

TAMILNADU COMMON SCHOOL EDUCATION CURRICULUM, 2009

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TAMILNADU SCHOOL EDUCATION CURRICULUM, 2009

1. INTRODUCTION

கேடில் விழுச்செல்வம் கல்வி ஒருவற்கு

மாடல்ல மற்றை அவை

- திருக்குறள் 400

Learning is wealth none could destroy

Nothing else gives genuine joy.

School education is the foundation for the superstructures of higher academic as well as professional education. Tamilnadu has been in the forefront of education and training of professional personnel such as teachers, doctors, engineers, lawyers, accountants, bureaucrats, technocrats, social, political and religious leaders, cultural exponents contributing not only to our country but to all the world over. Tamilnadu is seen as the fragrant symbolic spot on the forehead of the nation to the extent of “அனைத்துலகும் இன்பமுற”. Our concept of globalization “யாதும் ஊரே யாவரும் கேளிர்” has been the clarion call of our literateurs. “கற்றோருக்குச் சென்ற இடமெல்லாம் சிறப்பு” and “திரைகடலோடியும் திரவியம் தேடு” have been our experiences in the past and even in the present. Children of Indian origin achieve unique honours on foreign land signaling the brightness dormant in the youth.

That future should continue to be so with our educational command and contribution is recognized by one and all. Even now we have registered success in many projects including DPEP and ‘Education for All’. Universalisation of Elementary Education, Increasing literacy percentage, compulsory free education not merely up to 14 years of age but even to higher age-group, no formal examination, no drop-outs, retention or stagnation and adult and non-formal education are still fields to achieve more. More and more schools have been established and many of them are regularly upgraded to provide abundant opportunities for our children to move up the ladder of education.

Quantitative expansion needs to be coupled with qualitative education at all levels. After merging the four systems of school education in our state to adopt a unified system of school education there is a need to consider the aspirations of parents and their children for achieving high in the field of education. The different purposes of the existence of the four

systems have come to be unified with a single system within the state to cater to the newer needs. New generations of learners, modern facilities for acquiring further knowledge and latest skills and the competitive world market for Indian achievers drive us to have a continually updated curriculum at the school level. More than the quantum and nature of content which is said to be the criterion for setting the standard of education there is a vital need to trigger the embedded skills of learning appropriate to different subjects of studies. Basic to all new academic disciplines mostly inter-disciplinary in nature are the fundamental traditional subjects like Languages, Mathematics, Sciences and Social Sciences and studies. These five basic subjects with their relevant disciplinary structures require different learning strategies for equipping the learners with potentials for kinetically facing myriad changes occurring in day-to-day life.

Government schools, Government aided schools and private schools have to work hand in hand in achieving this laudable attainment. Different emphases laid in the four systems of school education need to be unified to lay a firm foundation for further education, successful careers and multi-faceted life. The original aim of preparing students for university education through matriculation education has merged with the set-up of matriculation schools as a state system. The Anglo-Indian Schools catering to the special needs of children in Anglo-Indian families attract children from other families and get reduced attention because of the socialization prevalent among them today. Oriental schools had a different orientation mainly in terms of languages, Sanskrit and Arabic and their attendant cultures. The State Board schools being common to all absorbed these special characteristics in such a way there arises a unified system. Hence the need for a common curriculum incorporating the features desired by our parents and their wards has to be developed.

Another consideration in developing this curriculum is the effect of early childhood education as an undergrowth of formal school system, not merely in metropolitan and urban areas but even in semi-urban, not necessarily rural areas. Although Chittibabu Committee's recommendations have been accepted in principle the state has not yet implemented the recognition of so-called pre-schools for the children of 3 to 5+ years said to be following Nursery, Kindergarten and Montessorie systems. In the meanwhile another downward extension of the system has emerged with the functioning of play-schools meant for children of the age-group 2.5 -3.5 years. The possibility of Child Care Centres or Creches fast developing into another formal system for 6 months to 2.5 years old children cannot be ruled out at least in urban areas. The impact of these infra-school systems cannot be completely

ignored in designing the School Curriculum. Economic, social and family reasons catapulted these institutions in the education and training of infants and children before their formal admissions to Std.I. Like the parallel systems of Adult and non-formal education this informal education needs to enter into our curriculum development as a determinant.

Another consideration is the increasing attestation of learning difficulties such as dyslexia, dysgraphia and dyscalculia among the primary school children necessitating remedial measures required to make them move along with other normal children especially in the wake of the adoption of Activity Based Learning at that level continued as Active Learning methodology at VI to VIII level and planning to extend similar learning processes to IX and X too in our state. Besides these, there has arisen the need for school counselors to counsel not only children but also their parents and teachers as in vogue in some CBSE schools in metropolitan areas. Urban children are sent for additional skills development during summer vacation resulting in the lack of intended relaxation on the one hand but providing extra-skills not included in their curricular activities. Information Technology has also made strong inroads into the current school system to the extent of introducing e-learning in some schools with the possible extension to other schools. The common school education curriculum has to take into account these developments too, however small they may be at the moment, as the futuristic view provides some useful inputs in the curriculum especially in transactional strategies suggested and the media and materials to be used in teaching according to the curriculum.

