MANUAL

OF

ACTIVE LEARNING METHODOLOGIES

IN MIDDLE SCHOOL CLASSROOMS

work in progress
version Feb 2008

a project of

Outreach, The School , Krishnamurti Foundation India
Chennai 600020 www.theschoolkfi.org

MS ALM

based on the Approach and Methodologies

suggested by The School KFI

and

lesson plans developed by

Trainers and Teachers of SSA 2007-08

with the assistance of Teachers of The School KFI

ACKNOWLEDGEMENTS

We gratefully acknowledge

- ShriM.P.Vijaykumar Special Project Director SSA, TN for his persistence, and unstinting support once it was established that this was a direction worth pursuing.
- Smt Latha and Shri Kannappan, Joint Directors SSA TN, for their continuing support
- The unstinting work and involvement of the Block Resource Trainers of SSA in seeing the lesson plans through
- The vision and efforts of Smt Sumitra M. Gautama Coordinator Outreach, who conceived of the workshops for trainers and found a way of translating the experience of The School KFI into a package that could be communciated and whose persistence, coordination and energy made this project possible
- Inputs from colleagues in the school for the workshops with Block Resource Trainers - Smt Sumitra M. Gautama, Smt Padmavathy Sunderrajan, Dr Suchitra Ramakumar, Ramakumar Mahadevan (Gp Capt Retd), Smt Girija Rengarajan, Shri V.Arun, Shri S.N.Sampath, Ms G.Srivalli
- The research over a year into pedagogy and methodologies by Dr Suchitra Ramakumar
- The inputs from Smt Poornima Arun, Teacher Olcott Memorial School
- Unstinting support from colleagues at school who put in long hours and persisted despite major difficulties
- Dr S.Anandalakshmy and Smt Kalyanalakshmy Bhanumurthi for their encouragement and support during the project.
- Members of the Executive Committee of The School for their support and encouragement

Manual Authored and compiled by

G,Gautama

with valuable support from

Dr Suchitra Ramakumar & Sumitra M Gautama

&

Educator Learners

at **The School Krishnamurti Foundation India, Chennai**

www.theschoolkfi.org

In learning,

there is neither the teacher nor the taught;

there is only learning

J.Krishnamurti

(Letters to Schools)

TABLE OF CONTENTS

APPENDICES -

A note from The School KFI

It is with happiness that, as part of the Outreach avenue of our work, we have engaged with SSA to participate in renewing the educational methodologies in the upper primary classes. School education has revealed many difficulties in the existing pattern. It has not mattered whether the schools are private or public. In Tamilnadu Government run schools, with their large reach, have embarked on a determined effort to transform themselves. The bold move towards Mixed Age classrooms prcticing Activity Based Learning in the lower primary classes was a very big step in making education humane and effective. Now it is the upper primary section that is coming up for some active scrutiny and reformation.

At The School, running under the Krishnamurti Foundation India in Chennai, we have an ongoing search for richer, more effective configurations. Over the past three decades, thanks to the atmosphere of dialogue and enquiry that is central to KFI schools, we have been able to rearrange some of the structures and processes of classroom transactions. We have been striving to discover the key processes needed for the teacher to move to a facilitating location and simultaneously, the student to an empowered learning location. The synergies involved are elusive and have tantalized educators for long. This journey has involved small moves, very obvious moves. And then there are some not so obvious moves, too. As a school we have been fortunate to have the energy and vision of many dynamic individuals.

Having already moved to a Mixed Age classroom in the Junior school in 1998, we fashioned a pilot project for a Mixed Age classroom in the middle school in 2006-07. We were fortunate that 29 students from classes 5,6,7 and their parents volunteered for this project. The pilot class was seen as addressing so many needs that we have now extended it to classes in the middle school in 2007-08. We are now working towards sharing the processes in our school, and the thinking involved since we consider this to have been a sound and meaningful step.

The manual is a compilation of the ideas that were put forward as learning methodologies for the 11 day workshop in May 2007. The processes in this manual suggest a ways to transform the teacher away from the centre to a diffused, supportive, watchful presence in the classroom. This manual is aimed to be a good resource for all teachers as an introduction. It can be the basis of on going teacher orientation. It can be a reference manual to be turned to for clarification, discussions and for improved grasp of the core principles. In short this may be used as a manual for teachers and teacher trainers. In this context,

I wish to place on record my sense of deep regard and gratitude for my colleagues at The School who anchored this Workshop, without whose energy, willingness, and dedication to education, this Workshop and the Manual would never have materialized. I consider it one of my lasting privileges to work in an Institution that has as its working philosophy the educational vision of Shri J.Krishnamurti.

It is heartening to see SSA Tamilnadu's determination to search for ways of transforming the upper primary classes into 'active' classrooms. We feel privileged that SSA has considered our work and our processes valuable. It is with great happiness that we share these with SSA in the spirit of co-travellers in the landscape of education. Last but not least I would like to place on record our deep appreciation for Mr M.P.Vijaykumar, Mr. Kannappan and Ms Latha for the immense sense of trust and support we received for conducting these workshops. We hope that this contribution will have some meaning for educators, teacher trainers and students in their journey for a better school education..

G.Gautama
Director, The Chennai Education Centre
Principal The school KFI
Adyar, Chennai 600020

25Jan 2008

CONTENTS

This manual is

dedicated to the children of today and tomorrow

who will have to find their moorings in the world of knowledge,

needing tools of learning
that they can use alone and with others,
tools that can be applied in many contexts,
tools that will help them appreciate and internalise
the wisdom that mankind has come upon
and generate their own knowledge and wisdom

preparing for a future that is likely to be very different from today,

This manual is also dedicated to the SSA TN teachers, trainers and leadership
for the dynamism, readiness and openness
in taking a good idea and working hard to polish it till it shone.

It is a privilege and an honour
to share our educational vision and best practices with TN SSA

and thus
empower thousands of educator-learners and
lakhs of student-learners across the state of Tamil Nadu.

Our inspiration are children
who each come with a message of hope....

educator learners
at
The School, Krishnamurti Foundation India, Chennai

Extracts from

THE BEAUTIFUL TREE

Dharampal

In India humane education for the whole nation, every child, was possible through a system of small multi-age schools across the nation, run on the strength of individual teachers. A detailed account of this is found in the The Beautiful Tree .

The British studied the monitorial system in India and used their understanding to revive their educational system. "The economy with which children are taught to write in the native schools, and the system by which the more advanced scholars are caused to teach the less advanced and at the same time confirm their knowledge is certainly admirable, and well deserved the imitation it has received in England. " (From Collector of Bellary to Board of Revenue in 1823)

> *A group of students were sitting and studying what their teacher has taught them. The teacher is not in sight. The person who is seeking information asks the boys how this works. They inform him that they are going over what the teache rhas taught them. When asked how are they sure they have got it right, the student tells them, " One of us can get it wrong, or two can get it wrong. All of us cannot get it wrong."*

INTRODUCTION

CONTENTS

The term ACTIVE LEARNING is not new. Teachers, schools and institutions of higher learning have searched for ACTIVE LEARNING METHODOLOGIES. It was gratifying to discover that University departments, Colleges of Medicine and Veterinary science, Institutes of Geological sciences and a host of others have also generated much documentation on the subject.

The difficulties of a largely lecture oriented learning environment, the principles and strategies for an active learning environment have been explored in different ways.

The classroom and the given content is taken as the given. This may be considered faulty by many. But the steps into tomorrow have to lead from what exists now. We cannot imagine schools in entirely new circumstances - different building, teachers, books etc. Whatever methodologies we choose have to be viable in the present circumstances. Thus the approaches suggested here are those that may find applicability in many circumstances. Not fighting with what exists, but searching for creative possibilities within the circumstances, yields many interesting insights and possibilities.
This chapter attempts to answer some basic questions -

The information here has been obtained from various sources on the internet and Published material and is meant to give an overview of the prevailing understanding, if not in detail, in broad directional terms.

Let's not confuse the delivery of content with its reaching the student.

Or good explaining with good learning.

It is not surprising that students get good at doing something - by doing it!

ACTIVE LEARNING

to say that it is impossible to learn anything passively

doesn't take us far in understanding 'active learning'

or how it can be applied in the classroom.

WHAT IS ACTIVE LEARNING AND WHY IS IT IMPORTANT?

Research and anecdotal evidence overwhelmingly support the claim that students learn best when they engage with course material and actively participate in their learning. Yet the traditional teaching model has positioned students as passive receptors into which teachers deposit concepts and information. The model has emphasised the delivery of course material and rewarded students adept at reflecting the course content in assessments. The spoils have tended to go to students with good short-term memories and reading skills.

The term "active learning" has been more understood intuitively than defined in commonly accepted terms. As a result many educators say that all learning is active. Are not students actively involved while listening to lectures or presentations in the classroom? Research however, suggests that students **must** do more than just listen: They must read, write, discuss or be engaged in solving problems (Chickering and Gamson 1987),. Further, students must be engaged in such higher-order thinking tasks as analysis, synthesis, and evaluation, to be actively involved. Thus strategies promoting **activities that involve students in doing things** and **thinking about what they are doing** may be called **active learning**.

Bonwell and Eison state "...that students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage

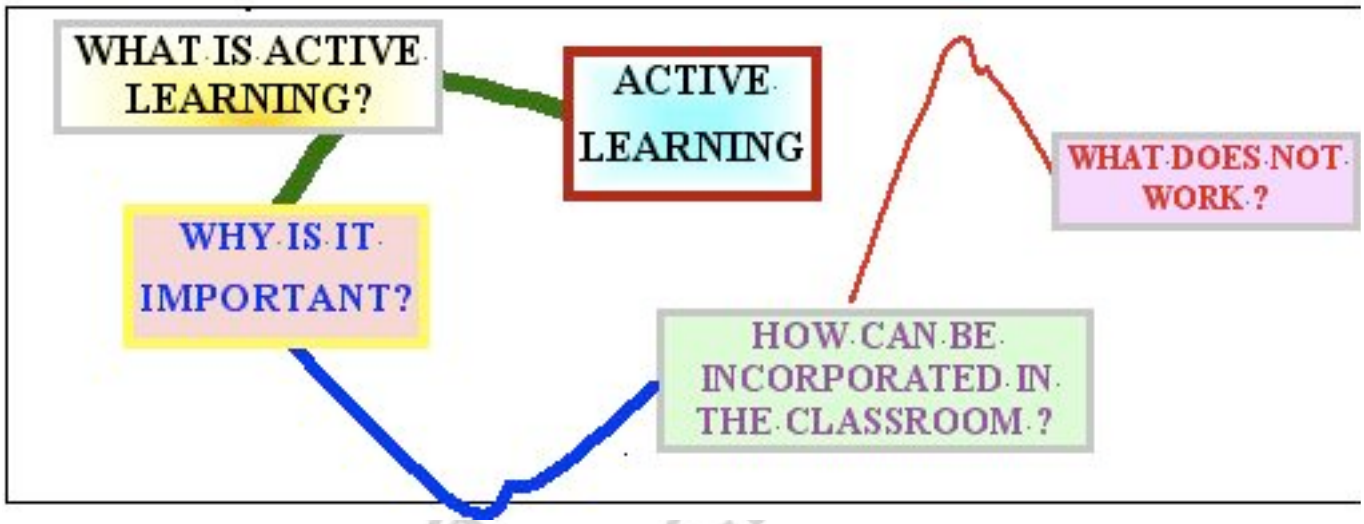
in such higher-order thinking tasks as analysis, synthesis, and evaluation. Within this context, it is proposed that strategies promoting active learning be defined as instructional activities involving students in doing things and thinking about what they are doing."

Use of these techniques in the classroom is vital because of their powerful impact upon students' learning. Studies have shown that students prefer strategies promoting active learning to traditional lectures. Other research studies evaluating students' achievement have demonstrated that many strategies promoting active learning are comparable to lectures in promoting the mastery of content but superior to lectures in promoting the development of students' skills in thinking and writing. Some cognitive research has shown that a large number of individuals have learning styles that are best approached using pedagogical techniques other than lecturing.

While the past decade has seen an explosion of interest among college faculty in 'active learning' and 'cooperative learning', college faculty still teach their classes in the traditional lecture mode. There remains much misunderstanding of and some mistrust of what such a move may imply.

Active learning stands in contrast to "standard" modes of instruction in which teachers do most of the talking and students are passive.

When you have learned something you have changed your brain physically.



There is a consensus among researchers that we do not learn by passively receiving, and then remembering what we are taught. Learning involves actively constructing our own meanings. Actually construction of connections between neurones happens as we invent our own concepts and ideas, connected to what we already know. This "meaning-making" theory of learning is called '**constructivism'**. We must remember that neuronal connections are happening all the time. The question is whether we are aware of the connections being made. Thus active learning seems to involve an inward looking, simultaneous with the outward looking.

Active learning refers to techniques where students do more than simply listen to a lecture. Students are DOING something including discovering, processing, and applying information.

Active learning "derives from two basic assumptions:

(1) that learning is by nature an active endeavour and

(2) that different people learn in different ways"

(Meyers and Jones, 1993).

