating effect and can remove

anxiety of incorrect answers. However, there is also a strong feeling that calculators should be used until pupils learn the use of fundamental operations. Further, some favour the use of calculators in teaching, but not in examinations.

A majority of teachers, irrespective of their locale and levels of teaching, are not in favour of using calculators in examinations. However, most of those who favoured use of calculators opined that use of calculators be allowed in mathematics examinations only but not in science examination, mostly at senior secondary level.

The views of teachers about use of calculators in examinations in different subjects are a bit intriguing. The use of calculators in examinations is generally to solve problems/exercises requiring use of concepts or generalisations or a set of rules. However, solving problems/exercises using calculators gives no details of the calculations/procedure, which should be given importance in assessment of learning mathematics. So, it may be more difficult to identify errors in calculations. Calculators could be useful in the learning of mathematics, but not at the cost of the knowledge of steps/procedures involved. Calculators should not be used as short cuts to reaching a solution but rather as a time saving device in such situations where calculations are mechanical and cumbersome.

4.4.3 Correlation of Mathematics

Mathematics has often been criticized because it has emphasised logic and structure that seemingly have not physical representation or practical application. This is unfortunate because probably no other subject has greater application than mathematics. It is the basic tool for understanding and exploring our scientific, economic and social world. Today, all fields of knowledge are dependent on mathematics for solving problems, stating discoveries in precise and unambiguous language and predicting outcomes. For mathematics to attain its rightful place in the curriculum and to motivate students to learn it, continued reference to physical representation and specific applications is needed. If teachers can show what mathematics accomplishes outside the classroom, students develop interest and

can transfer their knowledge to a new situation. Teachers' perceptions regarding the scope for applying mathematics in learning other subjects and in daily life situations are presented here under.

An overwhelming percentage of teachers opined that the present curricula in mathematics at all levels cater highly to the needs of other subjects. The teachers at lower primary and senior secondary levels hold such view more strongly than their counterparts at other levels. Local-wise variation in such a perception was not noticed.

The curricula in mathematics at primary levels perceived to be more relevant to deal with the problems of day- to- day life than the curricula at secondary levels with the curriculum at senior secondary level being least relevant. Further, the teachers at a particular level consider the mathematics curriculum at that level as more relevant to deal with daily life situations than their counterparts at other levels, except the senior secondary teachers, who feel that the curriculum at that level is least relevant.

Correlation, both within and among curricular subjects and also with life situations is a matter of transaction of the curriculum rather than the organisation of the textbooks. Therefore, a teacher should have the knowledge of the subjects in which mathematics finds its application and must have an ingenuity to use the opportunities available in teaching to bring a correlation of mathematics with other subjects and with life situations. The finding that the senior secondary teachers could not find relation of mathematics to life-situations is not surprising. This is because the mathematics taught at this stage, though abstract, provides foundations for the learning of mathematics subsequently or of other subjects.

4.4.4 Approaches to teaching of Theorem

The emphasis in teaching of geometry in secondary schools is mostly on establishing the truth/value of generalizations (if proving theorems). In mathematics, the approach to proving theorems (true generalization) is

deductive/axiomatic. However, the theorems can first be discovered through induction and the same can then be proved through deduction.

In general, teachers favour a deductive approach to teach theorems over the inductive or inducto-deductive approaches, in that order. Further, the secondary and senior secondary teachers favour the deductive approach while the teachers at primary levels prefer the inductive approach.

The opinion of teachers seem to be in tune with what is being practiced at the primary and secondary levels. If theorems are taught for their proof at secondary levels, they are taught as generalisations without proof at primary levels. However, the inducto-deductive approach, which provides for the joy of discovery, besides developing inductive thinking skills and the deductive thinking skills. Thus, the learning through this approach is more complete than that when either inductive or deductive approach is followed. This may also be taken into account in the teacher education programmes.

4.5 ISSUES PERTAINING TO SOCIAL SCIENCE EDUCATION

4.5.1 Approaches to Teaching Social Science

Social Science like Science at upper primary and secondary levels comprises subject areas, which can be taught following a disciplinary and/or an integrated approach. It could also be taught on a thematic basis. It is necessary to know which of these approaches teachers prefer and which is actually put to practice.