Adopting learning-focussed information-processing approach requires limited content as the springboard for development of many modern skills desired and expected by students through a variety of interesting learning experiences provided through the learning resources managed by the teachers in their classrooms. As expressed above volume of content is not justified for quality of learning. But the extent of imaginative and innovative instructional techniques will attract and readily involve today's students in the interactive teaching-learning process for optimal results. The advent of electronic gadgets like computers and mobile phones has infused a spirit of speed and accuracy in young minds becoming more and more sportive in their actions.

2. SCOPE

வினைக்குரிமை நாடிய பின்னை அவனை

அதற்குரியன் ஆகச் செயல்

- திருக்குறள் 518

His fitness for the duty scan

Leave him to do the best he can.

The common school education curriculum should cater to the current and even future needs of the learners.

The aspirants of school education expect life skills to be developed in them throughout the 10-year course. Academic and vocational skills have to go hand in hand to move from the present form of bookish learning reminding us of the adage, “ஏட்டுச்சுரைக்காய் கறிக்குதவாது.” Self-reliance, self-concept, independence, freedom of action and expression and ability to assert are very much among the likes of today’s children as they can help them to live in an atmosphere at home and in the neighbourhood with the prevailing nuclear family structure and powerful peer pressure affecting them fast and deep. The Minimum Levels of Learning and developing stated competencies are in line with ABL and ALM strategies provided learning materials are designed attractively and directly relevant to these objectives. Thirst for continuous learning can be quenched if the experiences are chosen from real life around. Intertwining knowledge creation and development with improved and innovative skills through problem-solving learning contexts immensely increase the scope of the curriculum. Reduced or no homework, ready involvement in classroom activities relevant to the subjects of study with periodic practice while learning lead them on to perform well in life and career. Both languages and content subjects need to rely on such eventualities anticipated by the designers and implementers of the curriculum. All children have to complete at least school education with the choice of going for jobs or higher studies or technical and vocational education. To fulfil this need basic knowledge and skills are to be in the storehouse of their personality. Evaluation is natural at every stage for periodic accumulation at the end of a course. The different stages such as I to V, VI to VIII and IX and X can have stage-end practice phases for checking and satisfaction in the minds of the learners appreciated by their teachers, examiners, parents and users such as higher level

teachers and employees and customers. Flexibilities like lateral entries into higher courses can be useful only if they are fully and successfully utilized.

After ten-year schooling there are many opportunities to pursue education.

- Higher Secondary Education (XI-XII Standards) – academic or vocational streams
- Polytechnic Diplomas in Engineering/Commerce
- Open learning under Open School/distance learning/ internet learning for life-long learning and real-life relevance
- Certified Skilled workers after Industrial Training institutes
- Board of Apprenticeship Training and National Vocational Certificates after vocational streams/ITIs
- Laboratory technician programmes in engineering and healthcare fields
- Private Institutional programmes in Computer, Information Technology
- Private training in communication, travels, tourism and other industries
- Entrepreneurial ventures after appropriate initial service
- Trained Work Assistants in various establishments like law, commerce, estate offices, non-governmental organizations, courier services, collection for banks
- Training in Sales and marketing, Repair and maintenance of common household equipments and annual maintenance service
- Tourism, travel. Ticketing, event management
- Provision for assistance in real estate and flat promotion and other construction industries

Any service establishments require additional training after Std. X for two more years of further education/ training/ apprenticeship. The Right to Education Act enables the school-leavers to further and sharpen their skills for rendering useful service to the society.

The National Curriculum Framework 2005 has already emphasized the following:

- Connecting knowledge to life outside the school
- Ensuring that learning is shifted away from rote methods
- Enriching the curriculum to provide for overall development of children rather than remain textbook centric
- Making examinations more flexible and integrated into classroom life
- Nurturing an over-riding identity soaked in caring concerns within the democratic polity of the country.

With several newer avenues open for further education and training and consequent services available to skilled persons the new curriculum needs to consider such opportunities for using the knowledge and skills gained in school education.

‘Education is not a physical thing that can be delivered through the post or through a teacher. Fertile and robust education is always created, rooted in the physical and cultural soil of the child, and nourished through interaction with parents, teachers, fellow students and the community. The role and dignity of teachers in this function must be strengthened and underlined. There is a mutuality to the genuine construction of knowledge. In this transaction the teacher also learns if the child is not forced to remain passive. Since children usually perceive and observe more than grown-ups, their potential role as knowledge creators needs to be appreciated.’(Yashpal in NCF 2005)

3. AIMS, GOALS, OBJECTIVES AND COMPETENCIES

கற்றறிந்தார் கல்வி விளங்கும் கசடறச்

சொல்தெரிதல் வல்லார் அகத்து. - திருக்குறள் 717

The learning of the learned shines

Valued by flawless scholar-minds.

This common school education curriculum aims at developing active and committed citizens in the national stream of sustainable economic and industrial development with technological base, social cooperation, cultural extensions, scientific attitude and language proficiency. A spirit of tolerance needs to be imbibed in our children's minds by performing in cohesive groups for gaining from a variety of learning experiences designed to achieve unity in diversity in life and career. Basic skills such as classical culture and values, effective communication, complex computations, keen observation and logical analysis and rich heritage, individual and social behavior, and economic thinking and action, are attributed to the learning of common subjects of Tamil, English, Mathematics, Science and Social Science. IT skills, good physical health, basics of fine and performing arts, tendency to do social service, oriental thoughts and practices, and sportive spirit are developed by additional subjects like Computer study, health and yoga, arts and music and sports and games and an additional language.

