CHAPTER – II

REVIEW OF
RELATED STUDIES
2.1 General Views on School Effectiveness

1) Collaboration between students and teachers.
2) Teachers’ characteristics.
3) Management of resources.
4) Students' motivation.
5) Parental involvement.
6) Six-year continuity.

The University of Chicago Press shows that the study described in this article by Charles Teddlie, Peggy C. Kirby & Sam Stringfield (1989) investigated differences at the classroom level in effective and ineffective schools. Teachers in more effective schools scored consistently higher on all identified dimensions of effective teaching. Field notes from observations in one matched pair of schools suggested possible school-level factors contributing to these classroom differences. The authors suggest that an astute, highly visible administrator and clear academic focus facilitate effective teaching, but they recognize that there may also be a reciprocal increase in school-effectiveness variables (such as quality of leadership and academic mission) resulting from the cultivation or appointment of effective teachers.

In 1990, Levine Daineu shows that a synthesis of research on unusually effective schools is presented in this monograph, with a focus on research conducted since 1985. Three major issues are addressed: (i) The viability of the effective school concept in contemporary school reform; (ii) The correlation between recent research and basic findings and (iii) the congruency of school level practices with Research on classroom and district practices and policies.
According to Miller S. K. (1984) the development of research concerning effective schools and provides a critical, synthesizing overview of various research strands. Strands of research included are self-concept, teacher expectations, democratic-authoritarian leadership, various uses of the term “school climate”, input-output production models (with particular emphasis on the 1966 Coleman Report), econometric studies, case studies, and status attainment literature. The paper stresses the converging lines of these various research perspectives and discusses methodological issues which were involved in the gradual change in the public's attitudes, from “schools do not make a difference” to “schools can make a difference”. The issue of educability is raised with respect to possibilities for large-scale educational improvement based on the effective schools research. Two opposing values, economic efficiency and equity-effectiveness, are related to beliefs about the distribution of ability. It is suggested that educational policy and school improvement are determined more by political and economic choices than by research on state of the art school effectiveness.

Although there is no consistent agreement in the literature on the determinants of Teaching Learning System, several aspects of a school’s physical and social set-up comprise its climate. One organization identified the following areas for making it effective:

- Appearance and physical set-up.
- Faculty relations.
- Student interactions.
- Leadership or decision making.

Another study by John Schweitzer of Michigan State University, found that when students in Detroit schools felt a sense of community with one another and a sense of belonging to their schools, they achieved higher scores.

A national study of more than 12,000 seventh to twelfth graders found that connectedness to family and school significantly protects youth from seven
of eight behaviours risky to their health.

In Indian context it has been observed that student teacher relationship and when students are engaging in some organizational activities they perform better.

Improving student behavior and academic performance generally requires changing school climate and school culture and it is specially important for making the Teaching Learning effective.

Different studies showed while making positive changes in school climate motivates staff and students to improve, the leadership of school is essentially very improvement.

In Indian context Teaching Learning system is specially based on humanistic approach and have a servicing attitude but globally that has been changed where it is guided by professional approach reflected from the following study:

1) Teachers and the school are accountable.
2) All children can and must learn.

In the general description of school effectiveness research as per Jaap Schreens it is important to note that school effectiveness is a causal concept. Some authors therefore make an explicit difference between school-effectiveness research on the one hand and school effects research on the other (cf. Purkey and Smith, 1983). In school-effectiveness research not only are differences in overall performance assessed, but the additional question of causality is raised: which school characteristics lead to relatively higher performance, when the characteristics of the student populations are otherwise constant?

Therefore as per Schreens observation it is important to clarify both qualitative and quantitative approach are to be considered for effectiveness of Teaching Learning System.

In context of West Bengal effective criteria does not mean either school-
effectiveness research or its impact or the economic foundation of Indian Education system rather it is achievement oriented and based on availability of external resources.

The present picture shows the infrastructure of a school building where number of teachers are 37 and number of students are 1600, therefore student and teacher ratio is almost 40 : 1.

2.2 Economic Definitions of Effectiveness (Scheerens)

In economics, effectiveness can be summed up as a 'turnover' or transformation of ‘inputs’ into ‘outputs’. The transformation process or throughput within a school can be understood as all the instruction methods, curriculum choices and organizational preconditions that make it possible for pupils to acquire knowledge.

Effectiveness can now be described as the extent to which the desired level of output is achieved. Efficiency may then be defined as the desired level of output against the lowest possible cost. In other words, efficiency is effectiveness with the additional requirement that this is achieved in the cheapest possible manner.

Cheng (1993) has offered a further elaboration of the definitions of effectiveness and efficiency, incorporating the dimension of short-term output versus long-term outcomes. In his terms: technical effectiveness and efficiency refer to “school outputs limited to those in school or just after schooling (e.g. learning behaviour, skills obtained, attitude change, etc.)”, whereas social effectiveness and efficiency are associated with “effects on the society level or the life-long effects on individuals (e.g. social mobility, earnings, work productivity)” (ibid, p. 2). If one combines these two dimensions, four types of school output can be distinguished.
**Distinction between School Effectiveness and School Efficiency [Cited from Cheng (1993)]**:

<table>
<thead>
<tr>
<th>Nature of School Input</th>
<th>Nature of School Output</th>
<th>Nature of School Output</th>
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<tbody>
<tr>
<td>Nature of school input</td>
<td>In school / Just after schooling short-term effects Internal (e.g. learning behaviour, skills obtained)</td>
<td>On the society level long-term effects External (e.g. social mobility, earnings, productivity)</td>
</tr>
<tr>
<td><strong>Non-monetary</strong> (e.g. teachers, teaching methods, books)</td>
<td>School’s societal effectiveness</td>
<td>School’s technical effectiveness</td>
</tr>
<tr>
<td><strong>Monetary</strong> (e.g. cost of books, salary, opportunity costs)</td>
<td>School’s technical efficiency (internal economic effectiveness)</td>
<td>School’s societal efficiency (external economic effectiveness)</td>
</tr>
</tbody>
</table>

It is vital for the economic analysis of efficiency and effectiveness to be able to express the value of inputs and outputs in terms of money. In order to determine efficiency, it is necessary to know the input costs such as teaching materials and teachers’ salaries. When the outputs can also be expressed in financial terms, efficiency determination resembles a cost-benefit analysis (Lockheed, 1988, p. 4). It has to be noted, however, that a strict implementation of the above-mentioned economic characterization of school effectiveness runs up against many problems.

In Indian context efficiency does not mean in terms of economy as it is mostly subsidised either by State Govt. or by Central Govt. and here effectiveness is generally mean imparting quality education and improvement of Teaching Learning System but yes it is true very slowly economic definition is coming to the Education system.
Components of Effective Teaching Learning System:

Teaching Learning System is reflected through organization’s atmosphere, myths, and moral code and can be deduced from multiple layers:

Values: The manner in which administrators, principals and staff function and interact.

Assumptions: The beliefs that are taken for granted about human nature.
Teaching Learning system is maintained by several practices as reflected from reviews pointed below:

- Common beliefs and values that key individuals communicate and enforce.
- Heroes and heroines whose actions and accomplishments embody these values.
- Rituals and ceremonies that reinforce these values.
- Stories that reflect what the organization stands for.

The following documents show how these components of school culture can support learning for academic betterment:

Teaching Learning System reflects the physical and psychological aspects of the school that are more susceptible to change and that provide the preconditions necessary for teaching and learning take place.

Teaching Learning System, the focus of the, is evident in the feelings and attitudes about a school expressed by students, teachers, staff and parents-the way students and staff “feel” about being at school each day.

Teaching Learning System is a significant element in discussions about improving academic performance and school reform. It is also mentioned in discussions of potential solutions to problems such as bullying, inter-student conflicts, suicide, character education, and moral education.
Most of the Govt. aided schools are running purely subsidised by the State Governments. Students enrolments are being encouraged by serving mid-day meals among the students reflected from the picture of a School in West Bengal. Students are taking mid-day meals.

2.3 Theoretical Views on Organizational Effectiveness

The Organic System Model involves:

1) flexibility,
2) adaptability and
3) school effectiveness may then be measured in terms of yearly intake.

Intake capacity has now been increasing in Govt. Schools at elementary level besides Private Schools.

Following points have detrimental effects on student performance furnished below (Abrams, Pedulla, & Madaus, 2003).

1) Motivation and responsibility of the individual student.
2) Socioeconomic status.
3) Students with high test results are rewarded externally.

1) For students who do not perform well, such as those with test anxiety, language barriers, or special education students who are required to take a grade equivalent test, this extrinsic reward system can be devastating.

2) Research shows that in many cases, classroom instruction is changing to better match the content found on high-stakes tests. Also, instruction focuses on test content or test-taking skills and ignores subject areas that are not on the test. High-stakes tests limit the scope of the classroom instruction and student learning in undesirable ways (Stecher & Barron, as cited in Abrams et al., 2003).
3) In a study by Cankoy and Tut (2005), one group of fourth grade students spent 70% of class time on test-taking skills, a second group spent 50% of class time on test-taking skills, and a third group only spent 30% of class time on test-taking skills. Test-taking skills included completing test questions from former tests, giving tests for drill, teaching procedures for answering multiple-choice questions, and memorizing rules. The study found that teaching students standard procedures to solve different types of math problems is not an effective approach to teach problem solving. Also, there was no difference in the three groups’ performances on non-routine math story problems, and spending more class time on test-taking skills did not affect the non-routine story problem solving. To conclude, this study feels that tests and classroom instruction should emphasize and foster problem-solving skills more so than test-taking skills.

**Students are Silent Spectators followed by Memorization:**

Niskanen (1971) demonstrated that public-sector organizations are primarily targeted at maximizing budgets and that there are insufficient external incentives for these organizations – schools included – to encourage effectiveness and efficiency. In this context it is interesting to examine whether canvassing activities of schools mainly consist of the displaying of acquired facilities (inputs) or of the presentation of output data such as the previous years’ examination results.

Finally, it should also be mentioned that although the organic system model is inclined towards inputs, this does not necessarily exclude a concern for satisfying outputs. This may be the case in situations where the environment makes the availability of inputs dependent on the quantity and / or quality of previous achievements (output).

In case of Indian context organic system model has been gradually coming to the market and growing privatization of the school system it can be
considered within ten years the structural set-up and markerization will be hike-up.

Demonstrations in classroom situation are very rare practices in schools mostly theoretical practices are in reality. Library but no students are found in study.

**ICT Lab and Students are engaging in Practical Activities:**

Numerous studies document that students in schools with a better school climate have higher achievement and better socio-emotional health. Probably the most comprehensive work in this area is being done by the Search Institute, a non-profit organization that encourages schools and communities to develop and empower young people.

In a review of studies on the impact of support in school, the Search Institute found that a caring school culture is associated with Academic Achievement, both in qualitative and quantitative way:

i) Higher grades.

ii) Engagement.

iii) Attendance.

iv) Expectations and aspirations.

v) Sense of scholastic competence.

vi) Fewer school suspensions.

vii) On-time progression through grades (19 studies).


ix) Less anxiety, depression and loneliness (3 studies).

x) Less substance abuse (4 studies).

Based on well-known distinctions in organizational science (e.g. Mintzberg, 1979; De Leeuw, 1982), the following categories can be used as a framework to further distinguish elements and aspects of school functioning:

- Goals;
• The structure of positions or sub-units (‘aufbau’);
• The structure of procedures (‘ablauf’);
• Culture;
• The organization’s environment;
• The organization’s primary process.

These antecedent conditions will be referred to as modes of schooling. Modes are considered as conditions that, in principle, may be manipulated by the school itself or by outside agencies that have control over the school. The overall effectiveness equation, consisting of antecedent conditions on the one hand and effects on the other hand.

Among these modes, goals have a specific role. In organizational-effectiveness thinking, goals can be seen as the major defining characteristic of the effectiveness concept itself. In the previous section it was established that different goals, or effectiveness criteria, can be used to assess effectiveness.

Finally, one of the tasks of the organization may be considered to be ensuring that goals or attainment targets are shared among the members of the organization. This is particularly relevant for organizations such as schools, in which teachers traditionally have a lot of autonomy. In control theory the phenomenon of unifying the goals of organizational sub-units (i.e. departments and individual teachers, in the case of schools) is known as ‘goal co-ordination’.

‘Pupil selection’ is a condition that would generally fall outside the definition of school effectiveness, since the specific interest in the value added by schooling, over and above the impact of the innate abilities of pupils, precludes the consideration of this option.