A majority of teachers considered the integrated approach to teaching social science at upper primary and secondary levels as appropriate while a substantial number favoured the disciplinary approach as practiced in a composite form. The thematic approach was favoured by a very few teachers. This perception was also true locale-wise in so far as the preference for integrated approach was considered.

A majority of the teachers opined that the approach suggested by them was being practiced only to some extent while some teachers said that the approaches were very much in practice. The lack of practice of the approach was more at the senior secondary level than at the primary levels.

The teachers consider the integrated approach suitable at the upper primary and secondary levels, which is in tune with the current thinking. However, the opinion that it is being practiced only to some extent could be either due to the reason that the existing curriculum does not organise content for practicing an integrated approach or that the teachers are not aware of the implementation of the approach in classroom. Hence, efforts have to be made to develop the requisite know how and competence among teachers, including instructional material.

4.5.2 Subjects to be studied under Social Sciences at Senior Secondary Level

An overwhelming majority of teachers across levels and locale have opined that students of Social Sciences stream at senior secondary level must study all the four subjects – history, geography, civics and economics compulsorily.

The opinion of teachers would necessitate a reorganisation of the content of Social Sciences at senior secondary level. Such a reorganisation will also have an implication for the weightage distribution between subjects and the qualification of teachers at senior secondary level. Efforts may have to be made to examine them in detail.

4.5.3 Attainment of Outcomes of Social Science Curriculum

One of the important functions of social sciences curriculum is that it should address the socio-cultural issues in order to develop right attitudes and values among children. It also should help the child to grow into well informed and responssible citizens. Social Science curriculum should focus on the social, economic and political aspects of human environment especially with respect to

Indian culture and heritage. The core elements and the values are to be integrated in the social science curriculum. As values are emotional commitments, emphasis must be laid on these emotions for harmonious human life free from conflicts. Social Science should help children to play different social roles adhering to socio-cultural context of our society and make them sensitive to these issues. The opinions of teachers, about the extent to which social science curriculum is addressing the socio-cultural issues, are presented in following paragraphs.

Teachers across different locale and teaching levels, opined that the social science curriculum in schools adequately address the socio-cultural issues of present day India. A large majority of them viewed that they are partially addressed. This opinion is more prominent among teachers at primary level as against secondary and senior secondary levels. Further, majority of teachers across different locale and teaching levels felt that the social science curriculum help students in acquiring sensitivity to respond to the socio-cultural needs/problems. Among them a majority irrespective of their locale and level of teaching, feel that the curriculum is partially effective to help students to develop sensitivity in responding to socio-cultural needs/problems. Majority of teachers across different locale and teaching levels, opined that the core components are not adequately reflected in the social science curriculum. Regarding attainment of objectives of social science curriculum, teachers opined that they are not adequately achieved at both upper primary and secondary levels.

Even though the social science curriculum at all levels of school education addresses the socio-cultural issues and core values, the perceptions of teachers reveal that they are not addressed comprehensively. Hence, efforts need to be made to identify the issues and values not being reflected in the curriculum with a view to incorporating them into the curriculum. Since the curriculum is perceived as partially effective in sensitising the students to the socio-cultural issue and core values, it may be necessary to device transactional approaches to enable teachers to use them for an effective achievement of this outcome.

4.5.4 Study of Social Science/Science as part of General Education in Senior Secondary level

National Curriculum Framework envisages the study of Science and Social Science as compulsory subjects upto secondary level. At senior secondary level, students of science streams are not required to study social science, and those of humanities stream are not required to study science. However, there is a strong feeling that the study of these subjects upto secondary level is inadequate to develop scientific knowledge and skills; and understanding of socio-cultural issues of present day India and contemporary world problem.

A large majority of teachers across different locale and teaching levels felt that social science should be studied by students of science stream as a part of general education at senior secondary level. A similar opinion is expressed by teachers regarding study of science as apart of general education by students of social science stream. However, the teachers at senior secondary level are not as favourable as their counterparts at other levels on this issue.

These findings have implication for preparing curriculum at senior secondary level. In those days of fast growing scientific knowledge and competition with drasting social changes, in order to get success in life, it is necessary to study both science and social sciences as general education by students of both science and social science streams.