It is important to remember, however, that lecture does have its place and that active learning cannot happen without content or objectives.

Education once was thought of as a process of transmission (i.e., pouring knowledge into empty vessels), research has made it abundantly clear that the quality of teaching and learning is improved when students have enough **opportunities to clarify, question, apply, and consolidate new knowledge**. Many teaching strategies that can be employed to actively engage students in the learning process. Some of these are group discussions, problem solving, case studies, role plays, journal writing, and structured learning groups. The benefits of using such activities include improved critical thinking skills, increased retention and absorption of new information, increased motivation, and improved interpersonal skills.

However, research also indicates that by reorganising or adapting the ways they present material to students, instructors can create an environment in which knowledge retention is significantly increased; of course, such situations require the cooperation of the students themselves. One of the best methods is to implement so-called *active learning.*

Active learning is *involving students directly and actively in the learning process itself*. This means that instead of simply receiving information verbally and visually, students are receiving **and** participating **and** doing. Thus *active learning* is:

- *engaging students in doing something other than listening to a lecture and taking notes*
- *Students may be involved in talking and listening to one another,*
- *or writing, reading and reflecting individually or in small groups*

WHAT ARE THE ELEMENTS OF **ACTIVE LEARNING METHODOLOGIES** IN THE CLASSROOM?

Active learning methodologies require that the student must find opportunities to meaningfully talk and listen, write, read, and reflect on the content, ideas, issues, and concerns of an academic subject. (Meyers & Jones, 1993). Bonwell and Eison (1991) state that some merits of active learning are:

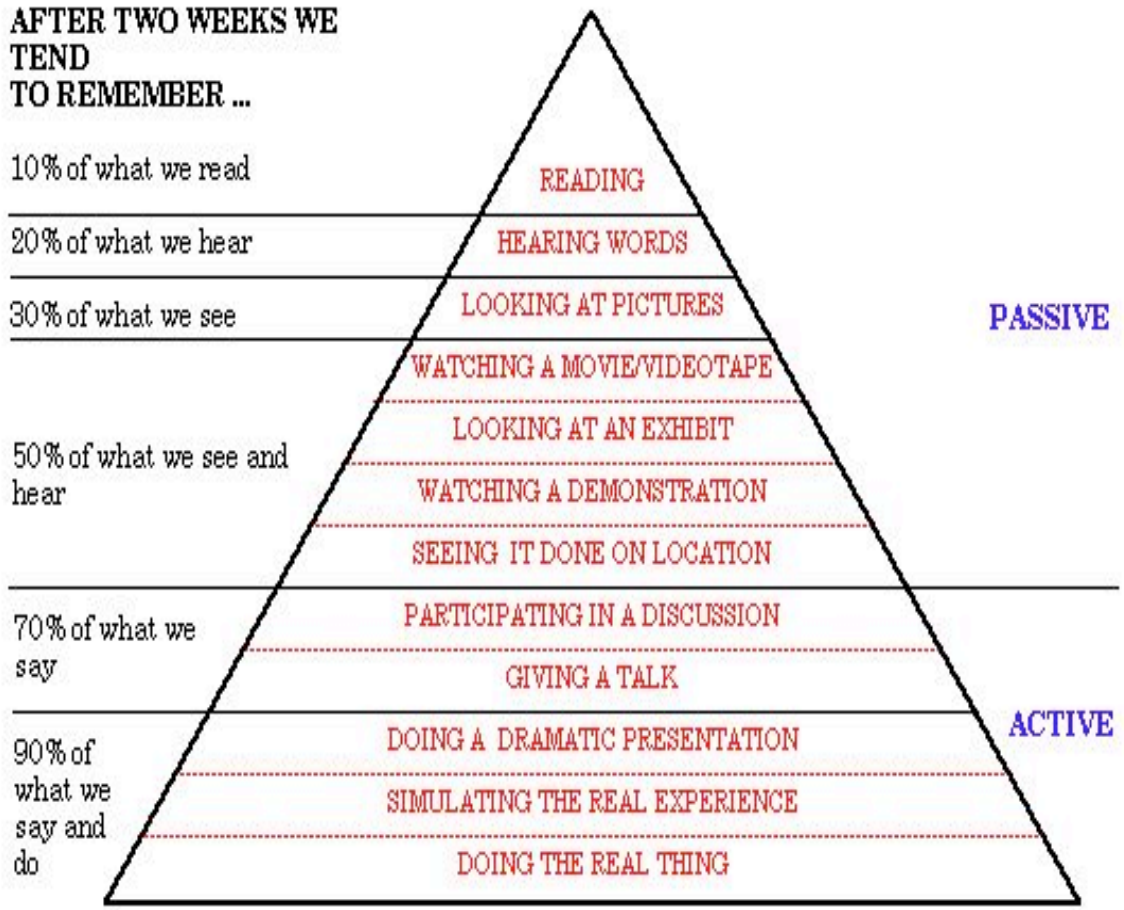
- Students are involved in more than listening,
- less emphasis is placed on transmitting information and
- greater emphasis on developing students' skills,
- students are involved in higher-order thinking (analysis, synthesis, evaluation),
- students are engaged in activities (e.g., reading discussing, writing), and
- greater emphasis is placed on students' exploration of their own attitudes and values.

"Active learning shifts the focus from the teacher to the student and from delivery of subject content by teacher to active engagement with the material by the student. Through appropriate inputs from the teacher, students learn and practice how to apprehend knowledge and use them meaningfully."

Concerned about the explosion of information available in medical texts and the perceived need by lecturers that they must cover even more material in the limited time available, the authors studied the effect of information density on student retention. They prepared three different lectures on the same subject matter. The lectures were presented to a total of 123 students randomly distributed into three groups, which showed no significant difference in cumulative GPA's. Finally students were given a pre-test that showed no significant difference in their knowledge base, a test (1) immediately after the lecture, and an unannounced test (2) 15 days later.

Statistical results clearly showed that students in this study learned and retained lecture information better when the density of new material was low. The implication is that ***the amount of new information that students can learn in a given time is limited and that the purpose is defeated when the limit is exceeded***. [Who among us has not gone over the allotted class time by a minute or two to provide "just one more thing"?] This study suggests, however, that we would be better off presenting only the basic material necessary to achieve our learning objectives: approximately only 50 percent of the material presented in any lecture should be new. The rest of class time should be devoted to material or activities designed to reinforce the material in students' minds.

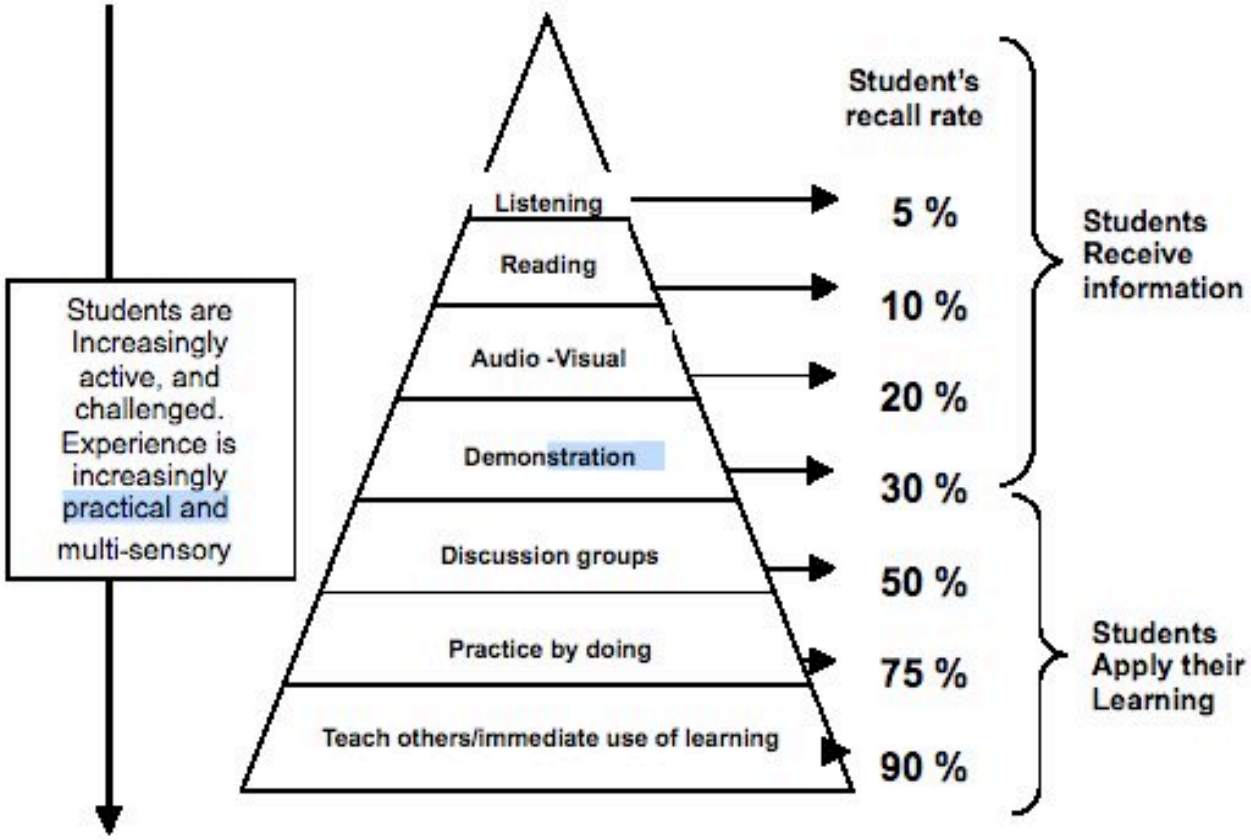
This study is significant since one of the chief barriers always presented by faculty to the acceptance of active learning is that "there is simply too much content to cover." Apparently *less new content* and more time reinforcing the facts and concepts presented [which could include active learning] will lead to *greater* student learning.



Adapted from: Edgar Dale *Audio-Visual Methods in Teaching*, Holt, Rinehart and Winston.

The Cone of Learning

The Learning Pyramid: The recall rate of different teaching strategies. The National Training Laboratories (US)



Consider these statistics reported by Meyers and Jones (1993).

- Students are **not attentive** to what is being said in a lecture 40% of the time.
- Students **retain 70% of the information in the first ten minutes** of a lecture but only 20% in the last ten minutes.
- Four months after taking an introductory psychology course, **students know only 8% more than students who had never taken the course**

Passive Learning[1]	Active Learning
• *"students are assumed to have minds like empty vessels or like sponges to befilled with knowledge"*	• *The educator strives to create "a learning environment in which the student can learn to restructure the new information and their prior knowledge into new knowledge about the content and to practice using it"*

• "traditional class": lecturing instructor verbalising information to passive note-taking students
• **students remember only approx. 10%of the content of each class session**
• mostly verbal lectures
  • instructor is "verbal" textbook
  • instructor reads definitions to the class
• the educator explains concepts, principles and methods
• visual aids, demonstrations, etc. are add-ons to the main lecture mode
• student is an "empty" vessel
  • to be filled with knowledge
  • a passive "tape recorder"
• on exams, students regurgitate what the instructor tells them
	• student is assumed to be an intelligent participant in knowledge creation who
	• can look up definitions and vocabulary before and after class independently
	• can develop skills in constructing and using knowledge with the educator's guidance, alone and also with others in small and large groups
	• the educator may explain concepts, principles and methods
	• visual aids, demonstrations, etc., integrated into class presentations
	• **students have the opportunity to remember up to 50% of the content of each class session**
	• "cares deeply about own education"
	• "learn to monitor and discuss their own learning"
	• collaborate with "other students to discover and construct a framework of knowledge that can be applied to new situations

• **The educator** • a general expectation he / she will have total mastery of the discipline and that any such expert can teach.	• **The educator** • is current in knowledge of content and attempts to master the content • develops, learns and employs pedagogical content knowledge (has thought about HOW to teach each topic) • learns how to teach • reflects more on teaching • sets explicit norms for learning and classroom environment • facilitates and guides (does not provide all answers) • is a facilitator (not verbal textbook or answer giver) • "mentoring means **turning students into lifelong** learners"

[1] The Two Paradigms of Education and the Peer Review of Teaching, by Dean A. McManus

YOU KNOW YOU ARE TEACHING FOR UNDERSTANDING WHEN ...

The learning is generative:

- Instruction is focused around a few central topics.
- The topics are significant for you and your students.
- Students are actively engaged in their work.
- An atmosphere of genuine inquiry pervades the classroom.

The understanding goals are clear and explicit:

- Overarching goals or through lines are explicitly stated and posted in the classroom.
- Goals for particular units are closely related to overarching goals.
- You and your students regularly discuss and reflect on unit-long and overarching goals to help students make the connection between what they are doing and why they are doing it.