**Modes of Schooling**

**Goals**:

• Goals in terms of various effectiveness criteria.
• Priorities in goal specifications (cognitive – non-cognitive).
• Aspirations in terms of attainment level and distribution of attainment.
• Goal co-ordination.

**Aufbau (Position Structure):**
• Management structure.
• Support structure.
• Division of tasks and positions.
• Grouping of teachers and students.

**Ablauf (Structure of Procedures):**
• General management.
• Production management.
• Marketing management.
• Personnel management (among which hrm, hrd) planning, co-ordinating, controlling, assessing
• Financial and administrative management.
• Co-operation.

**Culture:**
• Indirect measures.
• Direct measures.

**Environment:**
• Routine exchange (influx of resources, delivery of products).
• Buffering.
• Active manipulation.

**Primary Process:**
• Curricular choices
• Curriculum alignment.
• Curriculum in terms of prestructuring instructional process.
• Pupil selection.
• Levels of individualization and differentiation.
• Instructional arrangement in terms of teaching strategies and classroom organization.

If effectiveness is recognized as being essentially a causal concept, in which means-to-end relationship are similar to cause-effect relationships, then one may consider that there are three major components in the study of organizational effectiveness:

• The range of effects.
• The avenues of action used to attain particular effects (indicated as modes of schooling).
• Functions and underlying mechanisms that explain why certain actions lead to effect-attainment.

**Basic Framework:**

• Goals.
• Organizational structure, both with respect to the structure of positions, and the structure of procedures (including management functions).
• Culture.
• Environment.
• Primary process / technology.

The results of the early effective-schools research converged more or less around five factors:

• Strong educational leadership.
• Emphasis on the acquiring of basic skills.
• An orderly and secure environment.
• High expectations of pupil attainment.
• Frequent assessment of pupil progress.
In the literature this is sometimes identified as the ‘five-factor model of school effectiveness’. In more recent contributions, effective-schools research has been integrated with education production function and instructional-effectiveness research, this meaning that a mixture of antecedent conditions has been included. Studies have evolved from comparative case studies to surveys, and conceptual and analytical multi-level modelling has been used to analyze and interpret the results. Numerous reviews on school effectiveness have been published since the late seventies. Examples are Purkey and Smith (1983) and Ralph and Fennessey (1983). More recent reviews are those by Levine and Lezotte (1990), Scheerens (1992), Creemers (1994), Reynolds et al. (1993), Sammons et al. (1995), and Cotton (1995).

2.4 Effectiveness-enhancing conditions of schooling in five review studies
(italics in the column of the Cotton study refer to sub-categories)

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<tbody>
<tr>
<td>Achievement-oriented policy</td>
<td>Productive climate and culture</td>
<td>Pressure to achieve</td>
<td>Planning and learning goals</td>
<td>Shared vision and goals</td>
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<tr>
<td>Co-operative atmosphere, orderly climate</td>
<td>Consensus, co-operative planning, orderly atmosphere</td>
<td>Curriculum planning and development</td>
<td>A learning environment, positive reinforcement</td>
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<tr>
<td>Clear goals on basic skills</td>
<td>Focus central learning skills</td>
<td>Planning goal learning goals school-wide emphasis on learning</td>
<td>Concentration on teaching and learning</td>
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<td>Frequent evaluation</td>
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<td>Evaluative potential of the school, monitoring of pupils' progress</td>
<td>Assessment (district, school, classroom level)</td>
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<td>In-service training / staff development</td>
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<td>Professional development collegial learning</td>
<td>A learning organization</td>
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<td>Strong leadership</td>
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<td>Educational leadership</td>
<td>School management and organization, leadership and school improvement, leadership and planning</td>
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<td>Salient parent involvement</td>
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<td>Parent support</td>
<td>Parent community involvement</td>
<td>Home-school partnership</td>
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<td>Time on task, reinforcement, streaming</td>
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<td>Effective instructional arrangements</td>
<td>Structured teaching, effective learning time, opportunity to learn</td>
<td>Classroom management and organization, instruction</td>
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<td>High expectations</td>
<td>High expectations</td>
<td>Teacher student interaction</td>
<td>High expectations</td>
<td>Pupil rights and responsibilities</td>
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<td>District-school interactions</td>
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<td>Equity</td>
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<td>Special programmes</td>
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<td>External stimuli to make schools effective</td>
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<td>Physical and material school characteristics</td>
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<td>Teacher experience</td>
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<td>School context characteristics</td>
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### 2.5 Components of 14 Effectiveness-enhancing Factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Components</th>
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<tbody>
<tr>
<td>Achievement, orientation high expectations</td>
<td>• clear focus on the mastering of basic subjects</td>
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<td>• high expectations (school level)</td>
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<td>• high expectations (teacher level)</td>
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<td>• records on pupils’ achievement</td>
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<tr>
<td>Factors</td>
<td>Components</td>
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</tbody>
</table>
| Educational leadership | • general leadership skills  
• school leader as information provider  
• orchestrator or participative decision-making  
• school leader as co-ordinator  
• meta-controller of classroom processes  
• time spent on educational and administrative leadership  
• counsellor and quality controller of classroom teachers  
• initiator and facilitator of staff professionalization |
| Consensus and cohesion among staff | • types and frequency of meetings and consultations  
• contents of cooperation  
• satisfaction about co-operation  
• importance attributed to co-operation  
• indicators of successful co-operation |
| Curriculum quality / opportunity to learn | • setting curricular priorities  
• choice of methods and textbooks  
• application of methods and textbooks  
• opportunity to learn  
• satisfaction with the curriculum |
| School climate | (a) Orderly atmosphere  
• the importance given to an orderly climate  
• rules and regulations  
• punishment and reward  
• absenteeism and drop-out  
• good conduct and behaviour of pupils  
• satisfaction with orderly school climate |
<table>
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<tr>
<th>Factors</th>
<th>Components</th>
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<tbody>
<tr>
<td>(b) Climate</td>
<td>(b) Climate in terms of effectiveness orientation and good internal relationships</td>
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<td></td>
<td>• priorities in an effectiveness-enhancing school climate</td>
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<td>• perceptions on effectiveness-enhancing conditions</td>
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<td>• relationships between pupils</td>
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<td>• relationships between teacher and pupils</td>
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<td>• relationships between staff</td>
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<td>• relationships : the role of the head teacher</td>
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<td>• pupils’ engagement.</td>
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<td>• appraisal of roles and tasks</td>
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<td>• job appraisal in terms of facilities, conditions of labour, task load and general satisfaction</td>
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<td></td>
<td>• facilities and building</td>
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<tr>
<td>Evaluative</td>
<td>• evaluation emphasis</td>
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<tr>
<td>potential</td>
<td>• monitoring pupils’ progress.</td>
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<td>• use of pupil monitoring systems.</td>
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<td>• school process evaluation.</td>
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<td>• use of evaluation results</td>
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<td></td>
<td>• keeping records on pupils’ performance</td>
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<td></td>
<td>• satisfaction with evaluation activities</td>
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<tr>
<td>Parental</td>
<td>• emphasis on parental involvement in school policy</td>
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<tr>
<td>involvement</td>
<td>• contact with parents</td>
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<td></td>
<td>• satisfaction with parental involvement</td>
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<tr>
<td>Classroom</td>
<td>• relationships within the classroom</td>
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<tr>
<td>climate</td>
<td>• order</td>
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<td></td>
<td>• work attitude</td>
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<td>• satisfaction</td>
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</table>
### Factors | Components
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Effective learning time | • importance of effective learning  
 | • time  
 | • monitoring of absenteeism  
 | • time at school  
 | • time at classroom level  
 | • classroom management  
 | • homework

**Ref:** Improving School Effectiveness Jaap Scheerens (2000).

**Students are Participating in Exhibition in an Orderly Set-up:**

This research has been identified in the literature as ‘process-product studies’. Variables which emerged ‘strongly’ in the various studies were the following (Weeda, 1986, p. 68):

- **clarity**: clear presentation adapted to suit the cognitive level of pupils;
- **flexibility**: varying teaching behaviour and teaching aids, organizing different activities etc.;
- **enthusiasm**: expressed in verbal and non-verbal behaviour of the teacher;
- **task related and / or business like behaviour**: directing the pupils to complete tasks, duties, exercises etc. in a business like manner;
- **criticism**: much negative criticism has a negative effect on pupil achievement;
- **indirect activity**: taking up ideas, accepting pupils’ feelings and stimulating individual activity;
- **providing the pupils with an opportunity to learn criterion material** – that is to say, a clear correspondence between what is taught in class and what is tested in examinations and assessments;
- **making use of stimulating comments**: directing the thinking of pupils to the question, summarizing a discussion, indicating the beginning or end of a
lesson, emphasizing certain features of the course material.

- varying the level of both cognitive questions and cognitive interaction.

In later studies effective teaching time became a central factor. The theoretical starting points of this can be traced back to Carroll’s teaching-learning model (Carroll, 1963). Chief aspects of this model are:

- actual net learning time which is seen as a result of perseverance and opportunity to learn;
- necessary net learning time as a result of pupil aptitude, quality of education and pupil ability to understand instruction.

Doyle (1985) looked at the effectiveness of direct teaching, which he defined as follows:

- teaching goals are clearly formulated;
- the course material to be followed is carefully split into learning tasks and placed in sequence;
- the teacher explains clearly what the pupils must learn;
- the teacher regularly asks questions to gauge what progress pupils are making and whether they have understood;
- pupils have ample time to practise what has been taught, with much use being made of ‘prompts’ and feedback;
- skills are taught until mastery of them is automatic;
- the teacher regularly tests the pupils and calls on them to be accountable for their work.

The question of whether this type of highly structured teaching works equally well for acquiring complicated cognitive processes in secondary education as for mastering basic skills at the primary-school level has been answered in the affirmative (according to Brophy & Good, 1986). Yet, in such settings, progress through the subject matter can be taken with larger steps, testing need not be so frequent and there should be space left for applying
problem-solving strategies flexibly. Doyle (ibid) emphasized the importance of varying the learning tasks and of creating intellectually challenging learning situations. These can be produced through an evaluative climate in the classroom, where risk-taking is encouraged, even with complicated tasks.

In the domain of classroom organization, Bangert, Kulik and Kulik’s meta-analysis (1983) revealed that individualized teaching in secondary education hardly led to higher achievement and had no influence whatsoever on factors such as self-esteem and attitudes of pupils. ‘Best-evidence-syntheses’ by Slavin (1996) indicated a significantly positive effect of co-operative learning at the primary-school level.

Meta-analyses by Walberg (1984) and Fraser et al. (1987) found the most significant effects for the following teaching conditions:

- Reinforcement.
- Special programmes for gifted children.
- Structured learning of reading.
- Cues and feedback.
- Mastery learning of physics.
- Working together in small group.


Main Recommendations:

The following are some of the recommendations made by the panel:

1. The Education Department of each State should frame proposals for the new academic year well in advance of the start of the academic session furnishing full details. This will help schools to complete formalities and procure science equipment in time for the new session.
2. When science teaching is introduced in a high school, a minimum amount of Rs. 10,000 may be earmarked for setting up a reasonably well-equipped laboratory for Physics and Chemistry. In case Biology is also introduced an additional amount of Rs. 300 should be provided.

3. For Middle schools, a sum of Rs. 4,000 for science equipment is considered essential.

4. Each middle and high school should have a workshop attached to it for which a grant of Rs. 1,000 should be sanctioned separately.

5. Adequate facilities should be provided to science teachers and students for working on hobbies during school hours and in spare time. Refresher courses and workshops should be arranged for teachers periodically.

6. The creation of a separate branch of Science Education in each State Department of Education under a Special Officer would strengthen the steps being taken at various levels for improvement of science teaching. The report has six appendices dealing with various aspects of science equipment and apparatus required for High Schools and Middle Schools.

After post independence (1947) to impart science education was rather difficult in India. Because before independence science education was limited in a particular section. But after independence separate educational strategy had been taken where mass education was an emergent need. Therefore a balance had to maintain between the need and demand on science education on that time. In 1964 the report was basically on the above reason specially framed on the basis of socio-economic condition. Science education was encouraged on the secondary schools in India in the above report.