Besides subject proficiency and application school-leavers should practice individual goal-setting integral to social justice and endeavour to achieve the same by means of well-designed classroom and social activities. A vibrant strategic spirited youth should be the outcome of 10-year common school education through the programmes phased through the primary, elementary, and secondary stages. Learning should be a fun and teaching a pleasure. Learners should willingly participate in the process. Teachers need to design a variety of activities to actively and voluntarily involve the learners individually and in groups. Textbooks have to be used more as a teaching aid than as a commanding source of teaching and learning. The resultant goal is a good citizen with integrity and pro-active tendency to contribute to the promotion of Tamil culture as a coeval of Indian culture entrenched in peaceful and progressive mankind.

‘The multilingual character of Indian society should be seen as a resource to promote multilingual proficiency in every child, which includes proficiency in English. This is possible only if learning builds on a sound language pedagogy in the mother tongue. Reading and writing, listening and speech, contribute to the child’s progress in all curricular areas and must be the basis for curriculum planning. Emphasis on reading throughout the primary classes is necessary to give every child a solid foundation for school learning.

The teaching of mathematics should enhance the child’s resources to think and reason, to visualise and handle abstractions, to formulate and solve problems. This broad spectrum of aims can be covered by teaching relevant and important mathematics embedded in the child’s experience. Succeeding in mathematics should be seen as the right of every child. For this, widening its scope and relating it to other subjects is essential. The infrastructural challenge involved in making available computer hardware, and software and connectivity to every school should be pursued.

The teaching of science should be recast so that it enables children to examine and analyse everyday experiences. Concerns and issues pertaining to the environment should be emphasised in every subject and through a wide range of activities involving outdoor project work. Some of the information and understanding flowing from such projects could contribute to the elaboration of a publicly accessible, transparent database on India’s environment, which would in turn become a most valuable educational resource. If well planned, many of these student projects could lead to knowledge generation. A social movement along the lines of Children’s Science Congress should be visualised in order to promote discovery learning across the nation, and eventually throughout South Asia.

In the social sciences, the approach proposed in the NCF recognises disciplinary markers while emphasising integration on significant themes, such as water. A paradigm shift is recommended, proposing the study of the social sciences from the perspective of marginalised groups. Gender justice and a sensitivity towards issues related to SC and ST communities and minority sensibilities must inform all sectors of the social sciences. Civics should be recast as political science, and the significance of history as a shaping influence on the child’s conception of the past and civic identity should be recognised.’ (NCF 2005)

Stagewise instructional objectives can be stated as follows:

At the primary stage of I to V (6-10 years) children need to extend their love and affection beyond the family and neighbourhood.

- They have to be proficient in and proud of their language and culture reflected in the literature and in fundamental linguistic features.
- There is a vital need to use English for simple communicative acts not as a foreign language but as a second language.
- Making Arithmetical operations mentally and applying them in day-to-day needs has to be the outcome of learning Mathematics at this stage.
- A scientific awareness is a must for children to optimally use the new gadgets available to them both for playing and for performing social feats.
- Historicity, geophysical occurrences, civic habits and managing resources such as time, money and efforts make way for effective self-perception and self-management.
- Languages specific to their family events and festivals add to the vitality and smoothness of real life.
- Health conscious children will be able to regulate their food habits and physical activities for an over-all development of body, mind and spirit.
- Arts and music blend the niceties of human life towards the joy of life and support features for happiness and contentment.
- Social mores as values are integrated into languages and social sciences besides other subjects of learning to such an extent that they are integrated into the characteristics of our children.

At the elementary stage of VI to VIII (11 to 14 years of age) the children will be able to achieve the following objectives:

- Use of literary quotes and linguistic fluency in natural Tamil expressions
- Communicative skills to read simple English texts such as news items and write essential letters and convey important information

- Logical thinking through codification and symbolization and solve simple problems arising around them
- Scientific spirit - observe, collect and analyse objects around to evolve commonness in them for purposes of classification
- Social justice through the study of cultural development over the ages, spread of geographical features over the country's landscape, essential citizenship characteristics and economic considerations in all the activities
- Computer skills to search for the required information in understanding the subjects learnt
- Awareness of healthcare and prevention of diseases and develop physical agility and mental alertness in school life and later.
- Sublime attitude and enchanting mind through the study of Arts and Music

The crucial secondary stage of IX and X (of the age-group of 15 – 16) should prepare them for choosing a path to higher education and/or career-orientation besides being ready to pursue such chosen path with determination with the following objectives:

- Command all facets of Tamil in order to gain multi-disciplinary knowledge expressing specific and relevant forms for effective communication in suitable occasions of life.
- Use English for successful interpersonal relations with compatriots as well as visiting foreigners
- Mastery of the basics of Mathematics to become ready for real-life problem-solving or to specialize at higher levels of application towards super-speciality or professional education
- Scientific approach to the areas of food, hygiene, travel and communication by means of experiments, explorations and enjoyment need to develop safety and security in one's own life and work
- Harnessing national resources commensurate with sustainable economic development and for national integrity and sovereignty in all social life.
- Familiarity with different computer applications for educational and occupational performance
- Artistic development in maintaining science and social science records

Having considered different subjects of study at different levels and stages the harmonious development of school pupils ready to take on nuances of life around them it is found necessary to strengthen their competencies in each area by listing them, and providing for opportunities through specific content and specialized methodology. Syllabuses have to be formulated in accordance with the conditions set forth in the next section.