The summary of perceptions and suggested actions are presented in Chapter V.

CHAPTER V

SUMMARY OF PERCEPTIONS AND SUGGESTED ACTIONS

The present study on the perceptions of teachers on curricular issues has revealed three distinct kinds of perceptions in relation to the existing curriculum framework and the policies underlying it. If some perceptions are in agreement with the curriculum framework there are others on which the teachers have expressed a disagreement. Also there are issues on which the teachers' perceptions did not show any trend and hence were considered as an indicative of an ambiguity. The perceptions organized under these three categories are presented in this chapter.

Further, this study was undertaken as quick appraisal of teacher perceptions with view to provide inputs for the exercise of revision of the national curriculum framework. Hence, efforts have been made to identify and list the actions to be taken in the light of findings of the study. These suggested actions presented herein are expected to provide the necessary inputs for evolving a revised curriculum framework.

5.1 FOLLOWING ARE THE PERCEPTIONS OF TEACHERS THAT ARE IN AGREEMENT WITH THE EXISTING CURRICULUM FRAMEWORK

- The national structure for the ten year schooling as 5+3+2
- Specification of MLLs beyond class V
- Study of science and mathematics upto secondary level compulsorily
- Adequacy of inputs in science at secondary level
- Continuation of three language formula
- Teaching Hindi as a compulsory language in all states at upper primary level

- Objectives of teaching English
- Importance of listening and speaking skills in English
- Quality of second and third language text books
- Standard regional language as medium of instruction at lower primary and upper primary levels
- Teaching of EVS as one subject at standard I and II and as EVS–I and EVS–II at standard III to V
- The science curricular content relates to the societal/environ-mental issues. However, it does not sensitise the children to these issues
- Sufficient emphasis for oral work in mathematics at primary levels
- Mathematics at all levels caters highly to the needs of other subjects
- Integrated approach as appropriate to teaching social sciences at the upper primary and secondary levels
- A comprehensive study of the subjects under social sciences – history, geography, civics and economics compulsorily by the students of social sciences stream at senior secondary level
- The social science curriculum in schools adequately addresses the socio-cultural issues of present day India. However, it is partially effective in developing sensitivities attached to these issues
- Compulsory study of social science by students of science and of science by the students of social science at senior secondary level as a part of general education.

5.2 THE FOLLOWING DISAGREEMENTS IN TEACHER PERCEPTIONS WERE FOUND WITH RESPECT TO THE CURRICULUM FRAMEWORK

- Weightage assigned to cognitive and non cognitive areas in the curriculum
- Discontinuation of no detention policy
- Non cognitive areas as an integral part of curriculum
- Teacher qualification for teaching all subjects at all levels
- Adequacy of inputs in mathematics at secondary level

- Stage for introduction of second language (English)
- Introduction of foreign languages like French or Chinese in schools and introduction of classical languages like Arabic or Persian or Sanskrit in lieu of Hindi or a modern Indian language
- The medium of instruction at pre-primary and primary levels

5.3 THE ISSUES ON WHICH AN AMBIGUITY IN TEACHERS' PERCEPTION WERE FOUND ARE AS FOLLOWS

- Implementation of continuous and comprehensive evaluation
- The curriculum load at different levels of schooling
- The languages to be studied/offered at levels of schooling
- Approaches to teaching English, science, mathematics and social sciences
- Quality of first language text books
- The approaches appropriate for development of scientific skills in teaching of science
- The nature of oral work in mathematics
- Purpose of using calculators in mathematics and science examinations
- Scope of correlation of mathematics with other subjects and with life situations

5.4 SUGGESTED ACTIONS

- Training on transacting the non cognitive areas in order to attain affective and psycho motor out comes
- Provision of infrastructure particularly for transacting non-cognitive areas
- Training on continuous and comprehensive evaluation vis-à-vis the implementation of no detention policy
- Formulation of MLLs for non-cognitive areas at all levels and for cognitive areas beyond standard V
- Formulation of guidelines for transacting
- Provision of teacher and student reference material