**Education Commission, 1964-66 Report (Education and National Development : Delhi, Manager of Publications, 1966) :**

**Main Recommendations :**

The Report makes recommendations about various sectors and aspects of
education, some of which are as follows:

1. Work-experience and social service should be introduced as integral parts of general education at more or less all levels of education.
2. Secondary education should be vocationalised.
3. Mother-tongue has a pre-eminent claim as medium of instruction at school and college stages. Moreover, the medium of education in school and higher education should generally be the same. The regional language should, therefore, be adopted as the media of education in higher education.
4. The teaching and study of English should continue to be promoted right from the school stage. English will serve as a link language in higher education for academic work and intellectual inter-communication.
5. The Central and State Governments should adopt measures to introduce education in moral, social and spiritual values in all institutions under their control.
6. Secondary schools should be of two types – high schools providing a course of 11–12 years.
7. Education, as distinguished from pedagogy, should be recognised as an independent academic discipline.
8. Duration of training courses should be two years for primary teachers who have completed the secondary school course. It should be one year for the graduate students.
9. Science and mathematics should be taught on a compulsory basis to all pupils as a part of general education during the first ten years of schooling.
10. No single stage of education need be designated as basic education, but its essential principles should be retained to guide and shape the educational system at all levels.
11. External examinations should be improved by orienting question papers to objectives rather than to acquisition of knowledge, by improving the nature
of questions, adopting scientific scoring of scripts.

12. Internal assessment should be comprehensive and evaluate all aspects of student growth.

13. Some centres of advanced study and a small number of major universities should be set up with the view to achieving highest international standards.

14. Education for agriculture, and research in agriculture and allied sciences should be given a high priority in the scheme of educational reconstruction.

15. The Ministry of Education, in collaboration with the Asian Institute of Educational Planning, should under. According to Indian Parliamentary & Scientific committee 1961 science education should be imparted on the basis of practical orientation and Vocation based. Science education in Secondary level would be on the general basis.

**National Knowledge Commission and Higher Education:**

Meaningful reform of the higher education system, with a long-term perspective is both complex and difficult. First, it is essential to reform existing public universities and undergraduate colleges. Second, it is necessary to overhaul the entire regulatory structure governing higher education. Third, every possible source of financing investment in higher education needs to be explored. Fourth, it is important to think about pro-active strategies for enhancement of quality in higher education. Fifth, the time has come to create new institutions in the form of National Universities that would become role models as centres of academic excellence. Sixth, the higher education system must be so designed that it provides access to marginalized and excluded groups. Even so, we believe that reforms in the following spheres, along the lines suggested by us, are not only possible but would also make a difference.

**Number and Size:** India has about 350 universities. This number is simply not enough with reference to our needs in higher education, or in comparison with
China which has authorized the creation of 1250 new universities in the last three years. Yet, some of our universities are much too large, for ensuring academic standards and providing good governance. We need to create more appropriately scaled and more nimble universities. The moral of the story is not only that we need a much larger number of universities, say 1500 nationwide by 2015, but also that we need smaller universities which are responsive to change and easier to manage.

**Curriculum** : The syllabi of courses in universities, which remain unchanged for decades, need to be upgraded constantly and revised frequently. The laws of inertia reinforced by resistance to change must be overcome. Universities should be required to revise or restructure curricula at least once in three years. These revisions must be subjected to outside peer review before implementation. The process for such revisions should be streamlined and decentralized, with more autonomy for teachers, through a change in statutes wherever necessary. For existing systems often act as major impediments to a timely or speedy revision of curricula. There should be some mode of censure for departments or universities that do not upgrade their courses regularly. It needs to be recognised that it is very difficult to introduce new courses or innovative courses in universities because of departmental divides. Appropriate institutional mechanisms should be put in place to resolve this problem.

**Assessment** : The nature of annual examinations at universities in India often stifles the teaching-learning process because they reward selective and uncritical learning. There is an acute need to reform this examination system so that it tests understanding rather than memory. Analytical abilities and creative thinking should be at a premium. Learning by rote should be at a discount. Such reform would become more feasible with decentralized examination and smaller universities. But assessment cannot and should not be based on examinations
alone. There is a clear need for continuous internal assessment which empowers teachers and students alike, just as it breathes life back into the teaching learning process. Such internal assessment would also foster the analytical and creative abilities of students which are often a casualty in university-administered annual examinations. To begin with, internal assessment could have a weight of 25 percent in the total but this should be raised to 50 percent over time.

**Course Credits**: The present system is characterised by too many rigidities and too few choices for students. Universities that are smaller, or run semester-based systems, are obviously more flexible. Even in large universities, however, it is necessary to introduce greater diversity and more flexibility in course structures. This would be the beginning of a transition to a course credit system, where degrees are granted on the basis of completing a requisite number of credits from different courses. Every student should be required to earn a minimum number of credits in his/her chosen discipline but should have the freedom to earn the rest from courses in other disciplines. It is essential to provide students with choices instead of keeping them captive.

**Research**: We attempted to create stand-alone research institutions, pampered with resources, in the belief that research should be moved out of universities. In the process, we forgot an essential principle. There are synergies between teaching and research that enrich each other. And it is universities which are the natural home for research. What is more, for universities, research is essential in the pursuit of academic excellence. It is time to reverse what happened in the past and make universities the hub of research once again. This would need changes in resource-allocation, reward-systems and mindsets. Substantial grants should be allocated for research. The provisions of these grants should be competitive and the criteria for these grants should be different from the usual criteria for non-plan and plan grants.
**Faculty**: There must be a conscious effort to attract and retain talented faculty members. This is necessary because talented students who are potential faculty members have choices that are far more attractive in other professions in India or in the academic profession outside India. It is necessary to provide working conditions in the form of office space and research support combined with housing. But it may not be sufficient. This must be combined with some incentives and rewards for performance. There is, however, another dimension to the problem. Universities do not always choose the best in part because of native-son/daughter policies which leave them to select their own former students. This tends to lower quality and foster parochialisation in universities. Therefore, cross-pollination between universities should be encouraged. It may be worth introducing a ceiling, say one-half or even one-third, on the proportion of faculty members than can be hired from within the university. This would almost certainly engender greater competition and more transparency in faculty appointments.

**Finances**: There is a serious resource crunch in universities which leaves them with little financial flexibility. In general, about 75 per cent of maintenance expenditure is on salaries and pensions. Of the remaining 25 per cent, at least 15 per cent is absorbed by pre-emptive claims such as rents, electricity, telephones and examinations. The balance, less than 10 per cent, is not even enough for maintenance let alone development. Laboratories and libraries languish while buildings crumble. But that is not all. In most universities, plan (investment) expenditure is less than 5 per cent of non-plan (maintenance) expenditure. Such a small proportion of investment in total expenditure can only mortgage the future. It is doing so. The time has come for some strategic thinking on the reallocation of budgets for universities with some allocation for development grants and on needs other than salaries. The criteria for resource allocation should seek to strike a much better balance between providing for salaries/
pensions and providing for maintenance/ development/ investment. These criteria should recognise the importance of a critical minimum to ensure standards and strategic preferences to promote excellence.

**Infrastructure**: The elements of infrastructure that support the teaching-learning process, most directly, need to be monitored and upgraded on a regular basis. This means attention particular attention to libraries and laboratories, in addition to classrooms, sports facilities and auditoriums. It is imperative that universities provide broadband and connectivity to all students and teachers in campuses. In parallel, information technology systems should be used for admissions, administration and examinations along with other relevant web services for campus communities. And, as soon as possible, a digital infrastructure for networking universities should be put in place.

**Governance**: There is an acute need for reform in the structures of governance of universities. The present system is flawed. On the one hand, it does not preserve autonomy. On the other, it does not promote accountability. The autonomy of universities is eroded by interventions from governments and intrusions from political processes. This must be stopped. At the same time, there is not enough transparency and accountability in universities. This must be fostered. It is exceedingly difficult to provide generalized prescriptions. Some steps, which would constitute an important beginning, are clear. First, the appointments of Vice-Chancellors should be based on search processes and peer judgment alone. These must be freed from direct or indirect intervention on the part of governments. Once appointed, Vice Chancellors should have a tenure of six years, because the existing tenure of three years in most universities and five years in central universities is not long enough. Second, the size and composition of University Courts, Academic Councils, and Executive Councils slows down decision-making processes and sometimes constitutes an
impediment to change. University Courts, with a size of 500 plus, which are more a ritual than substance, could be dispensed with. Large Academic Councils do not meet often. Even when they meet, decisions are slow to come. Thus, Standing Committees of Academic Councils, which are representative, should be created for frequent meetings and expeditious decisions. The Vice-Chancellor should, then, function as a Chief Executive Officer who has the authority and the flexibility to govern with the advice and consent of the Executive Council which would provide checks and balances to create accountability. Third, experience suggests that implicit politicisation has made governance of universities exceedingly difficult and much more susceptible to entirely non-academic interventions from outside. This problem needs to be recognised and addressed in a systematic manner not only within universities but also outside, particularly in governments, legislatures and political parties.

**Undergraduate Colleges:**

Undergraduate education, which accounts for about 85 percent of the enrolled students, is the largest component of our higher education system. It is imparted through colleges where students enroll for first degrees in Arts, Science or Commerce. There are a total of about 17,700 undergraduate colleges. Of these, a mere 200 colleges are autonomous. The rest, as many as 17,500 colleges, are affiliated to, or constituent in, 131 universities. On average, each university has more than 100 affiliated colleges, but there are some universities each of which has more than 400 affiliated colleges. This system of affiliated colleges for undergraduate education, which may have been appropriate fifty years ago, is neither adequate nor appropriate at this juncture, let alone for the future. It is cumbersome to manage. And it is difficult to ensure minimal academic standards across the board. The problem has at least three dimensions. First, it imposes an onerous burden on universities which have to regulate admissions, set curricula and conduct examinations for such a large number of
undergraduate colleges. The problem is compounded by uneven standards and geographical dispersion. Second, the undergraduate colleges are constrained by their affiliated status, in terms of autonomy and space, which makes it difficult for them to adapt, to innovate and to evolve. The problem is particularly acute for undergraduate colleges that are good, for both teachers and students are subjected to the ‘convoy problem’ insofar as they are forced to move at the speed of the slowest. There is also a problem for undergraduate colleges that are not so good, or are poor, because universities cannot address their special needs or unique problems. Third, it is difficult to set curricula and assess performance for such a large number of students where there is such a large dispersion in performance at school before entering college. This reality tends to make courses less demanding and examinations less stringent across the board. In fact the design of courses and examinations needs to be flexible rather than exactly the same for large student communities. There is an urgent need to restructure the system of undergraduate colleges affiliated to universities. In doing so, it is important to make a distinction between undergraduate colleges that already exist and undergraduate colleges that will be established in the future. It is also important to remember that undergraduate colleges are afflicted by problems which are very similar to those that afflict universities. The most obvious solution is to provide autonomy to colleges, either as individual colleges or as clusters of colleges.

**Recommendations on School Education Dated 3rd February 2008:**

As you have repeatedly emphasized, ensuring quality school education to all is the foundation upon which any further advances towards a knowledge society must be based. Noting the crucial importance of school education, the National Knowledge Commission (NKC) held a series of workshops and consultations around the country involving a very wide range of stakeholders, to discuss issues of quantity, quality and access in school education. NKC
recognizes that the primary responsibility for school education is borne by the state governments, and therefore any policy changes must be with the full participation and involvement of the States. Nevertheless, NKC believes that positive changes in systems of schooling will require the active involvement of the central government as well state governments, not only in the matter of providing resources but also in promoting organizational and other changes. We have a number of suggestions and recommendations covering the different aspects of school education, but the essential thrust can be summarized as follows by Sam Pitroda, Chairman, National Knowledge Commission.

1. **Central Legislation for the Right to Education, backed by Financial Commitment**

   NKC endorses the speedy enactment of a central legislation that will ensure the right of all children in the country to good quality school education up to Class VIII, supported with financial commitments of the central and state governments. This obviously requires substantially increased public spending for both elementary and secondary school education, which must be seen as a priority area for spending. Currently school education is highly segmented, even in government run institutions, as a result of the parallel track of “education centres” in some states. These separate systems must be integrated to give all children access to schools of acceptable quality, which will obviously require additional spending.

2. **More Flexibility in Disbursal of Funds**

   However, there is a strong case for changes in the manner in which such expenditure is incurred. The current norms for central government disbursal to states of funds for, including for Sarva Shiksha.
School Education:

National Knowledge Commission Abhiyan (SSA), the planned SUCCESS program for secondary education and other central schemes, are too rigid and must be made more flexible. NKC strongly recommends a system of funds transfer and accounting that will allow for regional and other differences as well as changing requirements over time, and thereby allow state governments to use the resources in the most effective way. There should also be greater flexibility in disbursing funds down to the school level and a greater degree of autonomy of local level management in the use of funds. The norms and rules should allow schools to adapt to local conditions and meet particular requirements of their students.