4. SUBJECTS OF STUDY AND DURATION

யாதானும் நாடாமால் ஊராமால் என்னொருவன்

சாந்துணையும் கல்லாத வாறு

- திருக்குறள் 397

All lands and towns are learner's own

Why not till death learning go on!

The subjects of study in the revised curriculum for Common School Education (Samacheer Kalvi Thittam) will be as follows;

Standards I-V

Tamil, English, Mathematics, Environmental Science (I-II), Science (III-V) and Social Science are the subjects to be studied.

Basic linguistic skills in Tamil need to be developed at this stage. Numeric system by way of grouping and counting objects around requires mastery of the four arithmetical operations such as addition, subtraction, multiplication and division. Understanding the features of animals and plants in the children's environment instills in them the spirit of appreciation in their growth. An extension of these skills helps children appreciate the contribution of the flora and fauna of the natural and ecological importance. Cultural development is central to the study of community in the neighbourhood to function as an effective member. Sports and games, health and hygiene and food and work besides arts, crafts, music and drawing are necessary in primary classes for over-all development of body and mind.

Standards VI-X

The following languages, core subjects and other activity-related subject areas are the content of the curriculum for Standards VI-X:

Tamil, English, Mathematics, Science, Social Science, Physical and Health Education (including games and sports, yoga practice and Asanas), Computer Education, Art Education, Crafts and Work Education, Value Education, Curricular and Extra-curricular Activities.

Practicals in Science Subjects

Science is the study of phenomena and events around us through systematic observation and experimentation. Science education cultivates students' curiosity about the world and develops scientific thinking and attitude. Science experiments and practicals are very useful to develop enquiry skills among the young learners. Hence students will be required to do some science experiments in classes VI-X. Every week two contiguous periods will be allotted for doing practicals in Biology, Physics and Chemistry. In Standard X public examination there will be a practical examination in science.

Computer Education

Considering the importance of and the need for the use of computers in day-to-day life in all spheres, Computer Education is included in as one of the subjects from Standard VI.

Value Education

Provision for inculcation of moral values has been made in all the subjects by means of an in-built approach in the syllabus. Value components are to be integrated with the transaction strategies of all subjects especially languages and social science and in co-curricular activities. Values are to be lived and not simply taught and learned as such.

Work Schedule for Teaching-learning activities

Allocation of periods for Classes I-V in Primary Schools only

Activity-Based Learning as self-initiated self-developing progressively satisfying scheme is a form of individualized instruction. Consequent to the success of this scheme in Government and Aided Schools this can be extended to the other schools. The textbooks prepared for these classes can help designing and developing ABL cards with reference points in these books. As the timing is flexible there is no need for separate allocation of periods for the subjects listed above. However the simplified form of Active Learning Methodology to be adopted in VI - VIII can be followed in Standard V.

The heads of linguistic minority primary schools can allocate the required periods for the third language from among the total periods available.

However, until the schools switch over to ABL they may follow the following allocation:

Std	Tamil	English	Maths	EVS/Science	Social Studies	Phy. & Health Edn.	Arts, Music & crafts	Library & Env'tl. Edn.	Total number of periods
I	9	6	6	8	-	3	2	1	35
II	9	6	6	8	-	3	2	1	35
III	8	6	6	5	5	2	2	1	35
IV	8	6	6	5	5	2	2	1	35
V	8	6	6	5	5	2	2	1	35

Note: The number of periods per week is 35 @ 40 minutes each and the total number of working days is 220.

Allocation of periods for Classes I- VIII in Upper Primary Schools

Std	Tamil	English	Maths	EVS/ Science	Social Studies	Phy. & Health Edn.	Computer Edn.	Arts, Music & crafts	Library & Env'tl. Edn.	Total number of periods
I	9	6	6	8	-	3	-	2	1	35
II	9	6	6	8	-	3	-	2	1	35
III	8	6	6	5	5	2	-	2	1	35
IV	8	6	6	5	5	2	-	2	1	35
V	8	6	6	5	5	2	-	2	1	35
VI	6	6	6	6	5	2	2	1	1	35
VII	6	6	6	6	5	2	2	1	1	35
VIII	6	6	6	6	5	2	2	1	1	35

Note.1) No. of Periods per week is 35 @ 40 Minutes each and the total no. of working days is 220.

2) In respect of Co-curricular activities Status quo will be followed in Syllabus and Periods.

Allocation of periods for Classes VI- VIII in High and Higher Secondary Schools

The total number of working days will not be less than 200 days in an academic year, out of which 180 days will exclusively be utilized for actual teaching-learning process in the classroom and the remaining 20 days for examinations and other activities.