- Preparation of suitable guidelines for teacher training
- Review of the policy of staff structure at the primary level
- Inquiry into the feasibility of handling both cognitive and non-cognitive areas by every teacher at the primary level
- Formulation of suitable training programmes for equipping the in-service teachers with necessary knowledge and skills for teaching non-cognitive areas
- Contextualisation of the text books
- Training on contextualising of curriculum during its transaction
- Detailed analysis of curriculum load at various levels
- Review of teacher recruitment policy
- Review of selection procedures for pre-service teacher education
- Preparation of instructional materials for transacting non-cognitive areas
- Continuation of science and mathematics as compulsory subjects upto class X
- Review of the mathematics curriculum at secondary level for its sufficiency as foundation for higher levels
- Establishment of laboratories for mathematics and social sciences at upper primary and secondary levels
- Incorporating practical examination in mathematics and geography at secondary level and development of guidelines, instructional material and evaluation procedures for conducting practicum in them
- Uniform implementation of the three language formula
- Orientation of teachers to communicative approach to teaching English and development of instructional support materials
- Review of the process of preparation, production, reading materials and exercises or activities in the language textbooks
- Preparation of support material for language learning for development of competencies in listening and speaking
- Detailed study of the nature and extent of students' understanding and sensitivity of the societal and environmental issues

- Orientation of teachers to the approaches appropriate for development of scientific skills in teaching of science
- Clarification of the nature, purpose and approaches to oral work in mathematics
- Development of guidelines for the use of calculators in science and mathematics
- Clarification of objectives of teaching mathematics at different levels in relation to applicability to life situations and in learning of other subjects
- Orientation to nature, purpose and process involved in inducto-deductive approach in teaching of theorems in mathematics
- Development of know-how among teachers to use integrated approach to teaching of social sciences
- Reorganisation of content of social sciences at senior secondary level to include history, geography, civics and economics and deciding weightage for each
- Review of the qualifications of teachers for teaching social sciences at senior secondary level
- Incorporating all socio-cultural issues and values in social science curriculum and designing transactional approaches for attainment of these outcomes
- Designing the inputs in science and social sciences for senior secondary level under compulsory general education.

APPENDICES

REGIONAL INSTITUTE OF EDUCATION, MYSORE

(NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING)

IDENTIFICATION DATA

Name of the Teacher: Male/Female

School:

Qualification:

Level: Lower Primary ☐ Upper Primary ☐

Secondary ☐ Senior Secondary ☐

Place : Rural ☐ Urban ☐

Block:

District:

Age: ☐ Date of joining Service: ☐☐☐

Subjects and Levels taught (Indicate by ticking)

	Lower Primary	Upper Primary	Secondary	Senior Secondary
Language				
Mathematics				
Science				
Social Sciences				
Work Experience				
Art Education				
Health & Physical Education				

APPENDIX A

QUESTIONNAIRE ON GENERAL CURRICULAR ISSUES

1. The present curriculum in schools is expected to achieve allround development in students. Indicate the extent to which development is achieved in each of the following.

	Not at all	To some extent	To a large extent
Cognitive			
Affective			
Psychomotor			

2. The following values are expected to be developed in students through School Curriculum. Indicate the extent to which they are developed in students as a result of schooling.

Values	Not at all	To some extent	To a large extent
1. India's Freedom Movement 2. Constitutional obligations 3. National identity 4. Our Cultural Heritage 5. Equality of Sexes 6. Protection of Environment 7. Egalitarianism, Democracy and Secularism 8. Removal of Social Barriers 9. Population and Small Family Norm 10. Human Rights 11. Scientific Temper 12. National Integration			

3. The text books are expected to be flexible to accommodate the local context of the learner in the process of learning. Indicate the extent to which it is achieved in the present text books being used at different level.

	Not at all	To some extent	To a large extent
Lower Primary			
Upper Primary			
Secondary			
Senior Secondary			

4. i. Do you agree with the 'No Detention Policy' at primary stage?

Yes ☐ No ☐

ii. If yes, indicate the class up to which the policy is to be implemented upto _____ class.

iii. If no indicate when the examination for promotion be conducted

Annually ☐ or at the end of each stage ☐

iv. Are you in favour of conducting public examination for promotion of students from upper primary to secondary level.