Students are working on performances of understanding almost constantly:

- Students work actively in varied formats: pursuing projects and reflecting alone, collaborating and conferencing in small groups, and interacting in whole groups.
- Students can explain why they are doing what they are doing.
- You spend time coaching, conferencing, leading, participating in discussions, and sometimes lecturing.
- Students are thinking and making that thinking visible in the contexts of performances of understanding that challenge their misconceptions, stereotypes, and rigid thinking.
- The room is filled with student work, both finished and in process.
- Responsibility and authority for the work is shared between you and your students.

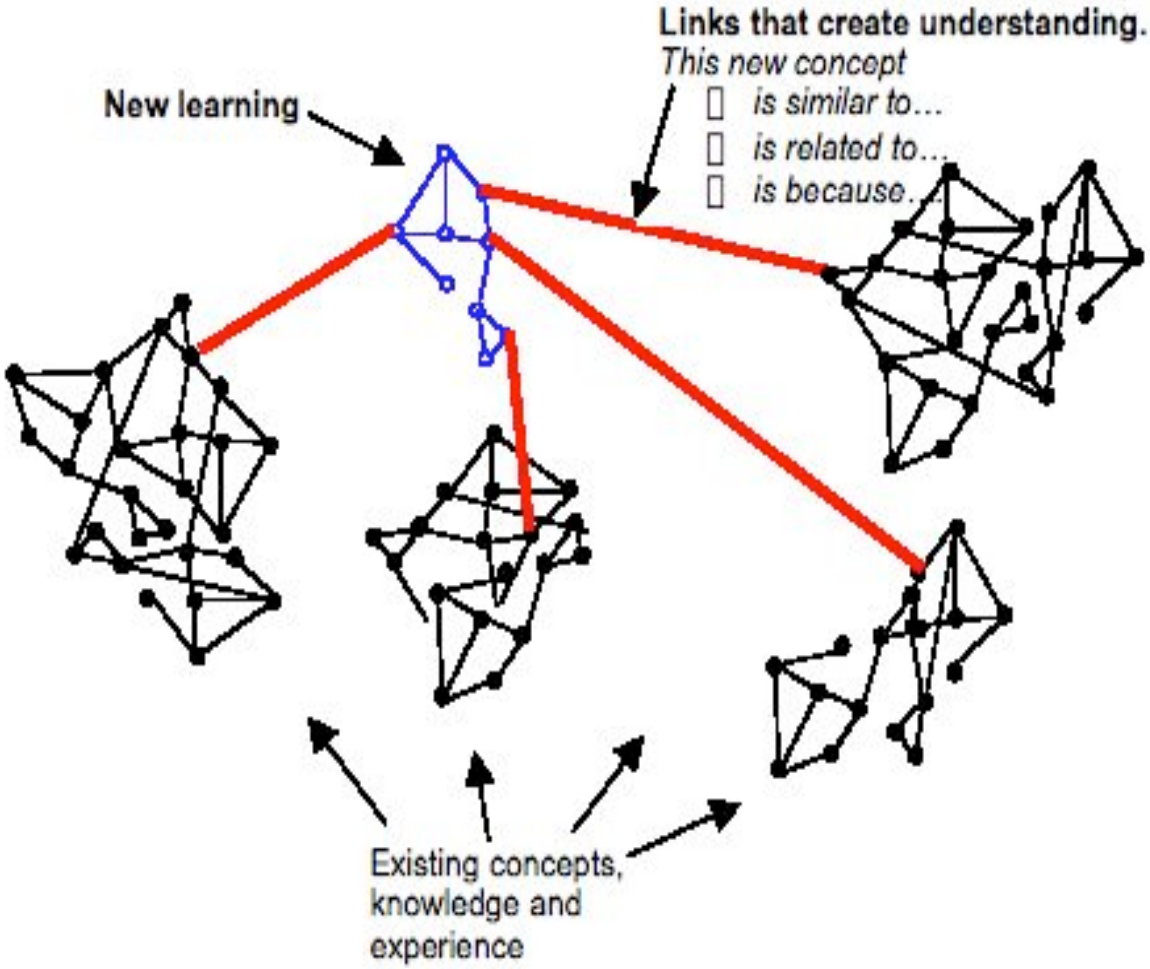
The assessment is ongoing:

- Students engage in cycles of drafting, reflecting, critiquing, responding to, and revising their own and others' work.
- You and your students share responsibility for assessment.
- Everyone assesses work according to stated criteria and standards for quality, which are closely related to the understanding goals.
- Assessment is often casual, conversational, and spontaneous; periodically it is more formal, recorded, and planned.
- Responsibility and authority for the work is shared between you and your students.

from ALPS (Active Learning Practices for Schools)
at http://learnweb.harvard.edu/alps

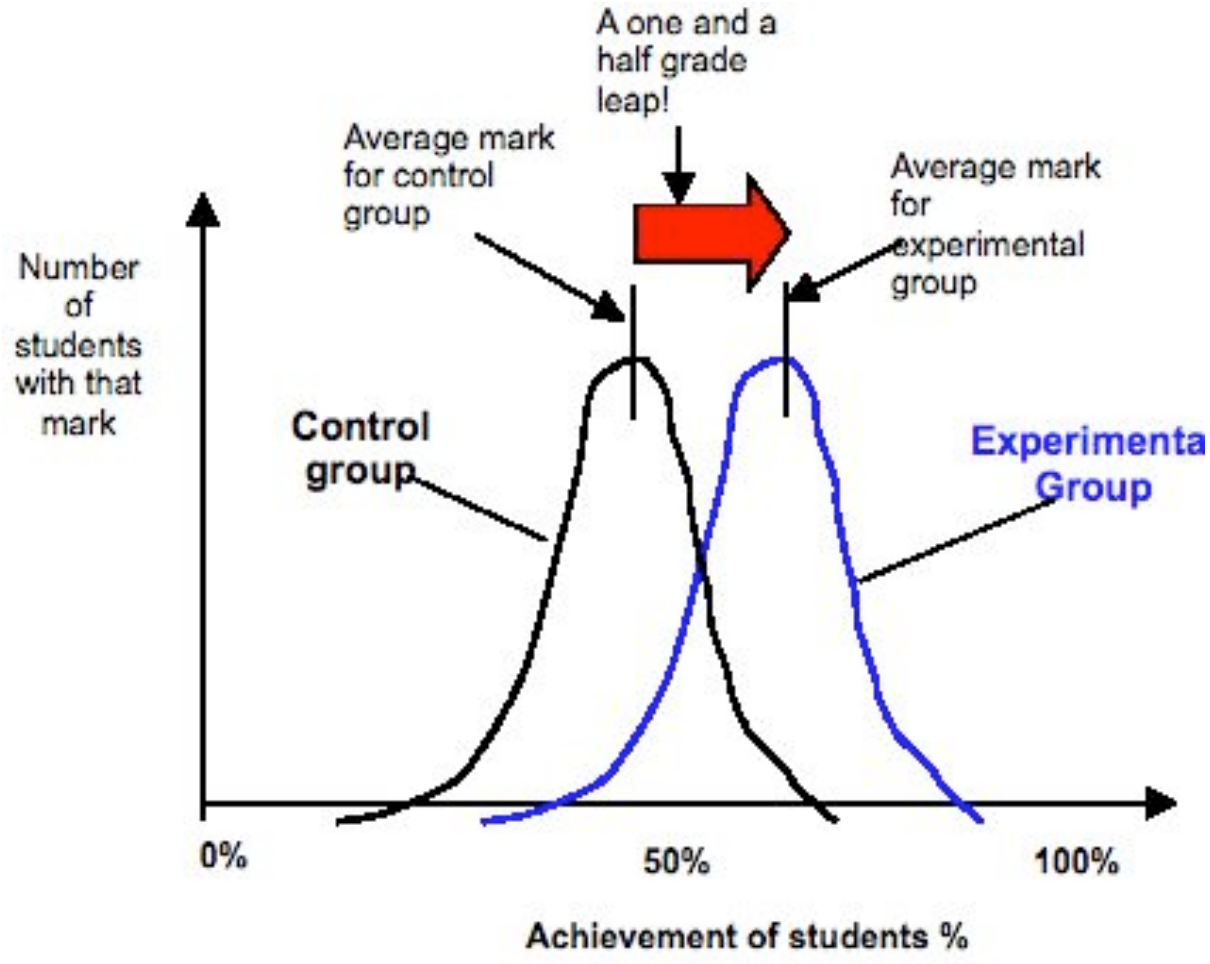
Well if Active Learning works, why don't more teachers use it?

- We tend to teach the way we were taught ourselves, rather than in the way that works best.
- We know too much, and rather enjoy explaining. So when one sets activities, listen carefully to learners as they work, this can be even more enjoyable and less hard work than explaining, and the feedback is very informative.



Constructivism

- Learning is a 'meaning-making' process
- What happens in a student's brain when a question is asked? He or she is required to recall something that has been taught. There is a travelling backward to a part of the brain where the information is stored, encoded in a 'construct' which is a network of interconnected brain cells (neurones). The learner then decodes this construct to answer the question. Everything we know is in the form of these constructs, all of which have evolved.
- Any activity will not do. The search is to **to find activities that require the learner to make constructs of important concepts, and thus connections between these constructs**. This however poses a special problem. It is difficult to predict the associations that people make and also to know their evocations. Thus while the above can be a broad intention, it is more a guiding principle than a deterministic rule. For example, to teach the idea of gravity a falling ball is a good example. However, it is quite possible that one may learn this from the swinging of a branch.



Active Learning significantly adds to achievement (a grade and a half). Professor John Hattie has used careful statistical methods to average the findings of the 253 most rigourous studies on active learning. His findings show that a student in the experimental group instructed using active learning, will do significantly better, on an average, than if had been placed in the control group that is being taught through lectures.

- The groups taught with active learning methods were taught for the same amount of time as the control group.
- While the experimental group was engaged in the active learning methods, the control group was receiving more content and fuller explanations from their teacher. But the control group learned less.
- Many teachers say active learning would be great 'if they had the time'. But research shows that if you make the time for effective active learning by doing less didactic teaching, then your students will do better.
- It may seem strange not to be able to say everything you know about the topic you are teaching, but it won't help if you do. You know too much!
- Active learning works best at every academic level. Graham Gibbs, in a large study,identified the university courses which produced the highest quality learning (deep learning) and the highest achievement. Researchers then visited these courses to discover how they were taught. The courses were found to use active learning, on tasks that the students found interesting, with plenty of student interaction. The teaching was also well structured so that new learning was built on old.

- Peter Westwood, summarising research on how best to teach students with learning difficulties argued for **highly structured, intensive, well directed, active learning methods.**

WHAT ARE THE DIFFICULTIES ?

General Inhibitors. choices we make but unaware we make them....

It is important to realise that students sitting in a group and studying together, or group projects in which one or two students do all the work, do not constitute active nor collaborative learning.

a. **Front to back seating arrangements:** It is hard to talk to the back of someone else's head. Front to back seating arrangements discourage students from talking among themselves but focus on the instructor.

b. **Not obtaining periodic student feedback on how a course is progressing.**

- Are students getting out of the course what they want?
- Are the classroom procedures and methods used well?
- Are there some things that you are doing which students don't like (for example, lecture organisation, clarity of presentations, unfriendly manner)?

Information on these factors not only helps make the classroom atmosphere better but it also creates an atmosphere where students feel the instructor is interested in what they have to say. This has a tendency to transfer into content areas as well.

c. **Compulsory attendance.** Students who feel coerced into attending every session are less likely to want to participate. (This may apply more to a college or university.)

d. **An overemphasis on marks and grading**. Constantly stressing the importance of material for the midterm or final, how important a good grade in your course is, and how much you appreciate good students will lead to a lack of involvement. Students are less likely to be involved when the name of the game is to get a grade and not learning something that might be of value to them.

e. **Encouraging exclusive dialogue with the instructor and not between or among students.** This fosters a lack of involvement since students must compete with each other for the "king's ear." This is more like convincing or arguing with the instructor over a point but it is hardly like a dialogue among peers. Most students lose interest in this process.

f. **The non-involvement cycle - a self fulfilling prophecy of the vicious cycle of .** All of the above create an atmosphere where students don't get involved, which leads the instructor to assume they are apathetic and uninterested. The instructor continues to treat them in ways that lead to greater apathy. A self-fulfilling prophecy begins to emerge.

ACTIVE LEARNING needs a structure and an atmosphere...