3. Decentralization and Greater Local Autonomy:

Community participation is an important instrument to ensure accountability and improve the day-to-day functioning of schools. This in turn means that the management of schools, including the use and management of funds, should be decentralized to local authorities as far as possible, whether they be panchayats, Village Education Committees or municipalities, and to School Boards that have representation of all stakeholders including parents.

4. Expansion of Functional Literacy:

NKC would like to stress the continuing importance of a focus on expanding functional literacy among the population. Illiteracy remains a major problem, even among the age-group 15-35 years, and therefore literacy programmes must be expanded rather than reduced, and given a different focus that is directed towards improving life skills and meeting felt needs, especially (but not only) among the youth.

5. Planning for School Infrastructure:

It is important to remember that land is an essential requirement of
schools, and this requirement is likely to increase in the near future given the expansion implied by demographic changes and need to ensure universal schooling. Therefore urban master plans and local development plans must explicitly incorporate the physical requirements for schooling, including provisions for play grounds and other school facilities.

6. Enabling and Regulating Mechanisms for Private Schools:

Since private schools play an important role in the provision of education, there is need for both enabling and regulating mechanisms to be developed and strengthened for them. There should be transparent, norm-based and straightforward procedures for the recognition of private schools, to reduce harassment and bureaucratic delay. There should also be transparent criteria as for the disbursement of aid from the government to some self-financing schools, especially those which cater to underprivileged children, and clear norms with respect to the ability of school managements to raise resources from other sources. The monitoring of private schools, in terms of ensuring a transparent admissions process, regulation of fee structures, as well as meeting minimum set standards for quality of teaching and infrastructure, also requires attention. The possibility of greater exchange between schools, including mentoring of one school by another, should be allowed and encouraged.

7. Database on School Education:

Educational planning and monitoring are made much more difficult because of the lack of comprehensive and accurate data on schools, school-age children and actual attendance of both students and teachers. The collection and speedy dissemination of accurate and current data on schooling must be made a priority. It is necessary to create a complete database on schools and school-age children so as to track the actual coverage and quality of schooling at different levels, and to make it widely available in a timely manner. Such data collection
may be made an essential part of the fund allocation for school education, with appropriate institutional mechanisms.

8. More Co-ordination between Departments:

The multiplicity of management structures and government departments that currently governs schooling creates confusion, unnecessary replication and possibly inconsistent strategies across different schools. There must be greater co-ordination between different departments of government on school education policy, even while ensuring more autonomy to the local management of schools.

9. National Evaluation Body for Monitoring Quality:

Educational administration also needs to be more conscious of actual learning outcomes at different levels, which will determine both policy and functioning. NKC therefore proposes a national evaluation body to monitor the quality of both government and private schools, using a results based monitoring framework based on a short list of monitorable criteria that include both process and outcome indicators.

10. Revamping School Inspection:

The system of school inspection needs to be revamped and revitalized, with a greater role for local stakeholders and greater transparency in the system. The solution does not lie in simply expanding the system – rather, we need to develop systems to ensure meaningful monitoring, including provision of greater facilities to school inspectors, a separation of inspection of qualitative and administrative aspects, transparency in the criteria of inspection, and greater involvement of local stakeholders.

11. Teachers and Teacher Training:

Teachers are the single most important element of the school system, and the country is already facing a severe shortage of qualified and motivated school
teachers at different levels. It is urgent to restore the dignity of school teaching as a profession and provide more incentives for qualified and committed teachers. Non-teaching official duties such as electoral activities should not be allowed to interfere with the teaching process. Forums that allow and encourage teachers to exchange ideas, information and experiences, including a web-based portal, should be developed. At the same time, there should be transparent systems for ensuring accountability of school teachers. As far as possible, teachers should be recruited to particular schools. The training of teachers is a major area of concern at present, since both pre-service and in-service training of school teachers is extremely inadequate and also poorly managed in most states. Pre-service training needs to be improved and differently regulated in both public and private institutions, while systems for in-service training require expansion and major reform that allows for greater flexibility system, especially at Board level but also earlier.

12. Reforms in the Curriculum and Examination System:

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.

13. Use of Information and Communication Technology:

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.
14. English Language Teaching:

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 in class I and teaching of one other subject in English medium in later classes requires making pedagogical changes to contextualize language learning, increasing the availability of English language teachers and providing more bilingual and supplementary teaching materials. At the same time, multilingualism must be promoted and language issues must be explicitly taken on board in designing school curricula and methods of pedagogy.

15. Interventions to ensure Access of Educationally Deprived Categories:

Special interventions are necessary to ensure greater access to education of educationally deprived categories, and some proposals for this are developed in more detail in the accompanying note.

Quantity and Resources

1. Substantially increased public spending is required for both elementary and secondary education:

As we have already stated in two previous letters, we strongly endorse the speedy enactment of a central legislation that will ensure the right of all children in the country to good quality school education up to Class VIII. We also believe that this should be extended to cover universal schooling up to Class X as soon as possible.

2. Urban planning and local planning must explicitly incorporate the physical requirements for schooling, including provisions for play grounds and other school facilities

It is important to remember that land is an essential requirement of schools,
and this requirement is likely to increase in the near future given the expansion required by demographic changes and the need to ensure universal schooling. In the context of rapid urbanization, it has been found that urban conglomerations often come up without adequate provision for ensuring the physical space required for schools in the vicinity.

3. The norms for central government disbursal to states of Sarva Shiksha Abhiyan (SSA) funds and other central schemes for school education are too rigid and must be made more flexible

- very rigid norms on unit costs and what is allowed in terms of spending, that do not recognize the diverse requirements of different states or particular regions;
- inadequate financial provisions for infrastructure such as buildings etc, especially for some states and cities, which leads to the creation of poor quality infrastructure;
- an inflexible accounting system that does not allow transferring funds across heads to meet particular or changing requirements, and therefore inhibits full utilization and also prevents synergies from developing;
- insufficient allocation for repair and maintenance of infrastructure;
- treating rural and urban schools in the same manner even though the requirements are often very different (for example, urban government schools may require different infrastructure and facilities in order to attract students);
- treating all districts and geographical areas in the same manner regardless of the degree of backwardness, topographical conditions, etc. (This is especially a problem for schools in hilly or heavily forested areas or those with poor physical connectivity, for which per capita allocations are the same as for other more accessible areas);
- problems in the timing of fund transfer, as well as uncertainties in fund
provision created by the insistence on matching funds and the fact that plan ceilings keep changing every year.

**Quality and Management**

Currently school education is highly segmented, even in government-run institutions, as a result of the parallel track of “education centres” in some states. These separate systems must be integrated to give all children access to schools of acceptable quality.

**2.6 School management must be decentralized as far as possible**

Decentralization of the management of schools, combined with community participation, is the most effective instrument for ensuring accountability, improving the day-to-day functioning of schools and allowing for flexible responses to local requirements. Therefore, there should be devolution of authority to local levels, whether to panchayats, village education committees or municipalities. School management committees that include representatives of all stakeholders, including parents and teachers, should be empowered to make many decisions. Social audits of schools should be supported and encouraged.

There is need for a national body to monitor the quality of both government and private schools, to ensure that minimum standards are met in terms of learning outcomes.

Currently there is no systematic and continuous feedback on the actual impact and outcome of various educational schemes and initiatives, or the actual quality of education imparted in schools. There is a strong case for a testing body at the national level for quality assessment of schools. A results-based monitoring framework with due process indicators and outcome indicators needs to be evolved. This should be based on a short list of monitorable criteria. These should include fixed infrastructural requirements, enrolment and
attendance, as well as outcome indicators such as learning levels achieved in certain basic areas such as language skills and numeracy, etc. Such a process of assessment needs to be applied to all schools – both public and private. However, the testing of students must not involve topics or questions that provide any incentives for rote learning.

The system of school inspection needs to be revamped and revitalized in most states, with a greater role for local stakeholders.

- Local stakeholders should be involved in the monitoring of schools, whether in the form of Village Education Committees, parent associations, or other such bodies.
- The number of inspectors needs to be increased in many states, and they must be provided the facilities to undertake their activities properly, such as transport, communications devices, etc.
- The inspectors themselves must be accountable to the stakeholders of the area, through appropriate checks and balances.
- The criteria for inspection, the dates on which inspection of particular schools has taken place and the results should be made publicly available, including by posting on websites.
- The monitoring and inspection of schools must be separated from school administration, as the two functions require completely different orientations.
- The criteria for inspection should include not only infrastructure, facilities and teacher presence but also minimum standards for quality.

The dignity of school teaching as a profession must be restored, and at the same time there should be transparent systems for ensuring accountability of school teachers.

The training of school teachers is extremely inadequate and also poorly managed. Pre-service training needs to be improved and regulated, while
systems for in-service training require expansion and major reform in all states.

Both pre-service and in-service teacher training programs face major problems at present, at the national level and in almost all states. With respect to pre-service training, there is a proliferation of private colleges awarding the B. Ed. degree, and these are inadequately monitored or regulated. A significant proportion of those who receive B.Ed. degrees do so through correspondence or distance learning courses, which involve absolutely no practical exposure. In any case, classroom experience is underplayed in standard B. Ed. courses. At the same time, the employment of ad hoc teachers and those without even high school diplomas as teachers in the parallel stream perpetuates the notion that it is not necessary for school teachers to have systematic and prolonged pre-service training. In-service training shows problems of inadequate quantity, uneven quality, outdated syllabi, and poor management.

It is important to develop and nurture leadership for managing schools. Even talented individuals who could be suitable for the tasks of school management need to be trained for this purpose. Such capacity building would create a pool of potential principals or heads. There are several ways in which this can be done. State governments could assign such training to existing institutions such as SCERTs or SIEs, leveraging the expertise available in Navodaya Vidyalayas, Kendriya Vidyalayas, other government schools and private schools. Such training programmes, as well as retraining programmes for existing principals, could also seek the expertise of specialists in management education. Also, individual mentoring programmes for school leaders could be evolved.

The possibility of greater exchange between schools, including mentoring of one school by another should be allowed and encouraged. The current system creates many distinctions and prevents interaction between schools. There is need to constitute mechanisms of exchange and interaction between students and teachers of different schools. In addition, schools that wish to do so should
be allowed to exercise the option of being ‘mentored’ by another school to improve facilities and teaching methods.

Curriculum reform remains an 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, good comprehension and communication skills and learning how to access knowledge independently

Successive Commissions and Committees set up by the government have emphasized the need to make the curriculum more interesting, relevant, creative and useful for students. The National Curriculum Framework 2005 also clearly articulated such an approach. Nevertheless it appears that in a majority of schools across the country, a significant emphasis on rote-learning and memorizing facts remains the norm. Also, there is evidence of children being overburdened with too much detail and an excess of scholastic requirements at the elementary level.

It is important to orient students towards independent and continuous learning. This makes it essential to make greater efforts to change the attitude to learning and knowledge. It has been noted in several states that learning results have improved considerably upon providing inputs for communication and comprehension in language and basic mathematical skills using activity-based and imaginative pedagogical strategies.

Changes in the examination system are required, especially at Board level but also earlier, to ensure that the pressure for rote-learning is reduced. The current over-emphasis on details, memorizing of facts and similar abilities rather than on understanding and accessing knowledge independently is reflected in the pattern of examinations. Board examinations in which marks are awarded based on the ability to recall lots of details or on rapidity of response or on the ability to do large numbers of sums in a limited period through practice in pattern recognition, are not sufficiently discriminatory and may end up
providing misleading results. They also put pressure on schools to ensure that memory and pattern recognition skills are developed at the expense of genuine understanding.

New technologies, especially but not only ICT, should be used as much as possible to reduce costs, enable more effective use of resources, and provide wider exposure to students and teachers.

The use of ICT as a teaching and learning device needs to be more firmly incorporated into the classroom. Both teachers and students need to be far more familiar with ICT, and get practical experience of web based research. Therefore 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.

There is need for a web-based portal for teachers to exchange ideas, information and experiences. A forum for teachers needs to be developed where they may interact, share experiences and ideas. This needs to be incorporated into teacher training programmes, and also provided generally for in-service teachers. A web-based teachers’ portal can play an important role as such a networking forum.