Yes ☐ No ☐

5. Indicate the extent to which continuous and comprehensive evaluation is practiced at different levels of school education.

	To a large extent	To some extent	Not at all
Lower Primary			
Upper Primary			
Secondary			
Senior Secondary			

6. Work Experience, Art Education and Health and Physical Education are integral parts of the school curriculum frame work. Indicate the extent to which they form a part of the curriculum in practice.

Level	To a large extent	To some extent	Not at all
Lower Primary Work Experience Art Education Health & Physical Education			
Upper Primary Work Experience Art Education Health & Physical Education			
Secondary Work Experience Art Education Health & Physical Education			
Senior Secondary Work Experience Art Education Health & Physical Education			

7. i. Do you think that sufficient resources and facilities are available in schools to teach the above mentioned subjects

Yes ☐ No ☐

ii. If no, indicate the types of instructional material you would suggest to be provided

	Teacher	Equipment & Infrastructure	Student Reference Material	Teacher's Handbook	Guidelines for Teaching
Lower Primary					
Upper Primary					
Secondary					
Senior Secondary					

8. What do you think about the content of Work Experience, Art Education and Health & Physical Education? (Tick only one)

i. Keep them same as in the present curriculum
ii. Revise them in accordance with the changing times
iii. Increase the content by adding to the existing
iv. Reduce the content

9. i. According to the national curriculum framework, the structure of school education is 5+3+2. Do you agree with this structure.

Yes ☐ No ☐

ii. If no, suggest the alternative structure _____

iii. If yes, do you think it should be practiced uniformly by all states

Yes ☐ No ☐

10. Home Work/Home Assignment form an extension of classroom teaching. Indicate your opinion on giving home work/assignment at different levels and in different subjects by ticking in relevant places.

	Lower Primary	Upper Primary	Secondary	Senior Secondary
Language				
Mathematics				
Science				
Social Science				
Work Experience				
Art Education				
Health & Physical Education				

Educatio

11. i. The learning outcomes for each class up to standard V have been defined in the form of Minimum Levels of Learning. Do you think that this has influences positively the quality of learning?

Yes ☐ No ☐

ii. If yes, do you think the specification of MLLs for classes in upper primary and above should also be made?

Yes ☐ No ☐

iii. If no, what do you think are the reasons (Tick mark)

(a) Many teachers do not know about them
(b) Many teachers are not properly trained in them
(c) They are implemented properly in schools
(d) They are not practicable due to insufficient instructional time
(e) They are not practicable due to insufficient resource
(f) Any other (specify)

12. If weightage suggested in the present school curriculum frame work for different subjects at different levels of schooling is given in the following table. If the weightage suggested is not appropriate, indicate in the brackets provided the weightage to be assigned to different subjects at different levels.

	Lower Primary	Upper Primary	Secondary
Language	30% ( )	32%( )	30%( )
Mathematics	15%( )	12%( )	12%( )
Science	15%( )	12%( )	12%( )
Social Science	10%( )	12%( )	12%( )
Work Experience	10%( )	12%( )	12%( )
Art Education	10%( )	10%( )	8%( )
Health & Physical Education	10%( )	10%( )	8%( )
Contemporary India	-	-	6%( )
Total	100%	100%	100%

APPENDIX B

QUESTIONNAIRE ON LANGUAGES EDUCATION

1. Is the Three-Language Formula implemented by your State in its Schools ?

   Yes ☐ No ☐

2. Should the Three-Language Formula be continued ?

   Yes ☐ No ☐

3. Would you like all the students to learn English language as a compulsory subject?

   Yes ☐ No ☐

   If yes, when should English be introduced ?

   a) At the pre-school stage
   b) In the First Standard
   c) In the Third Standard
   d) In the first year of the Upper Primary Stage (Standard V or VI)

4. Should Hindi be taught as a compulsory language in all the states?

   Yes ☐ No ☐

5. The third language, such as Hindi, Sanskrit and Marathi,

   a) should be introduced in class _____.
   b) Should be taught upto class _____.