Working Hours

The number of working hours per day will be 5 hours and 40 minutes as follows:

Morning Session: 4 periods of 45 minutes, i.e. 4x45=180 Minutes

Afternoon session: 4 periods of 40 minutes, i.e. 4x40= 160 Minutes

Total: 340 minutes = 5 hours and 40 minutes

Sub	No of periods per subject in a week									
	Tamil	English	Mathematics	Science	Soc. Sc.	Phy. & Health Edn.	Computer edn.	Arts, music Craft Edn	Library reading & Env't Edn	TOTAL
VI	7	7	7	7	6	2	2	1	1	40
VII	7	7	7	7	6	2	2	1	1	40
VIII	7	7	7	7	6	2	2	1	1	40

Note: Third language like Sanskrit or Urdu or any, if preferred by the school, may be offered as an additional subject sharing 4 periods with the 7 periods allocated for the four examination subjects one from each and 2 periods (total 6 periods) from the 4 periods allocated for the four non-examination subjects included in the above table, viz. Physical and Health Education, Computer Education, Arts, Music, Crafts Education and Environment education and Library reading.

Allocation of periods for Classes IX- X

Sub	No of periods per subject in a week									
	Tamil	English	Mathematics	Science	Soc. Sc.	Phy. & Health Edn.	Computer edn.	Arts, music, Craft Edn	Library reading & Env't Edn	TOTAL
IX	7	7	7	7	6	2	2	1	1	40
X	7	7	7	7	6	2	2	1	1	40

Note: 1) For X Std the Text Books in the all the five subjects will be common for all the schools in the State as published by TamilNadu Text Book Corporation.

2) Minimum of four periods should be allotted for Linguistic Minority Language as given below:

One period from Arts, One period from Computer Education, Two periods from Two Languages.

3) As there are different types of schools such as I-V, I-VIII, I-X, VI-X, I-XII, VI-XII and XI-XII the heads of these institutions may consider the above allocation more as suggestive than as prescriptive and make their own time schedules keeping to the overall principle underlying this allocation.

5. TRANSACTIONAL STRATEGIES

செய்வாணை நாடி வினைநாடிக் காலத்தோடு

எய்த உணர்த்து செயல்

- திருக்குறள் 516

Discern the agent and the deed

And just in proper time proceed.

“The status of the teacher reflects the socio-cultural ethos of the society; it is said that no people can rise above the level of its teachers.” - National Policy on Education 1986. Communication between teacher and students on the one hand and between students themselves is crucial to the transaction of the subject content in teaching-learning contexts in a classroom, laboratory or even fieldwork. Traditionally set methods of teaching remain theoretical in the teacher education curricula whereas in the real situations teachers practise their creative art of teaching adopting appropriate techniques relevant to the three aspects of teaching, learning and subject. Interaction and intra-action have become prevalent at all levels including the lower school levels. ‘The emphasis in teaching is not on didactic communication but on *non-didactic and dialogical explorations.*’

Curriculum implementers attempt several means set by various approaches to heap optimal benefits on the seekers of learning. Design of strategies have become common among them as self-learning has come to the fore thanks to repeated assertions on reflective learning in all quarters – parents, teachers, employers, educational experts and successful learners. Common to all such strategies is the interested involvement of all students in achieving each and every objective stated in the syllabuses to develop their competencies specified unit-wise in content subjects and activity-wise in languages.

The National Curriculum Framework for Teacher Education

(NCFTE, 2009) elaborates the context, concerns and vision underscoring that teacher education and school education have a symbiotic relationship and developments in both these sectors mutually reinforce the concerns necessary for qualitative improvements of the entire spectrum of education including teacher education as well. The new concerns of school curriculum and the expected transactional modalities have been emphasized in designing this

Framework for all stages of school education. India has made considerable progress in school education since independence with reference to overall literacy, infrastructure and universal access and enrolment in schools. Two major developments in the recent years form the background to the present reform in teacher education – the political recognition of Universalisation of Elementary Education (UEE) as a legitimate demand and the state commitment towards UEE in the form of the Right of Children to Free and Compulsory Education Act, 2009.

With the practice of Activity-Based Learning (ABL) in primary schools (I to IV), classroom transaction occurs with the teacher more as a catalyst than as a verbal presenter all the time allotted to him/her. Small children may need a little guidance initially to pick, choose and pursue on their own. Once they become familiar with the system they enjoy freedom in their learning. However the transactional strategies related to the set competencies are incorporated in the preparation of cards in such a way that children understand well and follow the procedure set for them. Textbooks also provide these opportunities for them to consolidate their learning gains rather than scrupulous treatment as a routine in classrooms. In any case the importance of transaction is not relegated to the background.

Similarly in V to VIII, the adoption of Active Learning Methodology (ALM) helps the teacher and the pupils jointly endeavour to satisfactorily develop the stated competencies through several alternative activities available for the pupils to choose from. Here again the transactional strategies are designed by the syllabus makers and developed by the textbook writers and classroom teachers. Unlike the traditional pattern of fixed method for each subject there is a free mix of the ingredients of various methods in the design of strategies emphasizing it is not merely the subject but the talents of pupils for acquiring newer ways of achieving the results that counts. In the absence of any promotion based examinations up to Std. VIII these transactions have a greater importance in the pupils' learning processes. Inasmuch as confidence-building strategies are in place there is no difficulty for any child to face new learning situations when he/she goes to secondary sections IX and X.