Best structures for active learning

- where there is no competition
- where seating favours discussion and peer learning
- where it is explicit that class space is for learning by 'doing some things' and
- the 'doing' is defined such that it can be seen as meaningful and applied in other contexts
- Mixed age environments are also a possibility

Some assumptions have to be shifted. We need to create learning structures in which

- **engagement** is more important than demonstrable, measurable results
- **well being** is more important than performance
- **class structure** will not permit regression to the older mode...
- **initiative** is welcome and hierarchy is not

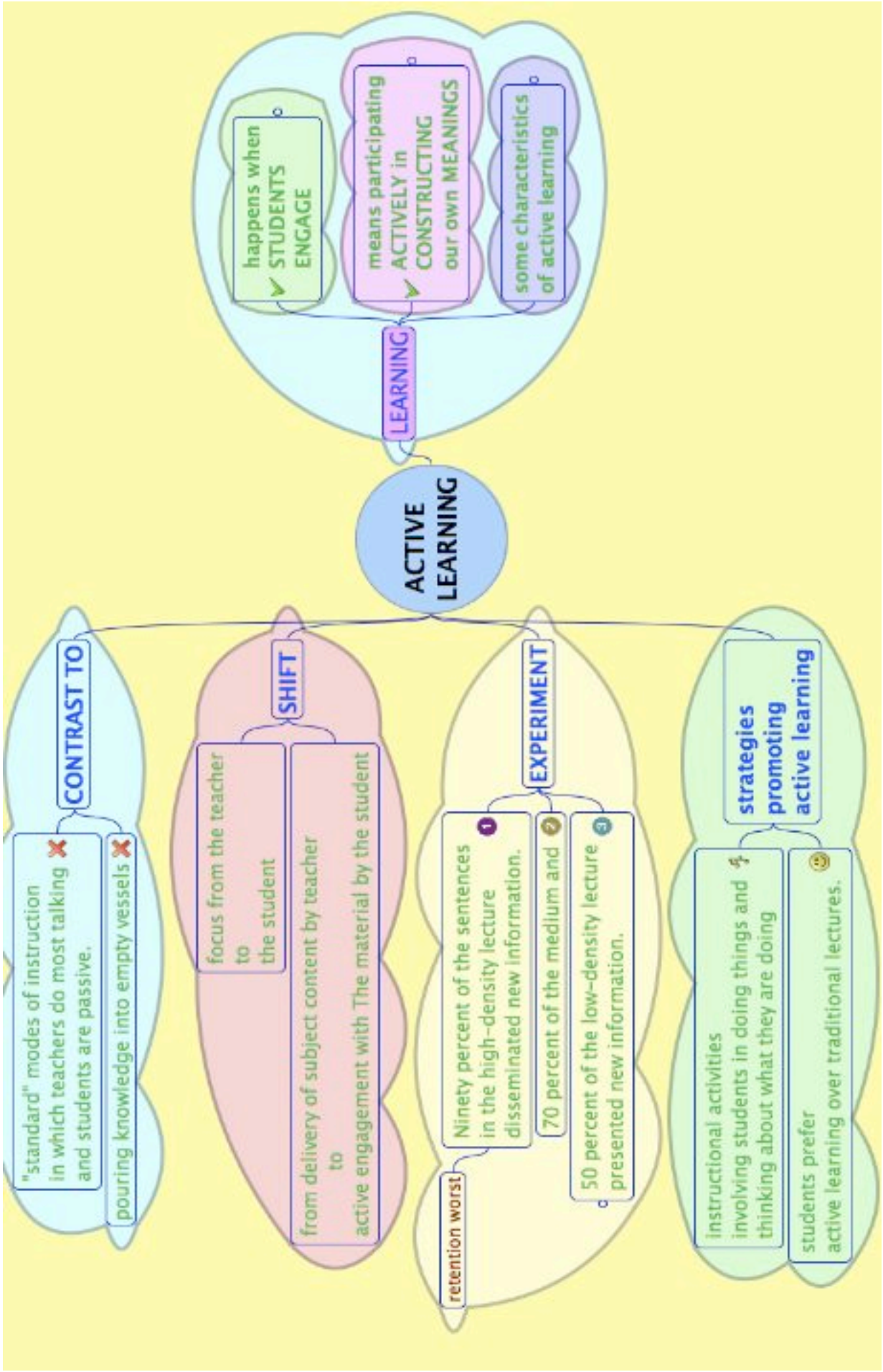
For the purpose of this manual, ALM processes are those that are considered suitable for learning in many situations, including the covering of the given academic content at the level of grades 6,7 and 8. The available literature, not surprisingly, points to very similar processes, be it in the school or in college education.

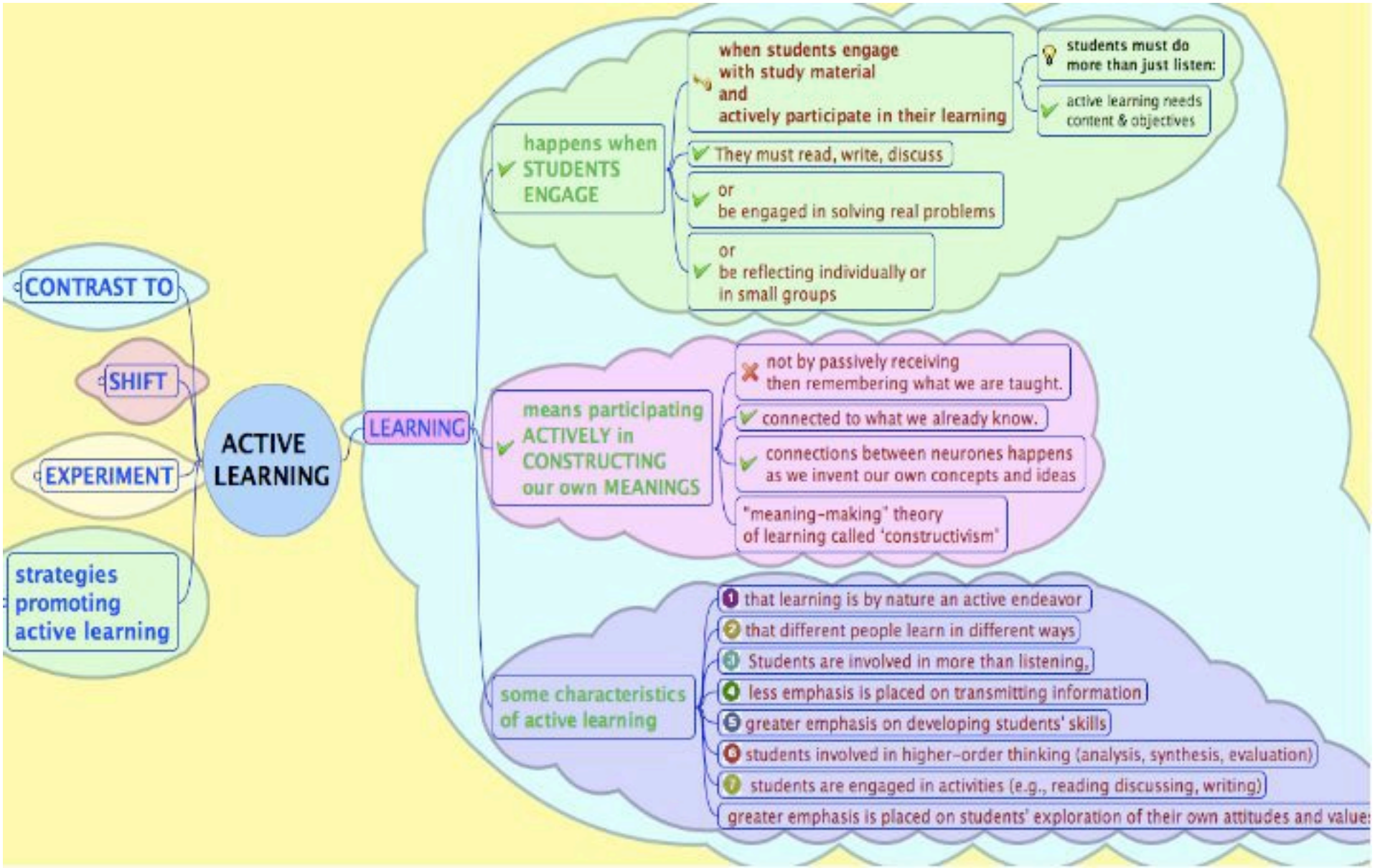
A word for the educator

While choosing modes of instruction, it is good to bear in mind that student learning depends primarily on **what the students do rather than what the teacher does**. Thus a thoughtful approach to effective teaching requires that educators grow aware of the many strategies promoting active learning. These have been successfully used across many disciplines.

Further, each educator needs to reflect on some questions:

- Am I willing to experiment with alternative approaches to instruction?
- Are techniques of active and cooperative learning alternatives to lectures, or are they enhancements of lectures?.

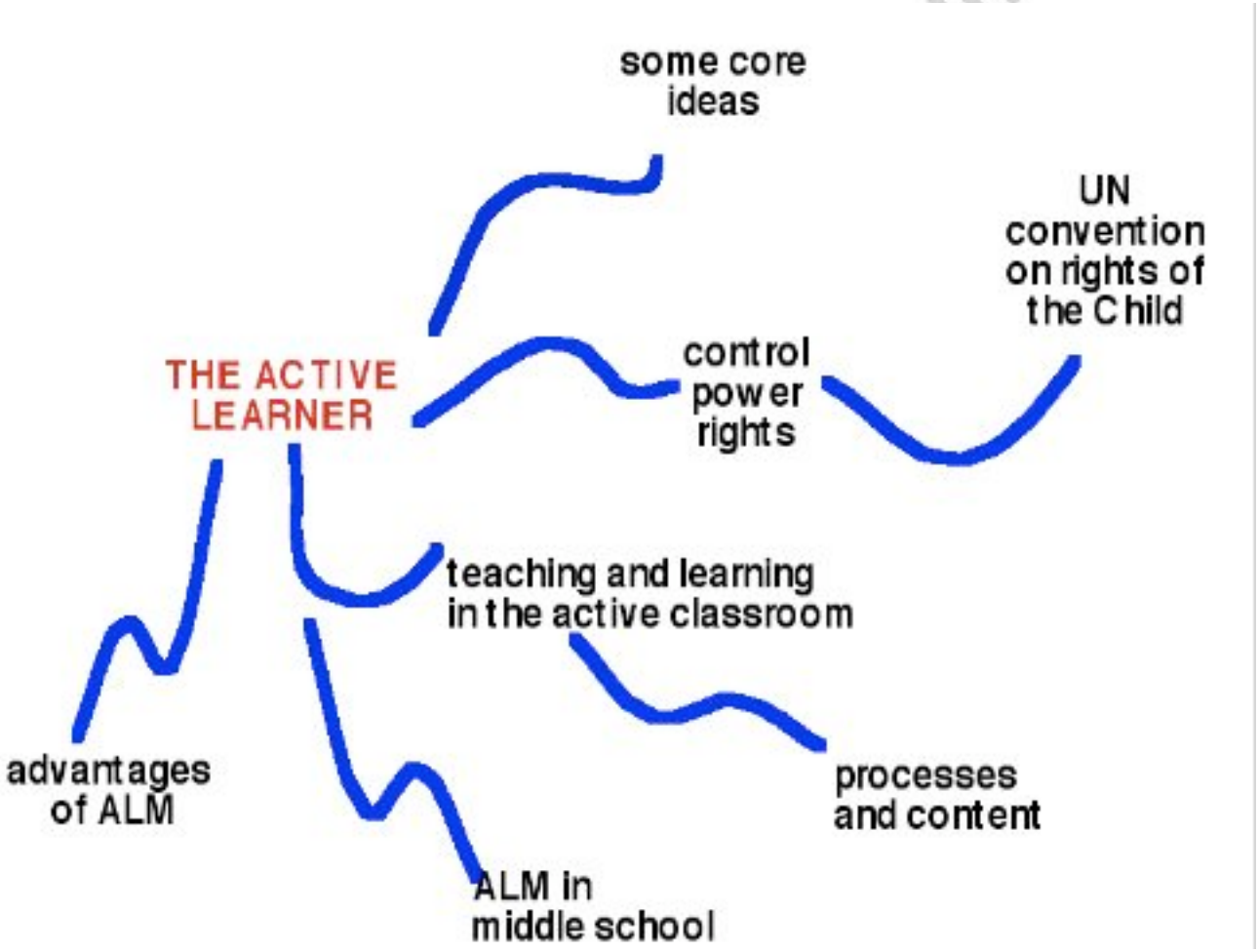

ACTIVE LEARNING
LEARNING
happens when STUDENTS ENGAGE
means participating ACTIVELY in CONSTRUCTING our own MEANINGS
some characteristics of active learning
CONTRAST TO
"standard" modes of instruction in which teachers do most talking and students are passive.
pouring knowledge into empty vessels
SHIFT
focus from the teacher to the student
from delivery of subject content by teacher to active engagement with The material by the student
EXPERIMENT
Ninety percent of the sentences in the high-density lecture disseminated new information.
70 percent of the medium and
50 percent of the low-density lecture presented new information.
retention worst
strategies promoting active learning
instructional activities involving students in doing things and thinking about what they are doing
students prefer active learning over traditional lectures.