6. For the second language to be taught upto the secondary level, which of the following is most important (tick only one).

   a) teaching Grammar and structural nature of the language along with the history of its development
   b) teaching the masterpieces of literature in that language and explaining its literacy theories and metaphorical use.
   c) Teaching the contemporary form of the language with all its social functions in speech and in writing and teaching only practical grammar where necessary.

7. For the third language to be taught upto the secondary level, which of the following is most important (tick only one)
   a) Teaching grammar and structural nature of that language along with the history of its development
   b) Teaching the masterpieces of literature in that language and explaining its literacy theories and metaphorical use
   c) Teaching the contemporaries form of the language with all its social functions in speech and in writing and teaching only practical grammar where necessary.

8. Out of three points below, which one would you agree to?(Tick only one of the options).
   i) Standardize the grammatical structure and accent of all the languages taught
   ii) Retain the regional varieties of the structure and accent of all the languages
   iii) Standardize the official and the Associate Official Languages (Hindi and English) of India and retain regional varieties of all the other national languages.

9. a) Which language would you prefer to be the medium of instruction at the different school stages ? Tick in the appropriate column.

Stage	Home Language/ Tribal Language Dialect	Standard Regional Language	English	Any other (specify)
Pre-school				
Primary				
Upper Primary/ Middle				
Secondary				
Senior/Higher Secondary				

b) If you think that Home Language/Tribal Language/ Dialect is to be retained for some time, till which class should it continue ?

_____

10. Should a foreign language, like French or Chinese for example, be taught as a Second/Third language in lieu of Hindi or a modern Indian language ?

Yes ☐ No ☐

11. a) Should a classical language like Arabic or Persian or Sanskrit be taught in Schools ?

Yes ☐ No ☐

12. Which of the following are the objectives of teaching English in Schools today? (Tick mark one or more of the following depending on your perception).
    a) to write and speak English whenever and wherever required
    b) to read English literature written by great authors
    c) to cultivate good style of writing by imitating good authors
    d) to help in getting good job, keep it and make progress
    e) to get social prestige, privileges and carry influence
    f) to acquire the latest knowledge of different school subjects one has to study
    g) to make a great scholar

13. Should students at the school level be taught the skills of listening and speaking in English?

    Yes ☐ No ☐

14. Which of the following types of English grammar should be taught in schools?
    a) Theoretical, prescriptive grammar as a subject
    b) Functional, descriptive grammar

15. Which approach of teaching English would you prefer?
    a) Structural approach
    b) Aural-oral approach
    c) Communicative approach
    d) Situational approach

16. a) How do you rate the textbooks currently being used at different levels?

	Lower Primary	Upper Primary	Secondary
First Language: a) Extremely good and useful b) Very good c) Just good enough d) Poor and useless e) Worthless and out-dated			
Second Language: a) Extremely good and useful b) Very good c) Just good enough d) Poor and useless e) Worthless and out-dated			
Third Language: a) Extremely good and useful b) Very good c) Just good enough d) Poor and useless e) Worthless and out-dated			

b) Give reasons for the answers given by you above

Lower Primary
Upper Primary
Secondary

17. What is your opinion about the reading material in the textbooks followed for teaching the first, second, and third languages. Put tick marks in the appropriate cells.

	Too much and heavy	**Just adequate and Manageable**	**Too little and light**
First language Second Language Third Language			

18. Give your opinion regarding the exercises/activities presented in the language textbooks (Mark your agreement by putting tick marks in the relevant cells).

	I Language	**II Language**	**III Language**
a. Caters to the development of all skills in language			
b. Caters to the development of some skills only			
c. have variety			
d. interesting for the learner			
e. thought provoking and creative			
f. provides scope for practice			
g. caters to memorisation			
h. provide scope for evaluation of skills			

19. Who among the following is suitable to teach Language ?

a) Any teacher qualified to teach any subject(s)
b) Only those teachers who have studied the concerned language as a major subject but might not have studied the methodology of teaching the langauge
c) Only those teachers who might not have studied the concerned language as a major subject but might have studied the methodology of teaching it.
d) Only those teachers who have studied both the langauges and the methodology of teaching it.