Although an extension of these efforts to the secondary classes is a definite possibility, the school leaving certificate examinations conducted by the Board at the end of Std. X and the need for considering the two classes as one unit for that purpose there is vital need for specifying possible strategies for the teachers to adopt. Laboratory orientation for English, Mathematics and Sciences and project setting for Social Sciences and the importance of co-

curricular activities besides classroom learning experiences need coordination of relevant strategies. Literary skills and communicative competence in Tamil and English and other languages require several practice sessions within and outside the curricular ambits. 'Proficiency in English is widely perceived as an important avenue for employment and upward mobility, which also greatly facilitates the pursuit of higher education. The incorporation of English into the curriculum through the teaching of English as a language from Class I - - - - - requires making pedagogical changes to contextualise language learning, increasing the availability of English language teachers and providing more bilingual and supplementary teaching materials. At the same time, multi-linguality must be promoted and language issues must be explicitly taken on board in designing school curricula and methods of pedagogy.'(NKC) Problem-solving approach, catering to individual needs and involving effective use of all available learning resources need to provide opportunities to achieve mathematical frame of mind of abstraction, codification, appropriate operations and then decoding for real-life applications. Science subjects have to focus on the need for developing the cause-and-effect relationship in all the events observed and analysed by students under the supervision rather than stage-by-stage guidance of teachers. More and more demonstrations and follow-up practices using real or at least functionally contrived objects rather than diagrams and theory verifications will engender the much needed scientific spirit among students for developing such an outlook in their performances in real life. Laboratories need to be equipped and spaced adequately for students' experimentation. Social sciences may need storytelling and map-drawing approaches more for understanding what happened before as reasons for events happening currently for purposes of assessing and re-assessing the reasons and happenings either for strengthening positive trends or for reducing the effect of the past besides preventing any re-occurrences at least in thought and word leaving action when they grow up. Social Studies including history, geography, civics and economics have to be considered as human sciences different from basic sciences in their pedagogic treatment for adopting transactional strategies. Project orientation can be more suitable than Lab- experimentation as the after-effects are crucial. Once again it is left to the teachers to choose and/or design their strategies considering the local conditions. Computer Science has no set methodology as yet but hands-on experience and recent additions to the field point to a combined strategy of problem-solving approach and experimentation besides application of projects already done as well as ones on hand. Information technology is the dire need for modern life and work to the extent that there should be innovative and alternative strategies for developing computer-savvy students coming out of schools.

Sometimes teachers may have to go beyond the syllabus for such a training to be offered to their students. Artistic talents need to be nurtured by promoting the embedded active interest, discovering the same and suggesting avenues for self-development through appropriate school activities.

‘All institutions should ensure a critical mass of teaching faculty conversant with subject expertise and expertise in test development, validation, organization of administration of computer based written exams, essays - long and short, right/wrong etc.Teaching methodologies need to be changed from chalk and talk to include computer assisted learning, AV facilities as basic requirements to inculcate habits of life-long learning and use of communication technology, to access information, methods of teaching/learning must be compatible with educational objectives and must promote learning.’

‘In order to develop future citizens who promote equitable and sustainable development for all sections of society and respect for all, it is necessary that they be educated through perspectives of gender equity, the perspectives that develop values for peace, respect the rights of all, and respect and value work. In the present ecological crisis, promoted by extremely commercialised and competitive lifestyles, teachers and children need to be educated to change their consumption patterns and the way they look at natural resources.’

6. EDUCATIONAL MEDIA

பொருள் கருவி காலம் வினை இடனொடு ஐந்தும்

இருள் தீர் எண்ணிச் செயல்

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Money and means, time, place and deed

Decide these five and then proceed.

'Medium is the message,' said Marshal McLuhan. Teachers' use of media enhances the attention and understanding on the part of students during curricular transaction in the classroom. Print, audio and visual media are now combined into multimedia for the application of educational technology. E-learning has also come to stay in some private schools. Children show a lot of interest in operating the equipment on behalf of their teachers. Smart classrooms are of course expensive but heap adequate benefits on students. From the oldest teaching aid of blackboard to the newest MS Power point with LCD projectors we have come a long way in selecting and using several educational media over this long period. Templates for animation and colour highlighting will improve the quality and applicability of power point slides prepared by teachers. Commercially available DVDs provide well-illustrated lessons in all subjects for easy teaching and effective learning. Software technology enables the teachers to develop new software or to modify the existing ones to suit their needs. There is therefore a need for such training of our teachers. Computer facilities already available in schools need to be optimized for the use of teachers.

Technology cannot however replace teachers but will improve the interaction between students. Language labs and Maths labs are added to the science labs. Libraries provide not only books but also cassettes and CDs for teachers' and students' borrowing. Libraries now provide these facilities for projection of these materials for individual and group viewing. Library reading period can be fruitfully used by these means too.

Internet browsing throws up plenty of verbal, graphic and pictorial information useful to teachers and learners in adopting innovative approaches to perform their functions. Downloading select illustrative information and combining the same with classroom transaction could add to the creative art of teaching.