ACTIVE LEARNING
CONTRAST TO
SHIFT
EXPERIMENT
strategies promoting active learning
LEARNING
happens when STUDENTS ENGAGE
when students engage with study material and actively participate in their learning
students must do more than just listen:
active learning needs content & objectives
They must read, write, discuss
or be engaged in solving real problems
or be reflecting individually or in small groups
means participating ACTIVELY in CONSTRUCTING our own MEANINGS
not by passively receiving then remembering what we are taught.
connected to what we already know.
connections between neurones happens as we invent our own concepts and ideas
"meaning-making" theory of learning called 'constructivism"
some characteristics of active learning
1 that learning is by nature an active endeavor
2 that different people learn in different ways
3 Students are involved in more than listening,
4 less emphasis is placed on transmitting information
5 greater emphasis on developing students' skills
6 students involved in higher-order thinking (analysis, synthesis, evaluation)
7 students are engaged in activities (e.g., reading discussing, writing)
greater emphasis is placed on students' exploration of their own attitudes and value

The history of education is both long and short.

In 1994, Dieter Lenzen, president of the Freie Universität Berlin, said

"education began either millions of years ago or at the end of 1770".



This chapter sets forth the philosophy and working of MS-ALM, Middle school -Active Learning Methodologies, a template for a teaching learning process that embodies a philosophy.

What is the operative philosophy of the programme?

MS-ALM seeks to build a link between knowledge and empowerment,
to equip each student with the ability
to think, to apply and to discover.

It is the right of all children, in the schooling system and out of it, to acquire skills to navigate through life effectively. School education often falls short.

MS-ALM may be seen as the bridge that aligns the processes of school education to this basic requirement. The direction and details conceptualised in this manual can be applied in any learning setting, regardless of class, level or background. The exposure to these methodologies in a regular and sustained way holds the potential for the student to discover that he / she is part of one world and one future.

MS-ALM seeks to build a link between knowledge and empowerment and seeks to equip each student with the ability to think, to apply and to discover.

THE WARP AND THE WEFT - some core ideas.

Learning to live safely and in good health, to think clearly, to understand one's feelings, to act resourcefully, to live and work with others with respect and to take responsibility for our choices are core elements of empowered living.

I. The processes of school needs to prepare the **life long learner,** not just the learner in school.
II. The processes of teaching-learning are important - often more so than the content.
    A. Teaching does not equate with learning
    B. One learns to play the cello by playing the cello. (John Holt)
III. The main thrust of the teaching learning process is to empower the learner, in academics and in life, simultaneously.
IV. The student has the right to question, to be listened to, to express thoughts, feelings and opinions. The teaching learning process must respect these rights
V. The teaching learning processes must permit beginning where the learner is, and using the skills and capacities the learner has, build on existing knowledge. There is no other place to start – from the known to the unknown.
VI. Knowledge is socially constructed and the student must participate in knowledge building - sharing of different perspectives and listening sharpens thinking and builds stamina.
VII. When a student actively constructs knowledge, then he internalises and utilises it better than when he is a passive recipient.
VIII. Learning a few things well and in depth is more significant than a scattered understanding of many things, particularly in the early stages of learning to learn
IX. Every learner must be helped to develop his/her own wisdom (there is no other wisdom that we live by)

The MS-ALM is a template that embodies the above principles in its methodology. As we understand the methodology in its working we will return to see these main thrusts, how they are embedded.

Location of a Learner - What does it mean to learn?

Learning is the ability to be aware of, work with, and change our patterns of thinking, feeling and action, be they in the domain of academics, oneself or relationship.

Control and Power

In the classroom, control and power has rested with the teacher and the educational systems - the boards of education, examination etc. This has built an enormous passivity. The student has had no choice over what he will study or how. Further, the student receives validation only for academic prowess, disregarding any skill other than the academic. All else is considered subsidiary. The Child Rights approach has attempted to question this hegemony.

According to the UN Convention on the Rights of the Child

Article 12

States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child.

Article 13

The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice.

Article 14

States Parties shall respect the right of the child to freedom of thought, conscience and religion.

The student has the right to seek information, to question, to be listened to, to expression of thoughts, questions, feelings and opinions. The teaching learning process must respect these rights. These rights need to be embedded in the classroom and inform the pedagogy.

The domain of academic learning emphasises certain aspects while the domain of learning about one's emotions emphasises others - the essential processes of learning-alert observation, listening, questioning, change remain. the circuits of cognition and meta-cognition in terms of brain physiology remain.

Teaching and Learning in an active Classroom

In a learning space, students have a right to learn in an atmosphere free from fear. Often teaching and learning are linked logically in the educator's mind. The two processes are not linearly linked. Good teaching does not automatically lead to good learning. This is evidenced by the fact of disinterested, disengaged children in classrooms.

- No direct transferences are possible. Learning is a process and builds on prior knowledge and learning experiences. The sensible curriculum must start with the student - student engagement with the content is the crucial first step.
- The teacher is a facilitator in the process who will widen, deepen and contextualize the learning.
- The classroom is a microcosm of the world. The learner must find opportunities to participate in constructing knowledge. For this process to be effective it must have relevance not only in the classroom but also in the larger world.

• A child centred classroom shifts the emphasis from teaching to learning.

Processes and Content

Why are processes important even more so than the content?
Clearly because of the anchoring of an individual as a **lifelong learner**. A learner is oriented to learn in any context, be it the textbook, in relationship to the world and people .

- How does the bird fly? Why are leaves green?
- What am I feeling now? Why am I so angry?

Learning to learn is better emphasised in learning a few things than in aiming for a spread, particularly in the early stages. Once the student is firmly established as a learner- able to realistically self assess, develop a sense of what is good thinking, understand what is a good piece of work, become aware of his own learning process, then mastery of any content is child's play.

Since academic learning builds on prior knowledge and experience, starting where the learner is, is crucial. Where else can we start anyway? The classroom methodology must allow for different levels of learners within the same class.

It Takes A Village to Grow a Child

It has been said that knowledge is socially constructed. The discussion space of the classroom is its living hearth. It is the space of sharing and dialogue – where the basic norms of talking together are learnt and where feelings and ideas are shared. Discussion helps clarify, it builds an ability to listen and appreciate different points of view, an ability to speak boldly, to appreciate nuances. Discussion, exchanges, are as an essential part of a learning process.

THE SCOPE OF MS-ALM

The aim of MS-ALM is empowerment of the learner in such a way that he or she is confident and able to to function in many contexts. In the middle school years -(classes 6-8) such learning can be blended into the curriculum of any school easily. It includes:

- learning to affirm oneself and one's learning style –The MS-ALM classroom
- learning to be healthy and safe ---Biology curriculum enrichment
- learning to think skilfully, recognise and deal with one's feelings and be resourceful in a variety of situations - Learning for Life Units
- learning to live in social systems - living and working together with other people, good citizenship skills, being able to participate in the debate of our times--- (Civics curriculum enrichment)
- learning to live in and interact with a physical environment – finding environmentally viable responses in terms of lifestyle and choices (Environmental Education and Biology curriculum enrichment)

Above all the **Active Learning Skills** will help students negotiate the world of knowledge with skill and enthusiasm, confident of their own abilities and opening widening newer avenues to learning.

3. UNIQUE ADVANTAGES OF THE ACTIVE LEARNING METHODOLOGIES

- Active engagement on the child's part; (Learn to play the cello by playing it-John Holt)
- Provides a template for learning, and learning to learn
- The child is not subjected to endless passivity
- Applicable in large classrooms and schools with few teachers
- Requires no special aids or special equipment
- Children can be resources for each other through paired and group activity
- The teacher can devote some time to children who need special help
- Allow the child to check her/his work against the teacher's and thus save the teacher endless corrections while ensuring accuracy in child's learning
- Works at child friendly and realistic assessment formats
- The beauty of the process is its simplicity
- Allows room for all children's voices to be heard through discussions and presentations

SSA – MS ALM
PHILOSOPHICAL BASIS
TOWARDS
AN ENGAGED EDUCATION
FOR EVERY CHILD
ACTIVE, NOT PASSIVE
SOME RIGHTS OF EACH CHILD
to begin from where he or she is...
to ask questions
to be heard and listened to
opportunity to speak in the classroom
all children have a right to feel safe
someone who will listen to complaints
someone whom they can call
someone who can make their life better
to be safe physically & emotionally
school and class must be FREE OF FEAR
fear inhibits learning and destroys motivation
NO
corporal punishment
bullying
humiliation
intimidation
IN SCHOOL & CLASSROOM
INVITATION & OPPORTUNITY TO PARTICIPATE
by speaking
by contributing
by speaking
INVITATION & OPPORTUNITY TO ENGAGE
by reading
by writing
by speaking
by listening
by drawing
by questioning
MODES OF ENGAGEMENT IN THE CLASSROOM
individual work
reading
writing
drawing
questioning
taking initiative
small group work
discussing
working together
thinking together
answering questions
whole class
asking questions
listening to teacher's inputs
moving ahead

The main thrust of the MS - ALM is **to support the sure footed emergence of the LIFE LONG LEARNER**, to unleash the learner.

School is the first formal learning environment a child encounters. For this experience to be meaningful the flavour of this experience is particularly significant. The accelerating pace of change has made sure that each of us has to learn about many things. The work environment requires an openness to use new systems, new machines, new arrangements. The only thing that is certain is that most things one is doing now will undergo a change. And learning new processes, new adaptations, new ways of doing something will be needed at each turn. This involves a sharper definition of the objectives and processes of "education".

One may attempt a definition by saying that School education must **INCLUDE** the

- opportunity to learn the basic skills of reading, writing, listening, communicating, thinking
- opportunity to be with peers and adults
- opportunity to be exposed to knowledge considered important by society and the environment
- opportunity to learn and apply skills to grasp and understand knowledge functionally, and in depth
- opportunity to understand one's rights as a child and an adult member of society
- opportunity to look beyond what is offered

School education must like wise **EXCLUDE**

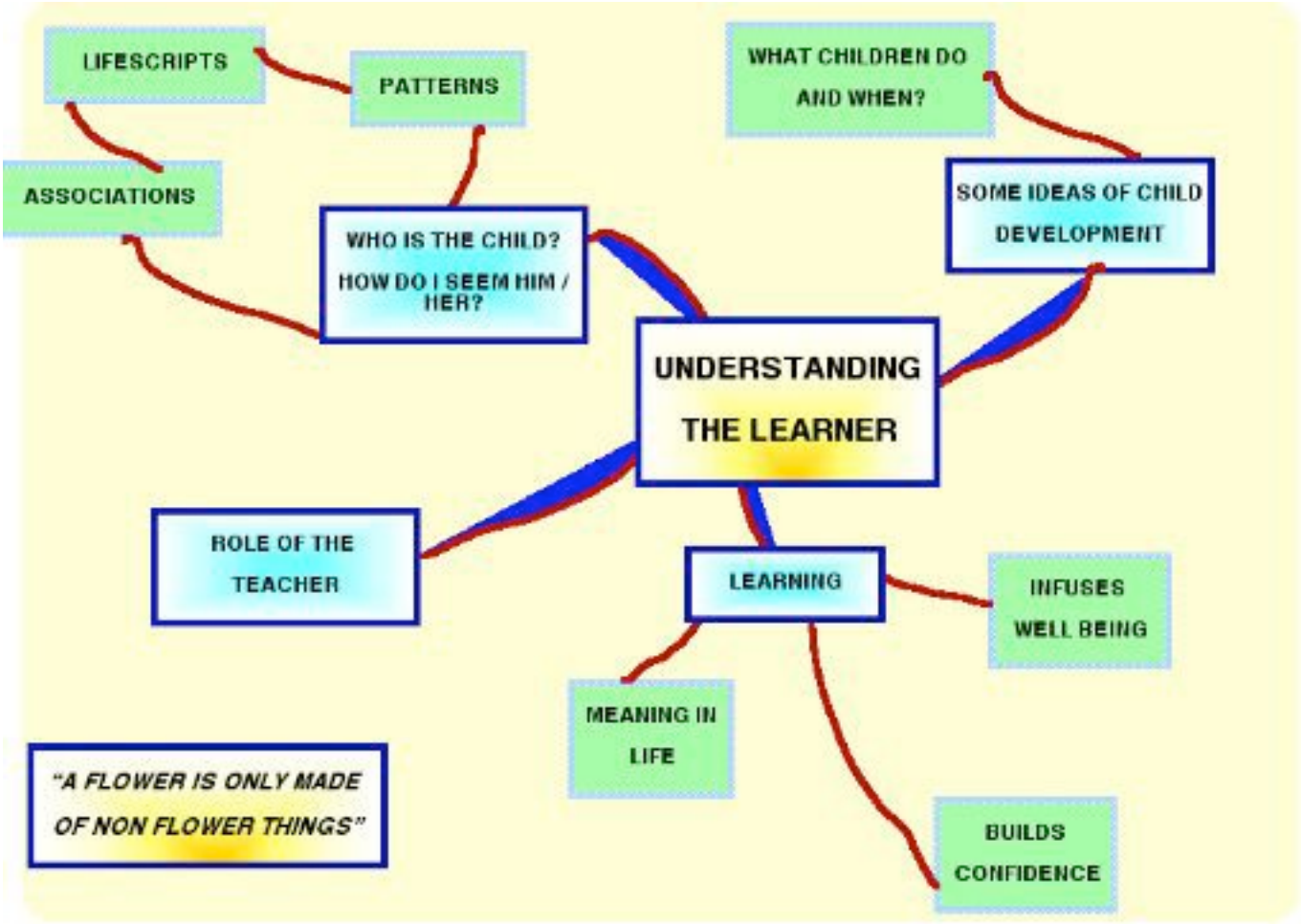
- fear and coercion to achieve ends defined by teacher or parents or society
- putting child in unsafe situations under adult supervision
- doing damage to child's confidence through the atmosphere at school of ridicule, punishment, failure or communication of incapacity

*"A flower is **only** made up of non-flower things" Thich nat Han.*

Life is made of carbon, hydrogen, oxygen and other elements that are considered to be "non-life". Yet life emerges in a complex way with these elements. It may be pertinent to ask if academics, similarly, is made up of only of non-academic things?