Access:

- Financial norms for schools in such locations must be different from those in more accessible areas, as they will require additional resource allocation based on particular conditions.
- Special incentives, including a financial incentive (such as a “hardship bonus”) need to be provided for teachers to take up jobs in such areas. Two different models may be considered – one based on recruiting local teachers
on a permanent basis for a job in a particular school without transfer; and another based on a transfer policy that divides locations into hard/middle/easy categories and allows teachers to rotate among them at specified intervals. Ideally, there should be at least one local teacher and one non-local teacher to ensure some variation, local acceptability and quality.

- Residential arrangements must be made for teachers in such locations, by providing quarters next to or near the school. The cost of building such quarters should be factored into the costs of the school building.
- There are some geographical zones especially in mountainous regions, that are plagued by unique problems due to vast tracts of land, difficult topography, and a sparse and nomadic population. In such areas, well equipped residential schools should be set up instead of insisting on a school in every habitation. These schools must be equipped to look into the needs of very young children living away from their families.

The teaching of English should be introduced along with the first language, starting from Class I in school. 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 introduction of English as a language in Class I and the teaching of one other subject in English medium in later classes, requires pedagogical changes to contextualize language learning, increasing the availability of English language teachers and those who can teach at least one subject in English, as well as bilingual and supplementary teaching materials. At the same time, school education must commit to promoting multilinguality, given the multilingual nature of our country.
Indian Parliamentary and Scientific Committee, 1961 Report (Delhi, Publications Division, 1964) :

Main Recommendations :

1. Science education in the primary schools should be introduced in the form of nature study. Not less than 25% of the lessons in the different languages readers could be devoted to science subjects in the form of stories, explaining the phenomena in nature as well as the lives of great scientists who have contributed to the making of the modern world. Such lessons should not, however, lack in literary presentation and grace to stimulate creative talent of the pupil. Use of visual aids, visits to botanical and zoological gardens and other methods of instructions have to be employed as far as feasible. Besides, in the reorganisation of syllabus for primary schools some science teaching has to be introduced in an elementary form.

2. General Science courses could be started in the middle schools, i.e. classes VI, VII and VIII.

3. At the High School stage science should be compulsory for all students, but it has to take the form of separate subjects as mathematics, physics, chemistry, biological sciences, etc. along with the other humanistic subjects. Certain guidance in this connection could be offered by the way in which courses have been prescribed in the U.S.S.R. While formulating the courses it should be seen that there is a balance between the courses in science and courses in humanistic subjects and the one does not outweigh the other. This should remove defects of early specialisation. Everyone who leaves the this School should be equipped with elements of science as well as of humanistic culture. Whether he goes into employment or further courses in higher education or junior colleges instruction or in courses of vocational education in the trade schools, polytechnics or various other branches of vocational training which will expand as our economy progresses.
4. A decision will have to be taken regarding the nature of the higher secondary stage. If the trend is to follow the recommendations of the Sampurnanand Committee, it will be possible to have new institution of junior colleges or intermediate colleges attached to the colleges or high schools or independent with a 2-year curriculum consisting of the 11th and 12th classes. In that case, specialisation in science could be started at this stage for those students who would go in for professional courses of medicine, agriculture, engineering or degree courses like B. Sc. and M. Sc. in science itself. The courses will have to be, perhaps, of the same nature as adopted for the VI form in U. K. where boys spend at least 2 years, but very often 3 years in doing courses at advances level for admission to the universities and other institutions of higher training.

5. Specialisation at an early stage of school education should be avoided and courses of instruction should be so framed as to enable those who come out of the high school at the age of 16 plus or 17 after completing 10 years of schooling either to pursue an occupation or train.

In 1961 recommendations on science education was very significant. Reports regarding laboratory and equipments revealed the following facts for improvement of science education:

1) Functional environments for science education.
2) Laboratory and equipment for facilitating science education.
3) Details infrastructural environments for laboratories.
4) Socio-economic condition to be considered for improving practical laboratories.
5) Details about size, shape and other conditions for maintaining a good laboratory.

Main Recommendations :

1. Since the main function of a laboratory is to impart scientific education in an efficient way, its design should, therefore, be based on functional requirements.

2. The panel considers that in the interest of economical distribution of lay-out and services, it would be advisable to locate the laboratories for Chemistry and Home Science on the ground floor and those for Physics and Biology on the first floor over these laboratories if the school buildings have a double-storied structure. For a single-storied structure, the grouping of Home Science with Chemistry and of Biology with Physics may still be kept intact. Both Chemistry and Home Science laboratories require special lay-outs for water and drainage which will be best arranged if they are both on the ground floor and adjacent to each other.

3. The panel is of the view that all the four laboratories, viz. Physics, Chemistry, Biology and Home Science could be of the same size, i.e. 10.0 m × 6.0 m = 60 sq. m. (32' × 20' – 640 sq. ft.) with a space of 6.0 m = 60 m × 3.7 m = 22.2 sq. m. (20' × 12’ – 240 sq. ft.) provided for ancillaries for each laboratory. The Panel feels that the space requirement of 60 sq. m. for a batch of 24 students is the minimum that could be recommended for each laboratory.

4. The factor of light, apart from affecting visual and physical comfort of students, involves the question of economy also in respect of the size and type of windows and of the disposition of light fittings. The chief purpose of lighting is to provide comfortable visual observation for laboratory work
and the conservation of vision of the young workers. It is desirable to make maximum use of day-light by proper location of doors, windows and skylights. Windows are best placed at a standard height of 1.2 m (4 ft.) from the finished floor level, as this would give a good distribution of light over the work tables whose height may vary between 85 cm. and 90 cm. (2'9" and 3'). To save on capital as well as recurring expenses artificial lighting needs to be provided only for occasional work. Windows and doors should be so disposed as to provide as evenly distributed illumination as possible. A window area of 20 per cent of the floor area is considered to be adequate for general laboratory work. In terms of lumens per sq. ft. is considered to be adequate. The following reflectance standards are recommended for obtaining a desirable brightness level inside the laboratories:

Ceilings — 85% of the total amount of light received by the surface.
Walls — 60% of the total amount of light received by the surface.
Floors — 15% to 30% of the total amount of light received by the surface.

5. Light and colour are closely inter-related so that in determining a suitable colour scheme inside the laboratory, the reflectance value should always be taken into account. White is not considered suitable for laboratory walls as it causes glare and shows dirt very prominently. Light cream or silver grey be preferable.

6. Work table is the most important item of laboratory furniture and needs careful consideration. The Panel, after careful consideration of the functional requirements, makes the following recommendations:
   a) Size of the work table need not be the same for all the four laboratories since the work carried out differs in each case.
   b) Work tables in the Physics, Chemistry and Home Science laboratories
need not have drawers or closed cupboards. Biology tables, however, may preferably be provided with drawers. In Physics laboratory the work tables may me provided with 2 ft. wide intermediate shelves about 1 foot above the floor level.

c) Provision for tables should be made for 24 students in each laboratory.

7. The committee strongly recommended that accommodation such as storage and balance room must form an essential part of the laboratory itself and should be well-planned in the same manner as the laboratory.

8. The panel feels that laying down of specifications and standards for equipment and apparatus will greatly improve the quality of instruments at present being supplied to schools and recommends that the necessity for making these specifications may be brought to the notice of the Indian Standard Institution and the Central Scientific Organisation with the request that they may expedite the laying down of standards of at least those items of science apparatus which are already being manufactured in the country.

9. The panel made a detailed study of the cost involved in equipping the various laboratories and recommended that the procurement of equipment and apparatus for a school which was to introduce science subjects afresh may be spread over a period of three to four years. In the case of a school which is already imparting instruction in these subjects, the requirements will vary with reference to the available equipment and need for future development within the limits of the Panel’s list.

10. In 1970’s the examination situation was not proper. Some malpractices were reported in different parts of India from where West Bengal, is not an exception. But presently in 2005-2006 the situation has been changed
overall. The situation in the examination hall presently is almost fair. Actually we are not interested about the examination situations of the hall but simultaneously we cannot avoid it because in West Bengal in secondary schools evaluation technique is based on summative approach where examination environment and other technical factors are very important.

Committee on Examinations, 1970 (Report : New Delhi, National Council of Educational Research and Training, 1971) :

Summary of Recommendations :

1. Legislation :

   The State and Central Governments should immediately take suitable measures to get amending legislation passed in the relevant laws pertaining to the following matters :
   a) Empowering the Board / University to grant autonomous status to well established institutions.
   b) Empowering the examining authorities to check students and prohibit those with weapons from entering the examination halls.
   c) Making the assembly of persons within a certain distance from an examination hall a cognisable offence.
   d) Making the indulgence in malpractices by employees and authorities of the universities / boards a cognisable offence.
   e) Empowering the examining authorities to take out insurance for the invigilators and examiners.
   f) Making the assault on an examiner or an invigilator or other person connected with examination, a cognisable offence.

2. Conduct of Examination :

   a) Paper-setters should be appointed at least six months prior to the
commencement of a Public Examination and they should be given at least eight weeks to draft questions. The papers should be finalised at a meeting of the paper-setters.

b) Where the number of candidates in Public Examination is very large, there should be decentralisation with separate examination for each group of 10,000 school students or 1,000 college students.

c) A Public Examination should be conducted in the institution in which the students study. The majority of the invigilators and superintendents should be drawn from the institution concerned.

d) Admission to the centre of a Public Examination should be through one main entrance. Only bona fide candidates with identity cards should be admitted in the examination centre after thorough checking.

e) Model answers should always be prepared and supplied by the paper-setters.

f) Copies of the question papers set should be made available to the teachers in the schools and colleges on the day of the examination but after it is over, so that the teachers could comment on the paper to the authorities quickly.

g) The method of spot evaluation at a central place to which all the examiners are called, should be adopted.

h) The result should be declared subject-wise and furnished in the form of grades. The 'raw' marks given on the candidates passing in the minimum number of subjects.

i) The certificate issues by an examining authority should have two columns, viz. one giving the result of Public Examination and the other giving the result of the internal assessment by the teachers.

j) For the awarding of prizes and scholarships to a candidate who stands first in an examination or in a subject, a separate test should be conducted and admission to the same limited to those who secure the highest grade in the Public Examination.

k) There should not be too many Public Examinations. There should be one at
the end of the upper primary / middle school stage, another at the end of the secondary stage and the third at the first degree stage. All others should be internal assessments only.

3. Use of Examination Results:
   a) A recruitment to the services should be made on the basis of tests / examinations conducted by the Public Service Commissions and the maximum age for appointment for clerical posts be reduced to 19 years.
   b) Admission to colleges including professional colleges should be on the basis of an entrance test conducted specifically for assessing the aptitude of a student for a particular course. Eligibility to appear at these tests should alone be determined by the results of the Public Examination.

4. Budgeting for Education:
   In future, both the Central and State Governments should make funds separately for guidance and studies and research on examinations.

5. Research:
   There should be continued study and research on examinations, both at the State and Central levels and in the boards / universities in a coordinated manner. Necessary funds for the same should be provided on a priority basis.

6. Novel Ideas
   Novel ideas for the organisation and conduct of Public Examinations should be encouraged.

Examination Committee, 1957 : A Component Of T/L System (Report : New Delhi, U. G. C.) :

Summary of Recommendations:
1. No reform in the system of examinations will reduce the failure rate in our universities and colleges, unless the prevailing admission procedures are
improved. We have therefore, to see that only those candidates are admitted to universities who can profit by higher education. One of the feasible ways by which this could be done is to introduce in the School Leaving Examination two additional papers, one to test competence in the use of the language of the university and one to test intellectual maturity, for those who wish to enter the university.

2. Teaching work should be done not only through lectures but through tutorials, seminars, etc. It will be desirable to hold periodical short tests on the work done in the tutorials and to maintain a record of the assessments made. This should be regularly evaluated. Each university may decide what weightage should be given to this. In order to make room for tutorials, lectures may be cut down (it should be possible to reduce them by 50 per cent) and the teaching work divided between tutorials and lectures.

3. The U. G. C. should encourage seminars, discussions and conferences of university and college teachers for defining the objectives of teaching and examinations in different subjects at various levels. A clear conception of the aims of teaching will facilitate good teaching and bring about a greater conformity between examinations and teaching.

4. Research should be undertaken in regard to both the educational and technical aspects of examinations. Topics which may be taken up for research in this connection are indicated in the report. It should be possible for the departments of education in universities to undertake such work as a part of their normal activities. Perhaps the newly created National Council of Educational Research and Training would also be able to assist in this. There should be arrangement in the University Grants Commission to coordinate the research work of the different universities and to disseminate information and conclusions with regard to the studies undertaken.
Secondary Education Commission, 1952–53 – Search for Development of Science Education:

A. To suggest measures for its reorganization and improvement with particular reference to:

1. The aims, organization and content of secondary education;
2. Its relationship to primary, basic and higher education;
3. The inter-relation of secondary schools of different types; and
4. Other allied problems.