School children are well-versed in handling many electronic equipments used for listening to music, speaking to others, viewing many visuals and using computer graphics and animation techniques for enjoying whatever they want to see and hear. In these circumstances teachers need to be multi-skilled to match with the motivation levels and techniques of children. Following the words of Saint Thiruvalluvar,

‘எவ்வது உறைவது உலகம் உலகத்தோடு

அவ்வது உறைவது அறிவு.’ - திருக்குறள் 426.

**As moves the world so move the wise
In tune with changing times and ways.**

Teachers being knowledge workers need to be sailing the sea on the crest of the waves always how hard it may be. In this era of information technology every effort has to be taken to enthuse children in their chosen and joyous fashion. All subjects are pregnant with immense opportunities for media exploitation which need to be harnessed by teachers to be effective all the time.

Schools need to provide adequate facilities for teachers’ own preparation of appropriate media as part of their instructional planning and preparation. With the assistance of specialist teachers in Arts, Music, Computer and crafts, even with the help of children talented in their respective fields more and more educational media can be developed in schools. If necessary School clusters can be of great use in pooling the individual school’s resources for creative support to classroom teaching.

‘Integration of ICT in the learning process is essential and the students must demonstrate basic computing skills of data organization. Computer based presentations must be encouraged and facilities provided for the same. There is a need to develop libraries in institutions and make them equipped with computer based library technology to make them efficient and user friendly.’ ‘Wherever feasible, ICT should be made more accessible to teachers, students and administration for learning, training, research, administration, management, monitoring, etc. This requires the provision of more facilities such as computers as well as connectivity and broadband facilities. Computer-aided learning also requires training of teachers and other staff in order to make the best use of the technology.’ (NKC)

7. LEARNING RESOURCES AND EXPERIENCES

முயற்சி திருவினை ஆக்கும் முயற்றின்மை

இன்மை புகுத்தி விடும்

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Industry adds prosperity

Indolence brings but poverty

‘The ability of a nation to use and create knowledge capital determines its capacity to empower and enable its citizens by increasing human capabilities. In the next few decades, India will have the largest set of young people in the world. Following a knowledge-oriented paradigm of development would enable India to leverage this demographic advantage. In the words of our Prime Minister, "The time has come to create a second wave of institution building and of excellence in the field of education, research and capability building so that we are better prepared for the 21st century."

School and class libraries as learning resource centres function as mines of knowledge. Textbooks, reference books, manuals, workbooks, booklets and pamphlets, educational and subject journals, relevant professional reports and collection of school magazines form the resources for learning and teaching.

To achieve the objectives stated in the syllabuses of various subjects and classes, teachers need to enable their children gain appropriate experiences of their subject knowledge in real life. Experiential learning prepares the children for later life and career. Science laboratories, language laboratories, Mathematics laboratories and Social science laboratories (not merely museums of yester years) lead the children on to discover the knowledge embedded in the growth and development of mankind through such workplaces. Heads of schools have to arrange for time and material resources so that children ‘create’ and manage their knowledge.

Transactional strategies identified in the concerned section above guide the teachers to choose relevant learning experiences to provide in their classes. Games and episodes should gallop in the minds of teachers adopting several strategies for classroom interaction. Dynamism of teachers and educational managers at all levels from school to State emerges in the course of their discourses during visits, inspection and meetings and training programmes. From remotely rural to cosmopolitan areas spread over the five types of

landscape of the State, viz. marine, mountainous, sand-laden, forest-ridden and fertile, nature is embellished with abundance of resources for observation, utilization and appreciation as learning resources. Environment-specific resources from the lower levels to envisaged circumstantial resources at higher levels besides natural and man-made objects and processes are plentiful in the state to choose relevant learning experiences from.

To lift the present learning situation from the morass of rigidity and formality every stone needs to be unturned to the marvels of flexibility and functionality of resources and experiences provided in the school premises for practical learning of life skills and soft skills giving effect to the age-old statement of 'காகித ஓடும் கரை சேர்க்காது.' Only then they can be tested for higher order thinking skills, innovative and creative productive skills and enjoyable and aesthetic skills of appreciation and re-organisation matching or even vying with Nature's resources as observed in very few cases of persons of our origin elsewhere in the world.

National Knowledge Commission reveals the need for extensive development of manpower both quantitatively and qualitatively. National Human Rights Commission asserts the rights of the citizens to practise constitutional provisions which need to be imbibed in our school children to flourish in their intellectual and social development alongside their biological growth. National Information Commission insists on transparency in different national systems leading to the enactment of Right To Information Act (RTI). Reports of these commissions suggest a number of situations for providing learning experiences and developing learning resources. 'Our success in the knowledge economy hinges to a large extent on upgrading the quality of, and enhancing the access to, education.' 'Curriculum needs to be developed in areas belonging to the affective domain. Exemplary role models and reinforcement of positive professional development must be outlined in the sequence of observation, internalization and value complex formation.'

Teachers of all subjects, especially languages and social science, can integrate value education into their subject teaching suitably to avoid thrusting of values from outside. Co-curricular activities provide plenty of opportunities for such integration. Success stories of our leaders in several areas of public service can put forth models of good citizenship. Honours, awards, victories and championships abound nationally and internationally for adopting role plays and simulation in enhancing and enriching the much needed experiences for our children's learning.