- Does the child need to be fragmented into different parts, academic, social, cultural, personal?
- Is the persona of the child, his thoughts, feelings, social circumstances, involved in his academic learning?
- Is the domain of the learner only in academics?
- Is learning in life different from learning in academics?
- Does the phrase "active learning methodology" apply for a life based education?
- Is the persona of the child, his thoughts, feelings, social circumstances, involved in his academic learning?

This is the ground of exploration in this chapter.



Being located as a "learner" in life is a source of "well being for oneself and others". Being a learner in life **brings about individual well-being** as it brings **proficiency in academics.**

What does it mean to be a learner?

As mentioned earlier, we are embedded in the repetitive patterns of thoughts and feelings. Learning is the ability to be aware of and change our patterns of thinking, feeling and action. The learning can be in the domain of academics, understanding oneself or relationships with the world around.

Learning is difficult to contain in the realm of mere academics. Learning naturally is one whole movement that naturally includes academics, oneself and relationships. ALM processes are designed to attend to:

- learning in academics
- learning about oneself and
- learning about relationship

When we talk of learning what do we mean in terms of the brain?

The brain functions through ASSOCIATION. There are billions of complex nerve cells and circuits of association formed in the brain. In the early growing years, the associations are formed for the basic processes of life - feeding, language (associating the object tree with the word tree), walking, performing coordinated movements etc. In the later growing years, the associations include abstraction, complex problem solving etc. A movement happens expanding the concrete feel of the world to include abstraction.

When we experience something we are expanding or modifying our associations. If I already know the names of some elements then when I am exposed to the periodic table of elements, I expand and modify my associations in the domain of the elements.

This process of learning is similar with learning about myself or learning about others or relationships.

One forms a concept of self through various associations. These are based on one's observations of oneself and ideas that one has about oneself. More inputs come from the ideas and responses that others have of oneself. An image of oneself forms and is sustained. 'I like juice, I am an angry person, I do not like uncomfortable situations' etc.

Similarly one forms these associations about other people and the world – Hari is a bore, Geetha does not like me, mothers are very strict, the world is an unhappy place etc.

Patterns and Life Scripts

We function through these associations almost automatically. Often we are not even aware of associations we carry. At such times we are surprised by the intensity of our feelings and responses in certain situations. This is because many of these associations form in early childhood. Psychologists say that the patterns of thought and feelings that govern our life, "scripts" as they call them, get formed by the time the child is seven years old. This implies that we live out the associations formed in childhood for the rest of our life - a rather dismal thought!

The process of education, relationships and other experiences as we grow can modify these associations for better or worse. Understanding the world implies understanding oneself and one's associations. Therefore the educational process must address this zone.

If a child has been severely put down in childhood with phrases like "idiot", "you are foolish and can never learn" etc, then he would have formed associations of himself as an idiot. A caring teacher or parent or friend can however help a student grow aware of such associations, help him question the labels and descriptions and help him move away from self defeating or dysfunctional locations. An individual who embarks on this journey of discovering oneself meets surprises and this is often an arduous journey.

"Learning for Life" Education

- To create well-being for myself and others through awareness of these associations is the purpose of a learning for life education.
- Research says that we can acquire skills in dealing with our thoughts and feelings.

This is also our hope, inspiration and commitment as educators. Learning for life education is like scattering seeds – some seeds grow slowly, some faster but there is no doubt that the plant will grow and blossom. The core of life is a positive offering. Well being includes well-being for my self and well being for all.

Facilitating the Learner in Life - The role of School and the Teacher

What is the role of school and the teacher in education?

The Role of School and the Teacher is to facilitate the movement of learning in all contexts of engagement - with oneself, with peers, with family, with society, and in school.

The teachers' effectiveness in creating a climate of well-being in the classroom and for each student. The teacher needs to be sensitive to the reality of the child

What kind of a socio-economic background does she come from?
What are the influences operating on this child?

What are some of the difficulties he/she is experiencing?
What are some of her aspirations, concerns, fears etc?

While these questions are important and one must endeavour to understand them, one is never likely to accurately know all the details about any child. It is also equally likely that the answers are a sub set of the broad experience of our times. Far from being a cause for complacence, unfortunately, this demands great alertness and sensitivity from all adults who have a caring and instructive role with young children. The reasons are not difficult to understand.

The prevalence of child abuse, both sexual and physical, domestic violence, drunken behaviour, pornography and provocative behaviour of adults towards children, if research statistics are to be registered, are widespread and alarming. The statistics seem to cut across social strata and demand clarity from adults.

How are we as adults to understand and locate ourselves with respect to these realities? Do we grow aware and continue with an anxiety? The dangers to children are well concealed and often very near at hand. It does not help to be just alarmed and dash about in search of advice. It is also no longer possible to turn our head away from these realities. Thus the teachers need to be sensitized and oriented to strategies and perspectives for meeting the child effectively and sensitively.

One of the most vital skills a teacher requires is that of LISTENING. While this is one of the most commonly used senses, it is also one of the least understood. When we listen, we do so from behind the screen of our associations and our conditioning. To listen to another carefully requires the capacity to put aside our preconceived notions and our preoccupation. Making too much of something we notice is as misleading as making too little. To listen to someone just a s person is speaking is probably the greatest gift one can give to another human being.

A listening teacher will pick up many cues in the classroom - who is impatient with sit down activities over 10 minutes, who likes to painfully add colour to his work, who is such a perfectionist that she has to do the whole thing over even if there is a small mistake etc. Noting the patterns of the classroom is an important aspect of the teacher's presence.

This brings us to the next vital aspect of the teacher's watchfulness. We are all trained to watch and look for faults. When we look we see faults. We do not know how to look without either endorsing or finding fault. Therefore in our looking there is a haste to 'do something' about what we see. This fault finding gaze. and our haste, colours our looking and our response. This pattern has been passed on from generation to generation. For us teachers, therefore to learn to look, without a fault finding element, is not easy. To learn the art of such looking is the profound challenge for a human being and a compassionate, caring teacher. Without this element, no matter what the teacher does, he or she remains located in the zone of blame, guilt, reaction etc.

Some ideas on child development

Just as there is a lot of information about the reality of being a child, there is a great amount of sensitive study available to us about how children develop and what patterns they follow in their growth. It would greatly help a teacher to have a perspective on the developmental aspects of children.

- What are the broad parameters of development?
- What do children do at different ages
- What are some signs to look out for in terms of bodily development and behaviour at different stages?
- How does the approach to the world and academic learning change as the child grows from a baby

to a near adult?

- What are some signs that point to special intervention?
- What are the developmental tasks of this age group?

Anxiety & distress in children's life

It is only a matter of time before we have detailed protocols for supporting children in school in a far more informed way than we have now. Literature and internet sources offer guidance and clear steps to be followed when a teacher notices a child in crisis or having some difficulty. The first step in supporting children is for the teacher to report to another responsible person. The second step is to find the right kind of support mechanism. It is to be noted that with a society going through the throes of rapid urbanisation, high aspirations, congestion in cities and anonymity bestowed on us due to mobility, there are bound to be higher levels of anxiety among the population. Children will not be exempt - they never have been. Peer pressures, need to belong and anxiety about not meeting expectations will surely make child distress more of a phenomenon that in the past. Signs are already visible of significant rise in the numbers of children experiencing distress. It will be the important role of the educator - learners in the 21st century to meet this situation adequately. Observing children closely to develop sensitivity in observation will pave the way for offering the right support when needed. This is a delicate balance. More is not necessarily better than less.

Each one of us is a microcosm of humanity. Understanding another is not very different from understanding ourselves. The journey of a sensitive teacher will surely need to include sensitivity to oneself, being able to observe how one is, understanding oneself as a person and in the role of an educator learner.-- watching as one travels ...

How sensitive am I to the child's needs? How do I respond to children? Why do I respond the way I do?

Ideas, Feelings and Strength to Meet Life

Common to academics, oneself and relationships are ideas, feelings and the strength one brings to life's situations. Essentially all associations are of feelings or ideas, (also held as beliefs). Often it is very difficult to separate the two. Thoughts bring about feelings and feelings generate thoughts. In life situations, these associations of ideas and feelings come together. While it is true that the human being is one and cannot be separated into compartments, for the sake of gaining a sense of the components involved, we can consider the following:

Thinking

Emotional Intelligence and

Resourcefulness

Resourcefulness:

The dictionary defines resourcefulness as skill in devising means of support, means of supplying a want

Children gain confidence if they are able to accomplish what they set out to do. Instructions are given to help people perform tasks or fulfil roles. It has been clearly understood that no instruction can be so precise that another cannot make a mistake. This is another reasons that active learning gains significance. Learning to do something is only through doing it. One starts with an idea and then during implementation, one may fumble a bit. Then one gains proficiency through repetition. **Part of resourcefulness is to give oneself permission to fumble.** The other aspect of exploration that one needs to understand is the **boundary of safety for oneself and others**.

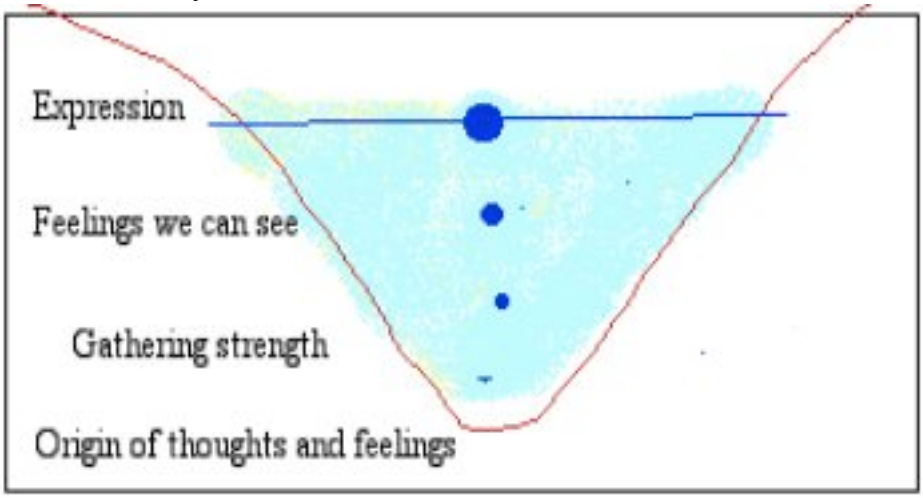
Thus a key to **being resourceful is to be able to try something that one has never done before with confidence and caution.** Since school is a space of learning and finding this emotional space is vital. Play stretches one beyond known resources, gently and with excitement, with no major price.

Play builds great resilience and needs to be extended to the domains of academic learning. When it is said that Learning should be fun, it may be stretching, extending beyond the known, that is being hinted at. Play and fun are not merely repetition - unless it is the repetition needed to build confidence to take the next step. Unfortunately, repetition has acquired a pejorative connotation and educators struggle hard to locate it in their classroom processes.

For the teacher

Will each student have this space to extend and stretch in my class,
and permission to fumble without ridicule?
How will I engage with a child who is hesitant and refuses to extend himself or herself?
Since all cannot do the same thing at the same time, how will I ensure
that students are not discouraged because someone can do things faster.

Thinking feeling are closely related.... and rise in us much as bubbles rise in water. Small and nascent at the bottom, and clearly visible and well formed at the surface.



Thinking is through associations, naming and extending the associations we have already made. For most part then our thinking is completely a product of our earlier experiences. What does thinking skill mean? Is it a skill at all? Do we have much say in what we think or how we think. When there is a stimulus, bubbles rise in the lake, and so do thought-feelings rise in each of us. Thought is rarely volitional. Therefore the endeavour with thinking skills is to use thought in a skilled and deliberate way. Thinking intelligently seems to have the following steps:

- When we hear something or read something, we have made unconscious associations. We can grow aware of these associations and what we have understood by putting down a few points or drawing a mind map. The mind map, a drawing, allows non linear connections.
- Now we can think again! Putting aside the first construct, we can take a fresh look. We may use some tools to organize our thinking and to force the brain to work out of its groove. De Bono suggests the ***six thinking hats.***
- One may say to oneself, "I have thought about this matter in this way. Are there three other ways in which I can think about it?" In history for instance, and in language, one can think as if one were the king, as if one were the farmer and if one were the tax collector. Such a simple device can be extended to all realms. There is a stone buried by the road side. If I were a geologist, how would I see it? Historian? Builder? Poet? Traveller? Washerman? Restaurant owner? These positions are not things we take naturally but each offers an invitation to play and stretch. In such play and stretch the capacities grow. One is not trapped in one way of thinking.
- To be able to take such thinking seriously, and not dismiss it as mere play, it is important to note down, record the perceptions of each exploration. In a class this may be a series of observations from many students. One of the challenges of inviting thinking is to take new thinking seriously. Nothing destroys new thinking as much as ridicule and sarcasm.
- Once the ground has been covered, we can then evaluate the thinking. In creativity training

programmes there is one advice that is heard all the time. “First collect, then evaluate.” Unfortunately the immediate evaluation stops much original thinking. The discipline of “first gather, then evaluate” is a key to learning the art of thinking afresh.