Summary of Recommendations:

1. Aims and Objectives of Secondary Education:

   i) The adoption of the goals of democracy and socialism necessitating the development among the people of a broad, national and secular outlook;
   
   ii) The extreme poverty of the country and urgency for promoting its economic growth; and
   
   iii) The absence of educational facilities needed for developing all aspects of the human personality and the neglect of cultural pursuits and activities.

   On the basis of this analysis, the Commission recommended that secondary education should be reoriented to the following aims and objects:

   (a) Development of qualities essential for creative citizenship: This includes the development in the students of secondary schools of those habits, attitudes and qualities of character which are essential for creative citizenship in a democratic society. Among these qualities, which are to be fostered through curricular and co-curricular activities in secondary schools, are:

   i) the capacity for clear thinking (allied which is the capacity for clearness in speech and writing);

   ii) the scientific attitude of mind;

   iii) a receptivity to new ideas;
iv) a respect for the dignity and worth of every individual;
v) the ability to live harmoniously with one's fellowmen through the cultivation of discipline, cooperation, social sensitiveness, tolerance and
vi) a sense of true patriotism.

(b) The promotion of vocational efficiency: This involves not only the creation of a new attitude to work and an appreciation of the dignity of manual labour but also the development of the students' technical skill and efficiency through greater emphasis on craft and productive work and the diversification of courses at the secondary stage.

(c) Development of personality: This implies cultivation of the students' literary, artistic and cultural interests for a fuller development of their personalities. This means the provision of subjects like art, craft, music, dancing and hobbies in the secondary school curricula.

(d) The training for leadership: The training of persons who, on completion of the Secondary stage, would be able to assume the responsibilities of leadership at the intermediate level.

2. Methods of Teaching:

a) Inculcation of values, attitudes and work habits: The methods of teaching in schools should aim not merely at the imparting of knowledge in an efficient manner, but also at inculcating desirable values and proper attitudes and habits of work in the students.

They should, in particular, endeavour to create in the students a genuine attachment to work and a desire to do it as efficiently, honestly and thoroughly as possible.

b) Activity and project methods: The emphasis in teaching should shift from verbalism and memorization to learning through purposeful, concrete and
realistic situations and, for this purpose, the principles of Activity Method and Project Method should be assimilated in school practice.

Teaching methods should provide opportunities for students to learn actively and to apply practically the knowledge that they have acquired in the classroom. Expression Work of different kinds must, therefore, form part of the programme in every school subject.

c) **Emphasis on clear thinking and expression** : In the teaching of all subjects special stress should be placed on clear thinking and clear expression both in speech and writing.

d) **Training pupils in techniques of study** : Teaching methods should aim less at imparting the maximum quantum of Knowledge possible, and more on training students in the techniques of study and methods of acquiring knowledge through personal effort and initiative.

e) **Instruction to suit different student abilities** : Attempt should be made to adopt methods of instruction to the needs of individual students as much as possible so that dull, average and bright students may all have a chance to progress at their own pace.

f) **Group projects and activities** : Students should be given an adequate opportunity to work in groups and to carry out group projects and activities so as to develop in them the qualities necessary for group life and cooperative work.

3. **Examinations and Evaluation** :

Reviewing the defects of examinations at the secondary stage, the Education Commission said:

“The examinations today dictate the curriculum instead of following it, prevent any experimentation, hamper the proper treatment of subjects and sound
methods of teaching, foster a dull uniformity rather than originality, encourage
the average pupil to concentrate too rigidly upon too narrow a field and thus
help him to develop wrong values in education. Pupils assess education in terms
of success in examinations. Teachers, recognizing the importance of the
external examination to the individual pupils, are constrained to relate their
teaching to an examination which can test only a narrow field of the pupil's
interests and capacities and so inevitably neglect the qualities which are more
important though less tangible”.

a) External Examination — Introduction of Objective Type Tests:

The number of external examinations should be reduced and the element
of subjectivity in the essay type tests should be minimized by introducing
objective tests and also by changing the type of questions.

b) School records for assessment of all-round progress: In order to find out
the pupil's all-round progress and to determine his future, a proper system of
school records should be maintained for every pupil indicating the work done
by him from time to time and his attainments in the different spheres.

c) In the final assessment of the pupils due credit should be given to the internal
tests and the school records of the pupils.

d) Symbolic marking to replace numerical marking: The system of
symbolic rather than numerical marking should be adopted for evaluating and
trading the work of the pupils in external examinations and in maintaining the
school records.

e) One public examination – final comprehensive certificate: There should
be only one public examination at the completion of the Secondary School
course.
f) The certificate awarded should contain, besides the results of the public examination in different subjects, the results of the school tests in subjects not included in the public examination as well as the gift of the school records.

g) The system of compartmental examinations should be introduced at the final public examination.

h) **Board of Secondary Education to be set up** : There should be a Board of Secondary Education consisting of not more than 25 members with the Director of Education as its chairman to deal with all matters of education at the Secondary stage and to lay down general policies.

A sub-committee of the Board should deal with the conduct of examinations.

4. **Buildings and Equipment** :

a) **School buildings–space per pupil** : Normally, in designing buildings for schools, care should be taken to see that an area of not less than 10 sq. ft. is provided per student in the classroom.

b) **Optimum strength of class and school** : The optimum number of boys to be admitted to any class should be 30 and the maximum should not in any case exceed 40; the optimum number in the whole school should be 500 while the maximum should not exceed 750.

c) **Research required on school buildings, furniture and equipment** : In the type design of schools as well as the furniture, etc., research should be carried on to improve functional efficiency and to adjust them to Indian conditions.

An expert committee should be appointed to lay down carefully the amount and the kind of equipment required for various types of diversified courses and workshops.
d) **Land for educational purposes** : The State Governments and the Centre should, wherever possible, assign lands to schools for playgrounds, buildings or agricultural farms and other necessary purposes without any charge.

e) **Exemption from customs duty for equipment and books** : In order to popularize progressive teaching methods and facilitate their introduction, “Experimental” and “Demonstration” schools should be established and given special encouragement where they exist, so that they may try out new methods freely without being fettered by too many departmental restrictions.

5. **Teachers**

a) **Guide material for teachers** : Suitable literature for the guidance and inspiration of teachers should be produced by the Education Departments of all States and either the office of the Director of Education or one of the training colleges should be adequately equipped for the purpose.

b) **Special committee to review the scales of pay** : A special committee should be set up to review the scales of pay of teachers of all grades and recommend such scales of pay that will meet in a fair and just manner the varying cost of living.

National Policy On Education 1979 suggests that “the present system of education must be reorganized is the light of contemporary Indian realities and requirements”.

Secondary education is very important for the continuation among secondary (10\(^{th}\) grade), higher secondary (12\(^{th}\) grade) and primary education. National Policy on Education 1979 rightly comments, “The entire educational system has to be seem as one chain”.

It is true that after independence number of secondary schools have been increased rapidly in India supported by the following information –
Common Elements of A T/L System Curriculum Framework:

Curriculum Studies and Examination System:

Curriculum analysis or studies is necessary by virtue of its centrality to two important tasks performed by teachers and administrators: curriculum selection and curriculum adaptation. When selecting or adapting a curriculum for use in a particular classroom, school or school systems, it is important to determine whether or not it is appropriate for the situation.

Curriculum studies may be looked as one kind of content analysis of the curriculum documents and therefore, you will have to put into actions and steps required in content analysis as a kind of methodology of research.

Finally, with these sorts of activities, thinking, orientations, techniques, etc. when you will be able to internalized, you will be an active team member of a curriculum group.

A curriculum framework refers to a broad map of a curriculum which presents the curriculum work in precise way but does not generally explicitly the all ramifications of the learning tasks to be operated when it will be implemented in the real world of classroom. Every curriculum framework is expected to exhibit some essential elements in the framework documentation.

1. Introduction – Current Context:

   It provides a rationale of the curriculum framework.

2. Educational Policy:

   It provides a conceptual support of the Governments policy on education, inclusion of ICT, meeting the challenges of global trends, development of skills, improving the universal literacy and to create a productive knowledge society.
3. **Learning Objectives**:

Describes what students know and be able to do when they complete their curricula. Outcomes should be expressed in different domains, including knowledge, understanding, skills, and competencies, values and attitudes.

4. **Structure of the Education System**:

Describes the school system within which the curriculum framework is to be applied:

- Number of schooling including compulsory schooling. Stages of schooling and their durations.
- Number of weeks in the school years and hours or teaching periods in the school week.

5. **Structures of Curriculum Content, Learning Area and Subjects**:

Describes the organization of content within the framework and the extent to which schools and students can make choices.

- The pattern of subjects or learning areas to be studied in each stage or cycle such as core, elective and optional subjects.
- A brief description of each subject or learning areas outlining the rationale for inclusion in the curriculum and the contribution to the achievement of learning outcomes.

6. **Standard of Resources required for Implementation**:

Teacher’s qualification, Teaching load. Students-involvement and activities Materials-textbooks, computers, other equipment, facilities in classroom.

7. **Teaching Methodology**:

Description in the range of teaching approaches that might be employed in the implementation of the framework.
8. Assessing Student Achievement:

Describing the importance of assessing the extent to which students achieve the outcomes of each subject, and recommends types of assessment strategies such as written, oral, performance, and practical or dissertations.

Teaching Learning System Component: Curriculum National Curriculum Framework – 2005 By NCERT:

- 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 with classroom life and,
- Nurturing an identity soaked in caring concerns within the democratic polity of the country.

Quality is the first and the last mantra of the national curriculum framework. The late J. P. Naik had described equality, quality and quantity as the ‘elusive triangle’ of Indian education. Moreover, UNESCO’s recently published global monitoring report discusses systematic standards as the appropriate context of the quality debate.

The quality dimension also needs to be examined from the point of view of the experiences designed for the child in terms of knowledge and skills. Assumptions about the nature of knowledge and the child’s own nature shape the school ethos and the approaches used by those who prepare the syllabi and textbooks, and by teachers.

Learning and Knowledge – Curriculum

Learning is at the Heart of the Curriculum in Action

The formal processes of learning that school makes possible can open up new possibilities for understanding and relating to the world. The curriculum
framework advocates for child-centered pedagogy. ‘Child-centered’ pedagogy means giving primacy to children’s experiences, their voices, and their active participation. This kind of pedagogy requires us to plan learning in keeping with children’s psychological development and interests.

**Development and Learning:**

- All children are naturally motivated to learn and are capable of learning.
- Making meaning and developing the capacity for abstract thinking, reflection and work are the most important aspects of learning.
- Children learn in a variety of ways – through experience, making and doing things, experimentation, reading, discussion, asking, listening, thinking and reflecting, and expressing oneself in speech, movement or writing – both individually and with others. They require opportunities of all of these kinds of their development.
- Teaching something before the child is cognitively ready takes away from learning it at a later stage. Children may ‘remember’ many facts but they may not undersigned them or be able to related them in the world around them.
- Learning takes place both within school and outside school. Learning is enriched if the two areas interact with each other. Art and work provide opportunities for holistic learning that is rich in tacit and aesthetic components. Such experiences are essential for linguistically known things, especially in moral and ethical matters, to be learnt through direct experience, and integrated into life.
- Learning must be paced so that it allows learners to engage with concept and deepen understanding, rather than remembering only to forget after examination.
- Learning can take place with or without mediation. In this case the latter, the social context and interactions, especially with those who are capable,
provide avenues for learners to work at cognitive levels above others (NCF-2005, pp. 15 – 16).

**Teaching for Construction of Knowledge:**

Constructivist Learning Situation Process involves basically two elements – Interpretation, construction and Multiple interpretation.

In this context, teacher is a facilitator who encourages learners to reflect, analyse and interpret in the process of knowledge construction.

Much of our school learning is still individual based (although not individualised!). The teacher is seen as transmitting ‘knowledge’ which is usually confused with information to children, and organising experiences in order to help children learn. Learning in the company of others is a process of interacting with each other and also through the learning task on hand. This kind of learning gets enriched when schools enrol children from different socio-economic backgrounds.

There are ways in which group learning can be assessed and evaluated. Schools could also consider giving mixed age groups of children projects to do together. In such mixed groups there is much that children can learn from each other such as team work and social values. Group learning tasks, taking responsibility, and contributing to a task on hand are all important facets of not only acquiring knowledge but also in learning of crafts and arts.