‘The school ethos is a dimension of the curriculum as it predisposes the child towards the aims of education and strategies of learning necessary for success at school. As a resource, school time needs to be planned in a flexible manner. Locally planned and flexible school calendars and time tables which permit time slots of different lengths required for different kinds of activities, such as project work and outdoor excursions to natural and heritage sites, are recommended.’(NCF2005)

8. EVALUATION

குணம்நாடி குற்றமும் நாடி அவற்றுள்

மிகைநாடி மிக்க கொளல் - திருக்குறள் 504

Good and evil in man weigh well

Judge him by virtues which prevail.

‘Curriculum reform remains a critically important issue in almost all schools. School education must be made more relevant to the lives of children. There is need to move away from rote-learning to understanding concepts, developing good comprehension and communication skills and learning how to access knowledge independently. This also requires substantial changes in the examination system, especially at Board level but also earlier.’ Subject-wise class-wise evaluation is intended for not merely certifying that the learners have achieved the stated instructional objectives and are capable of using their learning outcomes but also providing a feedback on all aspects of curriculum to the stakeholders especially teachers and parents/higher education personnel/employees. ‘The number and nature of internal assessment examinations may be adjusted by integrating assessments of various curriculum elements to encourage integrated learning through formative as well as summative assessment.’

For classes I to IV the ABL takes care of built-in evaluation as the students pass from one level to the other level on satisfactorily attaining the required knowledge and skills at each level. Although students may go through V to VIII under the free compulsory elementary education provisions the schools need to design their own evaluation pattern more to build self-confidence in the children than to declare them pass or fail. Terminal and annual examinations need to be conducted as before using the textbooks based on the syllabus for various subjects. To the extent possible in the locality an extension beyond the syllabus may be attempted by adopting general knowledge approach to teaching and learning and to make them understand their own environment with a view to further developing the same thereby developing the children synchronously.

For Standards IX and X the syllabus needs to provide suitable inputs of evaluation such as Blueprints, Model question papers and adequate instructions to question paper setters, evaluators, teachers and students. There can be practical examinations in Science integrated

into the evaluation pattern. The annual examinations can be of 2hrs.30minutes for each paper and the languages can have two papers while other subjects will have one each with science practicals for suitable duration. Criteria for certification at the X standard level may be considered for the declaration of results. The role of non-examination subjects has to be considered in the system of evaluation by providing their scores or grades as the case may be in the Score card.

‘It is widely recognised that there is a need to shift focus from rote learning from textbooks to developing basic skills and the ability of students to apply their learning to real situations. Also creativity, problem-solving ability and encouragement for construction of knowledge based on students’ own experiences needs to be promoted. Introducing accountability and developing other measures to improve teaching quality at the primary level needs to be thought of. The National Policy on Education (NPE), 1986 postulated that the examination system should be recast so as to ensure a method of assessment that is a valid and reliable measure of student development and a powerful instrument for improving teaching and learning.’ ‘Examination reforms constitute the most important systemic measure to be taken for curricular renewal and to find a remedy for the growing problem of psychological pressure that children and their parents feel..’ Specific measures include changing the typology of the question paper so that reasoning and creative abilities replace memorisation as the basis of evaluation, and integration of examinations with classroom life by encouraging transparency and internal assessment.

‘Reducing stress and enhancing success in examinations necessitate:

- a shift away from content-based testing to problem solving skills and understanding. The prevailing typology of questions asked needs a radical change.
- a shift towards shorter examinations, an examination with a 'flexible time limit'.
- setting up of a single nodal agency for coordinating the design and conduct of entrance examinations.’ (NCF2005)

9. PREPAREDNESS FOR FUTURE LIFE AND WORK

அறிவு அற்றம் காக்கும் கருவி செறுவார்க்கும்

உள்ளழிக்கல் ஆகா அரண்

- திருக்குறள் 421

Wisdom's weapon wards off all woes

It is a fort defying foes.

As stated in the Scope of this curriculum the pass-outs of the X std. should be prepared to face the next phase of their life such as higher education leading to higher secondary or polytechnic or other similar vocational education and training to start contributing to the society by way of serving and earning. They should be capable of choosing the right path for pursuing the course suited to their personality and circumstances. Life skills and soft skills are very much needed in modern life and hence they need to undergo relevant programmes for developing these skills for which foundations have been laid in secondary education. Self-conception, communication, situational analysis, relevant social roles, anticipation of challenges and ability to face them successfully, assumption of family and social responsibilities, realization of constitutional rights and privileges, adoption of values, ethics and morals and positive thinking in self-development are the requirements at this stage. From 16 to 18 years of age plenty of opportunities are available around to choose the path according to one's desires and likes. Citizenship marks the beginning of a whole new life with considerations of personal, social, cultural, occupational and economic aspects in a multi-lingual, multi-religious society of ours.

RELATED DOCUMENTS

NATIONAL CURRICULUM FRAMEWORK 2005

National Knowledge Commission (2007) RECOMMENDATIONS ON SCHOOL EDUCATION

National Knowledge Commission (2007) Libraries: Gateways to Knowledge – A roadmap to revitalization.

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