- Fresh thinking is vital and connected to many things - collaboration, review, new solutions etc. But most important, fresh thinking is directly connected to the art of putting aside a view. Nothing is more central to learning and leading an intelligent life.

Emotional Intelligence

Emotional Intelligence is a term coined by an author called David Goleman. Prior to the introduction of this concept one’s IQ or intelligence quotient was considered supreme. People with high IQ’s were considered very bright and successful. However they often did not do well in social situations and more often than not were qquite self-centred.

Goleman did a lot of research in the area of defining an intelligence that would be more comprehensive. He came up with emotional intelligence as that definition. Today the world over, students are being trained in the skills of emotional intelligence.

Simply put, emotions, the play of invisible chemistry in our body, have a great sway over our interactions. Dysfunctional expression of feelings, as we all know, colour the communication.

What is one to do with feelings that sweep over us? Feelings of distaste, boredom, anger, frustration, sexual feelings, sadness? We experience these at times predictably but most often they seem to pop up at the most unwanted of times. What wisdom can one muster? Should one just suppress such feelings and carry on, giving vent to them will spoil the order of the world around us? Most of us seem to do this. Or is one to give free vent to all one’s feelings, because that is the interpretation of freedom that many seem to give? A quick reflection seems to suggest that this is also not an answer to intelligent living as feelings are transient and giving expression to each would mean being uncaring about other’s feelings.

Emotional intelligence is about living in such a way that we are not suppressing our feelings, neither giving free vent to them. Finding a way of living that is not a violence ot oneself or another is one of the big challenges of life and is an area that is not only important for the new citizen in our hands as a child today, but also for each one of the adults, be they educator learners or parents.

Seeking instant gratification is one of the traits being encouraged in modern society. Research shows that one who can delay gratification has a better chance of being successful and happy. How is one to hold the need for gratification of appetites and desires is not an a easy question to answer. Mere rules or guidelines cannot take us further.

Educators need to be sensitive to this inner conversation and approach it with caution, patience and openness with students. Caution, because each of us have our views, but they may not be touched with wisdom. Openness, because students and adults are psychologically similar and pretence of knowledge or wisdom does not help.

In conclusion it can be said the domains of thinking, feeling and resourcefulness all are bound through some simple principles and perceptions:

- Openness to others, openness to other solutions
- Not being trapped in one view or one feeling
- Speaking and sharing respectfully with all
- Trying a different line of thinking, doing without getting invalidated
- Acceptance of fumble and not wanting to be right first shot always
- Learning to delay gratification by delaying gratification

CONTENTS

Academic lessons, what are they?

Can we say, "taking handed down knowledge and carefully constructing one's understanding..."

The ACTIVE LEARNING METHODOLOGY for academic text based learning is built on abilities that every child has. These abilities have been accessed to lesser or greater extent by each child in the primary classes. By the time the child reaches the upper primary, grade 6, the child is already using reading and writing to an extent. The child has also developed skills of listening and forming impressions, answering questions through interactions in society. The core process for navigating written content in any subject can be constructed from the following simple skills:

1. Reading ***by oneself***
    1. Underlining words that one does not know
    2. Referring to the dictionary
2. Underlining important phrases / sentences ***by oneself***
3. Constructing a mind map ***by oneself***
4. Writing answers to very basic questions ***by oneself***
    1. What are some questions I have on reading this passage?
    2. What does this passage say?
    3. What is the author trying to communincate?
    4. How do I understand this?
5. Discussion in ***small group***
    1. constructing a mind map together with a few others
    2. asking questions to check if one's understanding is right
6. Listening to the teacher who bring in his / her understanding--- ***large group***

A simple exercise for the reader, at this point of time, would ground and illustrate this approach.

AN ACTIVE LEARNING MODULE

Please read the instructions given below. After fully reading the instruction sheet you may ask any questions you have.

Instructions:

INDIVIDUAL WORK

1. Take 20 mins over the following exercise.
2. Please read the above passage (Eg. refer book page 45, 2nd para to page 47, 3rd para.)
3. As you read underline the words you find difficult to understand.
4. Check the meaning of the words you underlined using the dictionary.
5. Would you like to read the passage again? Please do so if you do not understand
6. Please answer the following questions:
    1. What are some questions that come to yur mind when you read this passage?
    2. What are some important ideas in this passage?
    3. Connect these ideas in your note book as a mind map.
    4. What is the most important idea/ fact here?
    5. Why do you think so?
7. What is your feeling about this piece of writing?
    1. Does it connect to your life in any way?
    2. Would you like to change the beginning? /ending?
8. What do you feel like doing now? (This question is to help you understand yourself. You may or not be able to do what you feel like.)
9. Please end this part of the exercise when the bell rings. It is time for some discussion

1. SMALL GROUP

10. **Now sit in small groups. Class wise, no more than 5 to a group. Take 15 minutes for this part of the exercise.**
    1. Share answers to the question 6d and 6e.
    2. Discuss – What is the author trying to say?
11. End when the bell rings.

1. LARGE GROUP

12. **Gather together as a class and discuss your questions with the teacher and also listen to her views. The teacher begins by asking questions for each group to answer**
    1. Is there any question you wish to share with the whole class?
    2. Say one sentence about the manner in which your small group discussion went
        1. Did People listen to each other?
        2. Was it interesting?
        3. Did everyone participate?
13. What would you like to do next to take your learning forward? An experiment, more reading, more discussion, making a model?

WHY IS THE SKY BLUE?

I only have to look up and see that the sky is blue. But why is it blue? The interesting point is that it is easy to answer that question in a casual way.

If you ask a botanist, why are leaves green? He murmurs, 'Chlorophyll'. Finished. You see, all questions can be disposed of in that summary fashion, in one or two words. You can surely pass your examinations with that kind of answer, but that is not the real answer. The scientific challenge of nature is to think, not only to discover but to think, to think continually and to try to understand this mystery.

"Why is it blue?" that is a very interesting problem, because two things are there. The sky is there and I am here. I see it is blue. It is the human brain and the human mind as well that are involved in this problem. Now suppose I say, "Don't read any book about it, don't ask your teacher. Let us sit down and try to think out this problem, why is the sky blue? Look at it as if it is a completely new scientific problem about which nobody has troubled himself before."

You sit down and think it out and you will find it a most exciting thing to ask yourself that question and see if you can discover the answer for yourself. Now I will put it to you in this way. The best way to answer a question is to ask another.

At night, we all see the stars. On a fairly clear night you see the stars twinkling in the sky. Why are the stars not visible in day time? Please ask yourself this question. Well, the reason obviously is that the earth, as a modest lady, has hidden herself under a veil. The sky is a veil which she has thrown around us. We cannot see the stars during the day, because the veil hides the stars. And what is this veil? The veil obviously is the atmosphere of the earth. The same veil which at night is so transparent that we can see the faintest star and the Milky Way is covered up in day time. Obviously, it is the atmosphere which is the veil. And we see the sky as blue only because we have not got other thicker veils like these clouds. You see, for example, those clouds high in the blue sky. Obviously, therefore, for the sky to be really blue there must be nothing else, no clouds and perhaps no dust. The clearer the sky is, the bluer it is. So the sky is not always blue; it is sometimes blue and sometimes not blue at all. So that the mere looking at the sky enables us to understand the condition of the atmosphere

Sir C.V.Raman,
Nobel Laureate in Physics

The learning context is made such that each student has **opportunities to study in depth** the written information using a set of skills he / she already possesses. The lesson becomes the **opportunity to use one's capacities** rather than a mysterious thing that can be understood only through a teacher's explanation. The premises of this approach are as follows:

- Study requires the student to access given knowledge, this is almost entirely contained in books
- The student will receive and understand it if he is able to engage with it actively
- The student already knows how to read and grasp what he reads
- Grasping in greater depth is greatly helped if some simple tools are used in addition to reading.
- Engaging with the content and using verbal and visual skills the student forms an understanding.
- Student therefore has an opportuity to originally construct his understanding. This helps the student stay active in the process of travelling the academic ground.
- A second important dimension is sharing the understanding with peers; this oral activity is also an opportunity to be active.
- Listening to peers creates the otherwise rare possibility of listening to 4 or 5 voices on the same subject.
- Many styles of pointing to the same fact or phenomenon helps one get a fuller view.
- This kind of discussion non verbally teaches that there are always more views than one and each has some validity.
- Through the group's interaction one also has an opportunity to reconstruct one's view or come up with a shared view. This teaches the resilience needed to give up a view or modify it on receiving fresh inputs.
- The student constructs his / her understanding first and is not a passive recipient of the knowledge that is contained in the book or worksheet.

WHY THESE SKILLS, WHY THIS METHODOLOGY

Let us pause here to look at the process of learning in terms of the brain. As mentioned earlier, the brain basically functions through ASSOCIATION. Billions of nerve cells and circuits of association form in different parts of the brain. These are complex. In the growing years, the associations form for the basic processes of life- feeding, language (associating the object tree with the word tree), walking, performing coordinated movements etc. In the later growing years, the associations include that of abstraction, complex problem solving etc.

The five basic skills that the student needs to use are:

- Reading
- Drawing a mind map
- Summarizing
- Discussion and
- writing

These can be expanded to include

- Browsing
- Reading
- Questioning
- Drawing a Mind Map of the key perspectives
    - Identifying key perspectives (main ideas/themes) in a unit of learning
    - Summarizing in various ways the fey facts
- Participating in and Anchoring Discussions

- Writing
- Making Presentations
- Memorising
- Self Assessment
- Summarising and writing textual answers can follow if required

Browsing - a quick overview, forming impressions without much detail

The first quick look makes for rapid connections in the brain, a quick overview of the content and style of presentation, and an emergence of feelings. Interest or disinterest are the first responses. An evocative introduction to a topic helps in getting an interested or curious orientation. However, understanding at any level, hardly depends on the quality of the first response. Understanding and grasp depend only on the extent of engagement and 'work'.

This is the first step. One may be tempted to say that it sets the stage for the learning that is to happen. It may be important to enquire if the process of learning has much to do with the first response, and possibly everythting to do with the ability to go beyond likes and dislikes. It may be also important to digest that feelings are transient and giving them a greater validity actually blocks the learner from proceeding with further engagement. UNDERSTANDING ONE'S FEELINGS, an awareness of feelings that sweep over oneself, may provide a much needed space for the acknowledgement of the first associations such as - like and dislike, interest or disinterest or fear of engagement.

Reading Comprehension, Understanding

In the next stage of the learning process, the new information is processed in the light of prior knowledge and experience. Domains of association in the brain are expanded, modified, new associations and circuits are formed.

The primary requirement in this process is adequate comprehension of the language or medium of transaction. If the medium of transaction is the written word, then the reading comprehension is basic to the understanding. This is why the student's engagement with the reading material is very important. Underlining key words, finding out the meaning of new words using a dictionary are mandatory. It is important at this stage that the teacher facilitates such a movement by holding fast to the process. An engaged student, using his / her resources, gains confidence. For students to read instructions and exercise their cappacities for comprehension is an excellent way of teaching comprehension. 'playing the cello to learn to play the cello..' A set of guided questions such as the those used above accomplish this objective most admirably.

The process of engagement described - the reading, checking meaning of words, re reading and then articulating one's own questions - expands the network of associations in the brain. The reader gains meaningful and empowering access to the body of knowledge that the piece of writing represents. It must be empahsised here that the act of raising questions tap very different faculties from those required to answer questions. An invitation to raise questions makes for an inward looking and an expansion.

There have been instances of children who have gone through eight years of schooling with minimum reading ability or comprehension. This is unlikely to happen when the reading comprehension is part of their daily work of the classroom.

Consolidation, Reinforcement - a greater depth through listening and speaking,

In the next steps the tentative and new circuits of associations have to get anchored through doing something with the impressions, notions that have been gathered, that have revealed themselves, however

nascently. In acting on that which has been evoked, gathered, it gets reinforced, strengthened.

'The acting on' can be done in several ways. Mind mapping, discussion, reflective writing as avenues of grounding are chosen here as the basic avenues. These constitute what is called **"elaborative rehearsal"**- the process of **actively thinking about** what one has read or heard or seen and **organizing** the information for **easy retrieval and usage.**

- What is the author trying to say?
- How do I know that what I have understood is accurate?
- Can I identify the key ideas?