**Designing Learning Experiences:**

**Approaches to Planning:**

Learning must be focused on activity. The learning experiences should be organized as:

- Observing something happen.
- Participating in an exercise involving body and mind such as planning a role around a theme and presenting it.
• Talking about and reflecting on something the child has experience.
• Making something, say, a system of gear wheel or trying out an experiment in a lift.
• After the experience, the teacher could organize a discussion, an exercise involving, writing, drawing and display, etc.

2.7 Examples of School Process Indicators

Community Involvement:
• The degree of actual involvement of parents in various school activities (the teaching and learning process, extra-curricular activities and supporting activities).
• The percentage of the total annual school budget that is obtained from the local community.
• The amount of discretion local school boards have concerning the working conditions of teachers.

Co-curricular Activities including Community Involvement:

Financial and Human Resources:
• Average years of teachers’ experience per school.’
• School-level pupil / teacher ratio.
• Average class size per school.
• Proportion of formally qualified teachers per school.
• School managerial ‘overhead’ (principal and deputy-principal fte per 1,000 students).

Achievement-oriented Policy:
• Whether or not schools set achievement standards.
• The degree to which schools follow the careers of pupils after they have left the school.
• Whether or not schools report achievement / attainment outcomes to local constituencies.

**Educational Leadership :**
• The amount of time principals spend on educational matters, as compared to administrative and other tasks.
• Whether or not principals appraise the performance of teachers.
• The amount of time dedicated to instructional issues during staff meetings.

**Continuity and Consensus among Teachers :**
• The amount of changes in staff over a certain period.
• The presence or absence of working groups or departments for different school subjects (secondary schools).
• Frequency and duration of formal and informal staff meetings.

**Orderly and Safe Climate :**
• Statistics on absenteeism and delinquency.
• Ratings of school discipline given by principals, teachers and pupils.

**Efficient Use of Time :**
• Total instruction time and time per subject-matter area.
• Average loss of time per teaching hour (due to organization, moving to different rooms, locations, disturbances).
• Percentage of lessons ‘not given’ on an annual basis.

**Opportunity to Learn :**
• Teacher or student ratings of whether each item of an achievement test was taught or not.

**Evaluation of Pupil’s Progress :**
• The frequency of curriculum-specific tests at each grade level;
• The frequency of standardized achievement tests;
- The actual use teachers make of test results.

**Ratings of Teaching Quality:**
- quality of instruction as rated by peers (other teachers);
- quality of instruction as rated by students.

**Effectiveness Models:**

**Additional Factors for Process Indicators generated from the Quinn and Rohrbaugh Framework**

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According to Bill Mulford these following dimensions in the professional development of school leaders (content, delivery mode and measurement of success) can be found in recent reviews of the area. Ribbins (2000), for example, argues for an approach to school leader professional development which:

- is centrally concerned with improving the quality of schooling and the achievement of pupils;
- is systematic, comprehensive and of high quality;
- makes available continuing opportunities for every career phase;
- has a concern for practical skills but also for a more philosophical approach;
- involves a range of providers;
- provides core training, but supports development opportunities that mean more than this and,
- is based on the best available evidence and fosters the research that generates this.

Another example is provided by Bredeson (2003) who proposes a set of design principles for expanding and legitimising learning opportunities for those in schools. Using the metaphor of architecture and building on empirical
research and exemplary practice Bredeson (2003) identifies six design themes:

- professional development is about learning, including teachers and principals being part of its design;
- professional expertise is a journey, not a credential;
- opportunities for professional learning are unbounded;
- student learning, professional development and organisational mission are intimately related; and,
- professional development is about people, not programs and activities.

The proposed stages and dimensions can also be found in two major cross-country studies of the professional development of school leaders. It is to these two studies that we now turn before concluding the paper with some possible implications arising from the material presented.

**Academic Achievement and some related views in Teaching Learning System:**

As Gallag concurs, most people would argue that teaching requires a variety of proficiencies that can justifiably contribute to teacher evaluation, yet which may only indirectly influence student performance on a given assessment. Teachers need to become familiar with current research on student achievement and network with colleagues to learn more about teaching expertise.

Teachers are responsible for finding ways to educate all children and it is a teacher’s duty to participate in professional development activities that foster this responsibility. Practices such as differentiated instruction, data driven instruction and identifying areas of weakness in students are crucial to developing the quality of classroom teachers. Differentiated instruction is vital for increased student performance because it meets the needs of every student. This connects to the notion of schools making improvements based on test data, especially in weak areas. Teachers need to remember that external
characteristics, such as student socioeconomic status and parental educational attainment, impact student achievement in significant ways, but when those differences are controlled for, teachers are the most important determinants of student achievement (Gallagher, 2002). These findings support the views of Bullough et al. (2003) that if, as some teacher education detractors argue, academic ability and scores on standardized achievement tests are good measures of teacher quality, these students ought to be outstanding.

2.8 Conditions of Effective teaching According to Anderson, 1999

<table>
<thead>
<tr>
<th>Teaching Characteristics (Anderson)</th>
<th>Teaching</th>
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</thead>
<tbody>
<tr>
<td><strong>Enacted curriculum</strong></td>
<td><strong>Structuring of lessons (sequence)</strong></td>
</tr>
<tr>
<td>• opportunity to learn</td>
<td>• orientation</td>
</tr>
<tr>
<td>• academic work:</td>
<td>• clear purposes</td>
</tr>
<tr>
<td>▶ appropriate selection</td>
<td>• monitoring</td>
</tr>
<tr>
<td>▶ regular (home) work</td>
<td>• independent practice</td>
</tr>
<tr>
<td>▶ students held accountable</td>
<td>• corrective feedback</td>
</tr>
<tr>
<td>▶ adequate supervision</td>
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</table>

<table>
<thead>
<tr>
<th>Classroom Environment and Climate</th>
<th>Stimulating Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical environment</strong></td>
<td>• reinforce paying attention</td>
</tr>
<tr>
<td>• classroom arrangement</td>
<td>• develop learning strategies</td>
</tr>
<tr>
<td>• equipment</td>
<td>instruments</td>
</tr>
<tr>
<td>• seating patterns</td>
<td>• success standards</td>
</tr>
<tr>
<td>• class size</td>
<td>• create “holding power” in learning</td>
</tr>
</tbody>
</table>
Wang and Walberg, (2001) distinguishes 12 principles of effective teaching. These are the following:

1) **Supportive classroom climate**: Students learn best within cohesive and caring learning communities. The role of the teacher as models and socializers is emphasised.

2) **Opportunity to learn**: Students learn more when most of the available time is allocated to curriculum related activities and the classroom management system emphasises maintaining students' engagement in those activities.

3) **Curricular alignment**: All components of the curriculum are aligned to create a cohesive program for accomplishing instructional purposes and goals.

4) **Establishing learning orientations**: Teachers can prepare students for learning by providing an initial structure to clarify intended outcomes and cue desired learning strategies (e.g., providing advance organisers and cueing the kind of responses that are expected).

5) **Coherent content**: To facilitate meaningful learning and retention, content is explained clearly and developed with an emphasis on its structure and connections. "When making presentations, providing explanations, or giving demonstrations, effective teachers project enthusiasm for the content and organize and sequence it so as to maximise its clarity and “learner friendliness”.

6) **Thoughtful discourse**: Questions are planned to engage students in sustained discourse structured around powerful ideas.
7) **Practice and application activities**: Students need sufficient opportunities to practice and apply what they are learning, and to receive improvement-oriented feedback.

8) **Scaffolding students’ task engagement**: The teacher provides whatever assistance students’ need to enable them to engage in learning activities productively. Structuring and support can be lessened as the students’ expertise develops.

9) **Strategy teaching**: The teacher models and instructs students in learning and self-regulation strategies. Meta-cognitive awareness and self-regulation are sought in context like problem solving and general learning and study skills. An example of teacher modelling is, for example, when a teacher thinks out loud while modelling use of the strategy. Students are stimulated to monitor and reflect on their learning.

10) **Co-operative learning**: Students often benefit from working in pairs or small groups to construct understandings or help one another master skills.

11) **Goal-oriented assessment**: The teacher uses a variety of formal and informal assessment methods to monitor progress toward learning goals. Comprehensive assessment also examines students’ reasoning and problem-solving processes.

12) **Achievement expectations**: The teacher establishes and follows through on appropriate expectations for learning outcomes.

### 2.9. School Values and Norms of behaviour

To be good and effective, a school should have

1. a clear organisation, characterised by stated missions,
2. goals,
3. values and standards of performance,
4. professional environment for teachers,
5. teachers participate in decisions affecting their work,
6. have reasonable autonomy to carry out their work,
7. Share a sense of purpose and
8. community & receive recognition (Chayya, 1997).

**Components of School Culture:**

Culture is reflected in an organization’s atmosphere, myths, and moral code. The characteristics of a school district’s culture can be deduced from multiple layers:

- Artefacts and symbols: the way its buildings are decorated and maintained.
- Values: the manner in which administrators, principals and staff function and interact.
- Assumptions: the beliefs that are taken for granted about human nature.

As a school district’s culture develops over time, it is maintained by several practices:

- Common beliefs and values that key individuals communicate and enforce.
- Heroes and heroines whose actions and accomplishments embody these values.
- Rituals and ceremonies that reinforce these values.
- Stories that reflect what the organization stands for.

The following chart shows how these components of school culture can support or impede learning.

<table>
<thead>
<tr>
<th></th>
<th>Supports Learning</th>
<th>Impedes Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artifacts and symbols</td>
<td>The building and its arrangements reflect the children, their needs, and their educational accomplishments.</td>
<td>There is little that reflects an emphasis on children and their education.</td>
</tr>
<tr>
<td>Values</td>
<td>Administrators, teachers, students and parents participate in decision making.</td>
<td>Decisions are made without participation of teachers and parents.</td>
</tr>
<tr>
<td>Assumptions and beliefs</td>
<td>Supports Learning</td>
<td>Impedes Learning</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>All students can learn. Parents want their children to succeed. Parents are partners in education.</td>
<td>Some students are incapable of learning or too lazy to learn. Parents don’t care. Parents know nothing about education.</td>
<td></td>
</tr>
</tbody>
</table>

**School Climate:**

School climate reflects the physical and psychological aspects of the school that are more acceptable to change and that provide the preconditions necessary for teaching and learning to take place.

**Components of Teaching Learning System:**

Although there is no consistent agreement in the literature on the components of school climate or their importance, most writers emphasize caring as a core element. However, some place safety foremost, defining school climate as “an orderly environment in which the school family feels valued and able to pursue the school’s mission free from concerns about disruptions and safety”.

Several aspects of a school’s physical and social environment comprise its climate. One organization identified the following eight areas:

- Appearance and physical plant.
- Faculty relations.
- Student interactions.
- Leadership / decision making.

**How does school climate affect school performance?**

Numerous studies document that students in schools with a better school climate have higher achievement and better socio-emotional health. Probably
the most comprehensive work in this area is being done by the Search Institute, a non-profit organization that encourages schools and communities to develop and empower young people.

In a review of studies on the impact of support in school, the Search Institute found that a caring school climate is associated with:

- higher grades, engagement, attendance, expectations and aspirations, a sense of scholastic competence, fewer school suspensions, and on-time progression through grades (19 studies),
- higher self-esteem and self-concept (5 studies),
- less anxiety, depression and loneliness (3 studies) and
- less substance abuse (4 studies).

Another study by John Schweitzer of Michigan State University, found that when students in Detroit schools felt a sense of community with one another and a sense of belonging to their schools, they achieved higher scores on MEAP tests.

A national study of more than 12,000 seventh to twelfth graders found that connectedness to family and school significantly protects youth from seven of eight behaviors risky to their health.

**Measuring School Climate:**

There are numerous instruments designed to measure what various authors define as school climate. These are listed and rated in the Appendix.

**Changing School Climate and School Culture:**

Improving student behavior and academic performance generally requires changing school climate and school culture. Change may require moving individuals and organizations along a continuum from “at risk” to “safe” to “thriving”. This process takes time to accomplish.

While making positive changes in school climate motivates staff and students to improve, the district-level school culture must also change if school
reforms are to be sustained for long-term improvement.

Both school climate and school culture require significant attention when a principal or superintendent is new or when major changes are being implemented in the school system. It is worth noting that educational reform under the No School Left Behind act is essentially a long-term effort to change school culture. Note the central mantras of educational reform:

- Teachers and the school are accountable.
- All children can and must learn.