APPENDIX C

QUESTIONNAIRE ON SCIENCE AND MATHEMATICS EDUCATION

1. Do you think that adequate emphasis is given to oral mathematics at primary stage?

   Yes ☐ No ☐

2. To teach mathematics in elementary classes the teacher should have studied mathematics

   i. up to X Standard ☐

   ii. at PUC or intermediate ☐

   iii. at degree level ☐

   (Put tick mark against the answer selected by you above)

3. a) Should mathematics be compulsory for all up to 10 years of School Education?

   Yes ☐ No ☐

   b) If yes, should there be only one course for all?

   Yes ☐ No ☐

   c) If no, do you suggest one course for those who will pursue their career in mathematics and another course for those who will not.

   Yes ☐ No ☐

4. a) Like science laboratory, do you feel there should also be provision for a mathematics laboratory?

   Yes ☐ No ☐

   If yes at which level:

   i) At secondary level Yes ☐ No ☐

   ii) At senior secondary level Yes ☐ No ☐

b) Should there be practical examination in mathematics?

Yes ☐ No ☐

If yes, at which level ?

i) At secondary level Yes ☐ No ☐

ii) At senior secondary level Yes ☐ No ☐

5. a) Should students be allowed to use calculators for solving problems during examination?

Yes ☐ No ☐

If yes in which subject?

i) Science Yes ☐ No ☐

ii) Mathematics Yes ☐ No ☐

b) If yes should calculators be allowed at

i. Primary level? Yes ☐ No ☐

ii. Upper Primary Level? Yes ☐ No ☐

iii. Secondary Level? Yes ☐ No ☐

iv. Senior Secondary Level? Yes ☐ No ☐

6. Do you feel, there should be two courses in mathematics at senior secondary level one for science students and the other for commerce students.

Yes ☐ No ☐

7. Does the present mathematics curriculum cater to the needs of the related subject:

Yes ☐ No ☐

i. At primary level? Yes ☐ No ☐

ii. At Upper Primary level? Yes ☐ No ☐

iii. At Secondary level? Yes ☐ No ☐

iv. At Senior Secondary level Yes ☐ No ☐

8. Does the present mathematics curriculum equip the students to deal with the problems/issues of day to-day life:

i. At Primary level? Yes ☐ No ☐

ii. At Upper Primary level? Yes ☐ No ☐

iii. At Secondary level? Yes ☐ No ☐

iv. At Senior Secondary level? Yes ☐ No ☐

9. a) Do you think that mathematics curriculum is overloaded for students:

i. At Primary level? Yes ☐ No ☐

ii. At Upper Primary level? Yes ☐ No ☐

iii. At Secondary level? Yes ☐ No ☐

iv. At Senior Secondary level ? Yes ☐ No ☐

b) Do you think that Science Curriculum is overloaded for students:

i. At Primary level? Yes ☐ No ☐

ii. At Upper Primary level? Yes ☐ No ☐

iii. At Secondary level? Yes ☐ No ☐

iv. At Senior Secondary level? Yes ☐ No ☐

10. In secondary mathematics should Geometry theorems be presented:

i. with proof (deductive axiomatic)? Yes ☐ No ☐

ii. with inductive/activity based approach? Yes ☐ No ☐

iii. with activity approach followed b deductive proof? Yes ☐ No ☐

11. Do you agree to the existing practice of teaching EVS-I and EVS-II separately in classes III to V ?

Yes ☐ No ☐

If no what kind of changes should be brought about to integrated EVS-I and EVS-II ? Specify.

12. Do you feel Science should be compulsory up to 10 years of school education to prepare scientifically literate citizens?

Yes ☐ No ☐

If yes put a tick mark against one of the following:

i. one course for all students Yes ☐ No ☐

ii. two separate courses Yes ☐ No ☐

13. What is your opinion about approach to teaching of science at secondary level keeping in view the curriculum transaction in classroom? It should be (tick any one of the following).

i. Disciplinary approach ☐

ii. Integrated approach ☐

14. To teach science in elementary classes, the teacher should have studied science: (Put tick mark against the answer selected by you)

i. up to X standard ☐

ii. at PUC/Intermediate level/Senior Secondary ☐

iii. at degree level ☐

15. Do you feel that the existing Science Curriculum helps the students to understand societal/environmental issues?

Yes ☐ No ☐

16. How can more emphasis be given to the development of certain scientific skills and experimentation? Mark your response by putting a tick against each statement in the box provided.

a. by allocating periods specifically for this purpose ☐

b. by arranging field visits frequently ☐

c. by arranging demonstrations in classrooms ☐

17. Do you feel that the content at secondary level provides adequate foundation for studies at senior secondary stage:

i. in science ? Yes ☐ No ☐

ii. in mathematics? Yes ☐ No ☐

If no, suggest measures to provide a better content foundation at secondary level.