**Some Approaches to Change:**

Promoting a safe and orderly environment:

- Maintain buildings in good physical condition.
- Reward students for appropriate behavior.
- Enforce consequences for inappropriate behavior.
- Use contracts with students to reinforce behavioral expectations.
- Post behavioral policies on bulletin boards; periodically announce them over the public address system.
- Initiate anti-building, conflict resolution and peer mediation programs.
- Engage students, staff and parents in planning school safety activities.
- Increase number and accessibility of counselors, social workers, and mentors.
- Create anonymous up lines or suggestion boxes for reporting potentially dangerous situations or providing ideas to improve school climate.
- Provide more in-school options to “blow off steam”.
- Develop strategies to ensure safety during lunch periods and between classes, provide more structured activities during lunch hour.
- Provide accommodation on time-out rooms throughout the day.
- Provide in-school suspension programs with academic supports and consistent staffing.
2.10 Some Approaches towards Effective Teaching Learning System

- Promoting a safe and orderly environment.
- Maintain buildings in good physical condition.
- Reward students for appropriate behavior.
- Enforce consequences for inappropriate behavior.
- Use contracts with students to reinforce behavioral expectations.
- Post behavioral policies on bulletin boards; periodically announce them over the public address system.
- Initiate anti-bullying, conflict resolution and peer mediation programs.
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- Develop strategies to ensure safety during lunch periods and between classes; provide more structured activities during lunch hour.
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- Provide in-school suspension programs with academic supports and consistent staffing.

According to Kelli Ballard and Alan Bates Accountability, high-stakes, and student achievement are popular terms among educators. Students’ performance on standardized achievement tests is used to a high extent in reflecting the quality of instruction students receive from teachers as an intraculture.

1) Teachers Accountability,
2) Assuring quality and facilitating improvement institutional atmosphere.

It will best be achieved when teachers and their organizations claim the responsibility for developing and implementing methods for assessing their performance that respect the complexity and depth of their professional
knowledge and practice (Kleinhenz & Ingvarson, 2004). In other words, do current teacher evaluation procedures assess all the components that teachers are supposed to possess?

The majority of educators agree with the fact that holding teachers accountable is imperative for student learning to take place. However, a lively debate surrounds the question of how accountability is established and about the place and value of professionalism in accountability (Bullough, Clark, & Patterson, 2003).

According to Gallagher (2002) schools such as Vaughn Elementary in Los Angeles, California evaluate teachers in ten domain areas, and teachers are not only evaluated by their principal, but by peers and themselves, too. Teachers are rated on a scale of one to four on each standard. This school found that the alignment between taught and tested curriculum, both in terms of content and cognitive demand, is a highly significant predictor of student performance. This study did make it clear, however, that no single measure should be seen as the sole criterion for judging performance rather than combining both the Intra and Inter Cultural Determinants for academic success.

According to Vandevoert, Amrein-Beardsley and Brliner (2004) the quality of a teacher in the classroom is the single most important factor in determining how well a child learns. Throughout the United States, schools are being evaluated based on their students' performance on a state mandated test given every year. Because of the No Child Left Behind [NCLB] Act, schools and teachers are being held accountable in more ways than ever based on student's performance.

Reference: David Ashley, Head teacher, Parrs Wood High School, Manchester.

Empowering Leadership:

It was common to assume that the cultural atmosphere of a school
revolved around the quality of the head teacher. Consequently, the idea of the ‘super head’ that solve all of its problems and swoop out again was prevalent. It is now generally accepted that such a model so dependent on short-term, top-down management, was nonsense. However, the head teacher does have a crucial role to play.

The key role for a head teacher is that of empowerment, creating a culture in which the vast intellect, ability and talent of the staff is not only solved, but fully utilized. If head teachers do not make it clear that all staff have the authority to make decisions, to be innovative and creative, then they will assume that they do not. If that happens, the vast wealth of knowledge & experience that exists in all schools will remain untapped.

**Relying on Collaboration**:

Choosing the appropriate networks to work with a matter of personal choice and school context. It is useful to work with local school leaders through local authorities in collaboration. Leadership incentive grants, Excellence in Quality practice and so one can develop initiatives that may directly involve students across a locality.

**Reference**: David Ashley, Head teacher, Prorswood High School, Manchester.

**School Leadership and Cultural Determinants**:

Although it is recognized that head of the institution pay a crucial role in school-wide effort to raise standards of teaching and pupil learning and achievement, evidence-based knowledge of what makes successful leaders remains elusive. The most popular theories are located in the transaction & transformational models identified more than 20 years ago (Burns, 1978) and lately reinvented through such terms as ‘liberation’ (Tampoe, 1998), ‘educative’ (Duignan & Me Pherson, 1992), ‘invitational’ (Stoll & Fink, 1996) and ‘moral’ leadership (Sergiovanni, 1992).
What is clear from these, and from the effective schools literature, is that successful leaders not only set direction but they also model values and practices consistent with those of the school, so that ‘purposes which may have initially seemed to be separate become fused’ (Sergiovanni, 1995).

Yet relatively few research studies have sought information from heads recognized as effective, and fewer still have sought educated opinion from those who know most about them, i.e. their students, staff, governors and parents. In 1998, the National Association of Head teachers, the largest in the UK, Commissioned such a study reveals the following:

- Twelve heads were selected from schools of different sizes, operating within different phases, and located in a range of geographical, economic and socio-cultural settings.
- All the schools had received a positive inspection report by of the above committee particularly with regard to their leadership. All were performing better than average, and the heads all had a good reputation amongst their peers. Gender and experience were also factored in.
- All schools were visited for three days by members of the five research team, a substantial number of interviews were conducted, and local documentation supplemented there.

Analysis of all the data revealed that the cultural determinants of academic institutions are as follows:

- Values-led that is a cultural set up to be developed in a school.
- People centered.
- Achievement-oriented.
- Inwards and outwards facing which is equivalent to intra & inter cultural determinants.
- Able to manage a number of ongoing tensions and dilemmas.
- All emphasized that the sets of care personal values of the heads were based upon care, equity, high expectations and achievement, which were clear to
and shared by the overwhelming majority of the school constituencies and which were the drivers for the life of the school.

- All emphasized the importance attached by the heads to monitoring standards in the school, to keeping ahead of the game so that their schools responded rather than reacted to new external demands, testing them against their own standards and minimizing bureaucratic demands on staff.

- All spoke of the improvement-oriented collaborative school cultures which the heads promoted, and the emphasis upon continuing professional development. Which met both organizational and individual needs?

- All spoke of the time and care which the heads gave enthusiastically to their work: the way in which the heads modeled their values.

- The heads themselves were clearly strategic, reflective practitioners, exercising a range of interpersonal & intrapersonal skills, and able to analyse, evaluate, articulate and communicate with a range of agencies locally and nationally.

**Reference**: Effective School Leadership, Christopher Day & Alma Harris, School of Education, University of Nottingham.

### 2.11 Leadership and Classroom Environment

Significantly, alongside their positive there were also ongoing problems. Heads worked long hours and were enabled to continue to develop partly through the unsung support of external network of colleagues, friends and family. It was however, both their personal values and their abilities to maintain and develop learning and achievement cultures. Whilst at the same time manage ongoing tensions and dilemmas, which were the main features of their success.

1. Leadership versus management.
2. Development versus maintenance.
3. Internal versus change.
4. Autocracy versus autonomy.
5. Personal time versus professional tasks.
6. Personal values versus institutional imperatives.
7. Leadership in small versus large schools.
8. Develop or dismiss,
9. Power with or power over.
10. Subcontracting or mediation.

**Reference:** Effective School Leadership, Christopher Dary & Alma Harris, School of Education, University of Nottingham.

**Teaching Learning System according to Weinstein et al., 2004:**

Diversity of our classrooms, basically stands for cast, class and religion influence causing multicultural competence increasing the difficulties of teachers have with classroom management. Definitions and expectations of appropriate behavior are culturally influenced, and conflicts are likely to occur when teachers and students come from different cultural backgrounds? (Weinstein *et al.*, 2004).

A culturally responsive classroom specially acknowledges the presence of culturally diverse students and the need for these students to find relevant connections among themselves and with the subject matter and the tasks teachers ask them to perform. In such programmes teachers recognize the differing learning styles of their students and develop instructional approaches that will accommodate these styles. (Montgomery, 2001).

So not only do teachers need to be aware and accommodate the learning styles of the different students, but also the classroom management for these students.

Five components essential to culturally responsive classroom management in a Teaching Learning System:

1. Recognition of one’s own either centrism or biases.
2. Knowledge of student’s cultural backgrounds.
3. Understanding of the broader social economic and political context of our educational system.
4. Ability and willingness to use culturally appropriate classroom management strategies.
5. Commitment to building caring classroom communities.

The Dimensions of Multicultural Education – Application in classrooms and similar settings for better academic achievement (Banks, Woolfolk, 1995).

1. **Content Integration:**
   i) Using examples and content from a variety of cultures.
   ii) To illustrate key concepts, principles, generalizations.
   iii) Theories in their subject area or discipline.

2. **An Equity Pedagogy:**
   Matching teaching styles to student learning styles in order to facilitate the academic achievement of students from diverse racial, cultural and social-class groups.

3. **An Empowering School Culture and Social Structure:**
   Group and labeling practices, sports participation, and the interaction of the staff and the students across ethnic and racial lines are some of the components that must be examined to create a school culture that empowers students from all groups.

4. **Prejudice Reduction:**
   The characteristics of student’s attitudes on the basis of socioeconomic status and casteism how they can be modified by teaching.

5. **The Knowledge Construction Process:**
   Helping students to understand how the implicit cultural assumptions within a discipline influence the ways that knowledge is constructed within it.
In order to find out more about the student in one’s classroom there one some questions that a teacher could / should ask to get a much clearer picture of the students in his / her classroom –

- Family background and structure.
- Education.
- Interpersonal relationship styles.
- Discipline.
- Time and space.
- Religion.
- Food.
- Health and hygiene.
- History, traditions and holidays.

According to Sammons, Hillman & Mortimer (1995) the characteristics that help make a school effective are broadly outlined as follows –

1. Focus on teaching and learning.
2. Purposeful teaching.
3. Shared vision and goals.
4. High expectations of all learners.
5. Accountability.
6. Learning Communities.
7. Stimulating and secure learning environment.
8. Professional leadership.

The overarching objective of creating and sustaining effective schools underpins all blueprint strategies and initiatives. This provides all schools in the government school system with a shared purpose. The blueprint reform agenda is a coherent strategy which provides school leadership teams with a range of tools and frame works to make their school effective.
Attributes of Transformational Leadership:

Providing Vision: Behaviour on the part of the leader aimed at identifying new opportunities for his or her school and developing articulating and inspiring others with his/her vision of the future.

Modelling Behaviour: Behaviour on the part of the leader that sets an example for staff members to follow, consistent with the values the leader displays.

Fostering Commitment: Behaviour on the part of the leader aimed at promoting cooperation among staff members and assisting them to work together toward achieving common goals.

Providing Individualized Support: Behaviour on the part of the leader that indicates respect for staff members and concern about their personal feelings and needs.

Providing Intellectual Stimulation: Behaviour on the part of the leader that challenges staff members to re-examine some of their assumptions about their work and rethink how it may be performed.

Establishing High Performance Expectations: Behaviour that demonstrates the leader’s expectations for excellence, quality, and high performance by staff.

Four Main Qualities of an Instructional Leader:

Resource Provider: Behaviour that demonstrates the principal’s effective use of time and resources.

Instructional Provider: Behaviour that demonstrates the principal’s ability to evaluate and reinforce appropriate and effective strategies, instructional provider behaviour.

Communicator: Behaviour that demonstrates the principal’s ability to evaluate and deal effectively with staff, and others.
Managerial Leadership:

Teacher Relations: The principal develops effective working relationships with teachers through appropriate communication skills, sensitivity to needs, appropriate support and reinforcement.

Student relations: The principal develops effective working relationships with students through appropriate communication skills, encouragement, support and high visibility.

Interactive process: The principal develops effective working relationships with teachers through appropriate communication skills, sensitivity to needs, appropriate support and reinforcement.

Student Relations: The principal develops effective working relationships with students through appropriate communication skills, encouragement, support and high visibility.

Interactive Processes: The principal organizes tasks and personnel for the effective day-to-day management of the school, including providing appropriate information to teachers and students, developing appropriate rules and procedures and setting the overall tone for discipline in the school.

Managerial leadership has been experienced in a collaborative approach in an interactive mode in a seminar on Life Science.