_____

_____

18. a) Do you feel that the present courses in science and mathematics at the secondary and senior secondary stages really cause stress and anxiety among students in general?

Yes ☐ No ☐

b) If yes what measures would you suggest to reduce/minimize this tension and anxiety? Please specify.

19. Please specify if you have any other suggestions which you consider most important for inclusion in the school curriculum framework.

_____

_____

_____

_____

APPENDIX D

QUESTIONNAIRE ON SOCIAL SCIENCE EDUCATION

1. To teach Social Studies, the teacher should have studied the following subject/s.

	Upper Primary	Secondary
History		
Geography		
Economics		
Political Science		
Sociology		
Any other (specify)		

2. a) Like science laboratory, do you think that there should also be provision for a Social Studies laboratory.

Yes ☐ No ☐

If yes, at which level/s?

i) Upper primary

ii) Secondary

iii) Senior Secondary

b) Should practicals be an essential part of teaching of Geography?

Yes ☐ No ☐

3. i) Does the Social Science curriculum in schools adequately address the socio-cultural issues of present day India?

Yes ☐ No ☐

ii) If yes, indicate the extent to which it does so.

Fully ☐ Partially ☐ Very little ☐

4. i) Does the Social Science curriculum in schools help students acquire sensitivity to respond to the socio-clultural needs/problems of present day India?

Yes ☐ No ☐

ii) If yes, indicate the extent to which it does so.

Fully ☐ Partially ☐ Very little ☐

5. a) Should Social Sciences be taught as (tick your choice).

1. An integrated subject
2. Composite course (different subject areas brought under the umbrella of Social Science).
3. Thematic Approach partially separate, partially integrated.

b) Do you think that the approach suggested by you above is being followed in schools ?

Not at all ☐ To some extent ☐ To a large extent ☐

6. Do you think that the Social Science curriculum is overloaded for students

Yes ☐ No ☐

If yes, indicate the levels at which it is overloaded by ticking

a) Upper primary
b) Secondary
c) Senior secondary

7. Do you think that the content of Social Studies taught at Secondary level provides adequate foundation for learning the content at the senior secondary level ?

Yes ☐ No ☐

8. Which of the following core curricular components are reflected in the existing Social Sciences curriculum(indicate by ticking).

a) India's Freedom Movement Constitutional obligations
b) National identity
c) Our Cultural Heritage
d) Equality of Sexes
e) Protection of Environment
f) Egalitarianism, Democracy and Secularism
g) Removal of Social Barriers
h) Population and Small Family Norm
i) Human Rights
j) Scientific Temper
k) National Integration

9. At Senior Secondary level, should the students opting for science streamlearn "Social Sciences" asa part of general education ?

Yes ☐ No ☐

10. At the Senior Secondary level, should the students opting for social science stream learn "Science" as a part of general education?

Yes ☐ No ☐

11. Should a student opting for Social Science stream at Senior Secondary level study history, geography, civics and economics compulsorily.

Yes ☐ No ☐

12. Indicate by ticking, which of the following objectives of social science can be achieved through the present social science curriculum.

Upper Primary Level :

a) Awareness about India's past - the social, cultural and scientific developments.
b) Appreciation for diversities in ways of living and interdependence of various regions of India and the world.
c) Knowledge of the civic and political institutions and also the contemporary social and economic conditions and problems.

Secondary Level :

a) Awareness about the stages of development of human civilization and the historical forces that have shaped the modern world.
b) Understanding of India's cultural heritage and the struggle for freedom.
c) Understanding of the contemporary world problems and India's role in world peace, international co-operation and decolonisation.