Constructing Knowledge - giving a voice or form to that which has been understood

Active grappling with the content is lost, as often happens when the teacher lectures and the student listens. The student encounters a loss of meaning at this juncture and then switches off, so to speak. If however, the student constructs his / her knowledge first and then fine-tunes it for greater accuracy, then **the process of active engagement in itself assumes the centre stage** rather than the content of what is learnt. **The mastery of content cannot happen without the primacy of process. Mastery of content is a subset of the quality of engagement. It is a clearly researched fact that long term memory associations form only with active engagement.**

Mind Mapping - attempting to make connections pictorially, externalizing connections that may be happening in the brain

Mind mapping – a technique researcher and author Tony Buzan offers the learning process, has some unique advantages. Research studies show that the impact on learning is positive. Visual images, interconnected with lines, as an alternative to note taking is a salient feature of this technique..Drawing the visuals allows the student an opportunity of an interesting activity all the while chewing on the content. They help them arrange the content in a hierarchy- the main themes and sub themes. They allow the student an opportunity to add their responses as an important component of the learning. They can make links and associations and their own thinking is visible to them. It provides an easy platform of sharing with other students and the teacher. It provides an overview and an organization of information.
It is felt that a mind map is an important tool in the learning process for many reasons:

- it is visual and stirs the non linear faculties we all possess
- allows each idividual to organize according to their understanding
- colour can be part of each mind map as also line drawings, line connections that are straight or arcs
- it reveals the interconnectedness visually and not only through verbal expression
- it can form a good starting point for organizing the information, for writing an answer, for preparing an oral presentation etc.

Discussion - an exchange of views formed, an opportunity to examine why, an exercise in listening, thinking, speaking

Discussion is seen as an essential part of the process of approaching information in a social context. It has been said that **knowledge is socially constructed.** The discussion space of the classroom can be the hearth of such a process. It is the space of sharing and dialogue – where the basic norms of talking together are learnt and where feelings and ideas are shared. Discussion helps clarify, it builds an ability to listen and appreciate different points of view, an ability to speak boldly, to appreciate nuances. Placing discussion as one of the core processes in the classroom also ensures that the flavour of peer relationships includes listening to each other carefully and respectfully, raising questions, speaking to each other.

Assessment - getting a sense of what the student has gathered, learnt, done

To test the validity of learning an assessment happens. It enables one to understand conceptual errors, lacunae in facts, and is a part of the learning process. It can be done by the student himself as a self assessment or by the teacher. If the student learns to do it, it can be viewed as a sign of sophistication in the thinking, developing meta-cognition, an awareness of how cognition has happened. It must ideally capture the learning process and the skills emphasized, apart from the mastery of content. It must be viewed as a learning experience and not invalidate or label the student.

One of the best ways of assesment is the portfolio method. Gathering together all the various materials and writngs produced by the student during the term or year would creat a portfolio. All work including mind maps, drawings, projects etc must be included. This will give an adult or another student a good sense of the work the student has done . Not only will it show the width of the experience of the student, but also reveal the areas of excellence and the area of struggle.

Remedial

This assessment sets the ground for the remedial that should follow. It is a time for the circuits and associations to be given greater attention if the individual needs it.

Summarising, Presentations, Written Work

Once the mind map is drawn, the main themes or the key organizing ideas of any essay are visible. These can then be fleshed out with supporting facts, they can be summarized in various ways presentations can be made and different kinds of written exercises can be set as well.

The student tool kit for MS ALM comprises

- Browsing
- Questioning
- Reading
- Identifying key perspectives (main ideas/themes) in a unit of learning
- Drawing a Mind Map of the key perspectives
- Summarizing in various ways the fey facts
- Participating in and Anchoring Discussions
- Writing
- Making Presentations
- Memorising
- Self Assessment

Browsing

This is similar to browsing in a bookshop. The idea is to familiarize oneself with the chapter and what it contains. Like in a book one looks at the front and back cover, notes on the author, whom the book is dedicated to, the pictures, the chapter headings etc, so too when opening a new chapter, the student is encouraged to browse. The student looks at the pictures, the tables, the main and subheadings and at anything else that catches his /her eye. It is quite amazing how much can be gleaned by this process.! It sets the stage for learning.

Questioning - an art

" Skills can be taught but education starts with a question." Ivan Illich
The question contains the answer.....

Must Be Done

The student is also invited to put down his / her questions on the topic immediately after the reading. Initially all students may have difficulty participating. Further, many may find it difficult to take themselves seriously, or consider themselves worthy and thus not be able to ask questions. However, it is a mtter of time before students begin to see that each question is valuable and has space. **It is most important that the teacher considers each question with seriousness and with no trace of derogation or laughter or sarcasm.** The questions written by students, after reading a passage can be shared in the discussion group.

Once questioning is established in the class, the teacher could add some variety by inviting questions just after the first para, or in the middle of the passage etc. The passage quoted above, by C.V. Raman the Nobel laureate is a wonderful piece on the value of questions and the **art of questioning.**

Why raise Questions? Is life not complicated enough without asking more questions?

- There is literally a question for every occasion
- Questions direct the way we look and where we look, and open spaces beyond.
- Once we ask the right questions, we can access the information we want

Some questions that students have about their learning (compiled from a classroom)

- Why do I have to learn?
- Is there a way of learning that is natural to me?
- Is it possible to learn everything about a subject?
- How do you bring awareness or attention to what you do?
- Is what I learn now going to be significant later?
- Is it possible to classify everything you learn?

More details on the kind of questions is given in Appendix - Student tool Kit

Last but not least, and probably very significant is the last question on page 2. What would you like to do next to take your learning forward? An experiment, more reading, more discussion, making a model?

The space for inititative for a student is vastly shrunk and almost non existent in a class. There may be good reason for this. If all students would take initiative and suggest various ideas, the class would be chaotic. But if this reason becomes the basis for there being no space for initiative, then it is almost making all initiative illegitimate.

Initiative is such a delicate thing and needs so little support from the teacher. If with a question like the one above, the space for initiative is opened out, then each student, with his / her special way of responding may find something to do that is quite unique. All may not respond at all times, and there is no need for all to be evoked similarly. But if this opening is maintained, then different students would take intitiatives at different times.

The class may see models, drawings, connections, writings, poems, plays and many more such things. Without much being said, children will imbibe that there is space for initiative in the world, and it is not shaped only by the guidance of teachers and books.

There are many changes sweeping the world and India is no exception. One of the features of our world is an accelerated pace of change. This sweep has touched everyone and every sphere of life. It is difficult to stand still. Learning has come sharply into focus - life long learning requires an attitude and a willingness. The agrarian period has seen the hunter gatherer 'settling down' to a period of predictability. Unfortunately or otherwise, the knowledge revolution is forcing us into the footsteps of the hunter gatherers, and forcing us to be on the move, not only physically but in the movement of learning. All practices and beliefs are being opened to scrutiny and critical examination. The search for a ***better way*** of educating, discussing, learning has been ignited with tremendous energy. It is no coincidence that the practices of education are changing.

ROLE OF A TEACHER

Are you creating that strange atmosphere where actual learning takes place?
J.Krishnamurti, Letters to schools

While it has been recognised that the best teacher is one who is willing to learn, there is not much evidence of this in the way schools run. The learning of the teacher is left to individual motivation and chance. The individual teacher needs to be open to learning, not just to the subject but also to alternate approaches to the class, the group, the individual. This is an uncomfortable time for teachers. The times require a teacher to go to class and do things completely differently, from the way teachign happened till last year, last month. There is much anxiety and irritation as is inevitable. School administration will have to offer support to teachers in these difficult and interesting times. It may be good to use the phrase "Educator Learner" and thus legitimise the learning component of the role. In keeping with the ideas mentioned in the previous sections of this manual the teacher is viewed as a facilitator in the learning context.

The teacher's role with students must cover the following:

- to set the context and the tone...
- to watch over the interactions and responses of the students
- to help students share and internalise the intentions of the academic program in life terms
- to respond to the information, difficulties and unusual events humanely and with fairness.
- to report unusual events and problems with a view to finding sensible and humane solutions.
- to ensure effective teaching - learning processes with assessment and support

There are many sources from where a teacher can learn. Books and magazines have been available in the past. The internet today offers a rich repository of experiences and perspectives.

A reflective practitioner

A recognised direction of learning for teachers is reflective practitice. There is much learning which can to be done by a teacher through reflecting on his/her daily experience and efforts in the classroom. This involves making an effort to notice, register and reflect on the details and the atmosphere. In the process many aspects of one's practice becomes visible and thus a source of learning and reorientation. The Indian tradition of *swadhyaya* meant 'learning by oneself'- I am the teacher, I am the student and I learn by observing , reflecting and by initiating change. The journey of a reflective practitioner is

- to observe what is happening in the class
- this means also noticing what one is doing
- to notice all the details and gain an overview
- to try and change some elements of this picture think of what one can do differently

- to think through the possible effects
- to try out what one has come upon in a small measure and
- continue the above process

Through such a process, and such an initiative, an educator would then gain vital insights into many questions regarding the classroom, students, role of teacher, intentions of school education etc. Much more important, the educator would have moved into the role of an educator-learner, uncoerced and possibly into life long learning. Such learning can lead to much improvement in classroom practice.

The educator needs to understand the framework in which he / she is functioning - the framework of the classroom, school and the education system . Beyond all responsibilities, an educator needs to deeply digest the significance of humane and respectful transaction with students. Both these notions are challenged in the day to day working of the school. The structure of school seems to demand strong intervention to maintain order. Further, in the present time the respect for the educator is at a low ebb. This not only puts the teacher at a disadvantage, it stokes just those forces that require a strong hand to restore order in the classroom. The tools at the disposal of a teacher for ensuring order conflict with the notion of respectful transaction with students. The work of the teacher requires a resolution to this conflict. The stress of this situation can be quite heavy.

The teacher in India is no longer in the lofty location that a continuity of culture had bestowed upon him. The winds of change are blowing hard and altering the landscape. IT industries are booming, and 'knowledge' has suddenly becoming a mysterious word used by many. Colour, glamour and globalisation are breathing strange idioms into the present and young people are drawing salaries that seem astronomical and somehow unfair. One who has chosen to be a teacher finds himself / herself in a difficult position. Am I sure this is what I wish to do? Am I being left behind? Often the inner conversation with oneself is tiring and it is only those who find a meaning beyond just logical reason, manage to happily sustain themselves in the role of a teacher.

Active learning methodologies assume that the teacher is a facilitator of learning and not repeater of what is in a book. Thus thus role actually requires that the teacher be differently active. The active classroom will offer ease and well being to the student and teacher. If the rules of self learning and peer learning are simplified the students know how a class is run. They can assume responsibility for it and participate. If the classroom is a mysterious place and only the teacher knows what is to be done, when and how, the teacher is alone and the students continually look up to the teacher. However, if this is demystified, and there is scope for all to participate in the classroom. The ALM methodologies permit the student to clue in quickly to what is meant by a 'class lesson'. There are some simple tips that a teacher may consider:

1. It is not right for any student to be expected to sit in one place for many hours. One of the best and simplest ways of breaking this monotony is to have a physical break for 2 or 3 minutes after each period or hour. One student can lead this exercise and others can follow, a different student each day. Initially the students may find this funny, but it will settle down. No body contact with anyone or any objects such as desk etc.
2. The physical arrangement of the classroom is very important - it is the ground for the transactions. One of the problems with the common structure is that it does not lend itself to student discussion. It is advisable to use furniture in such a way that students may easily break into groups and sit together in 4s or 5s. Innovative use of the furniture, the indoor and ourdoor space, is needed to offer this opportunity.
3. Mixed age classes, as have been tried by SSA in the Primary classes, have much to commend them. When students of roughly the same age are together, much of the school day, then there is a sense

of competition. Continuously comparing one's work with the neighbour does not make for a healthy learning atmosphere easily. Students need to learn at their own pace, in an atmosphere of freedom. Creating this possibility is the responsibility of school.

It will help the educator if he / she is conscious of the broad movements in society and in the area of school education. One of the main aspects of society today is the computer. Information is being stored in a manner that is easy for retrieval. More information will be accessible to more children today than to all humanity say 25 years ago. This fact has changed the landscape of possibilities in education substantially. Much of the efficacy of education in earlier times was transfer of information. Today, making sense of information, converting it to knowledge and wisdom is the endeavour. In that sense the present challenge is also emphasising the ancient challenge for a stirring of intelligence and wisdom.

The present structure of the school classroom is a recent phenomenon, historically speaking. This structure evolved in the 1800s with the Industrial revolution. Educational endeavours existed before and were not built around uniform curriculum, subjects, expectations. Today with the theory of multiple intelligences we seem to be recognising that each person operates differently. Thus if one is not gifted in mathematics or language, it is not a problem. If one is not good at science it does not close doors to a meaningful life. Thus school curriculum and transactions need to dignify each person irrespective of what they can do or accomplish. At about age 10 the human the capacities of children begin to show a greater spread and diverge in a marked fashion. Standardised academics and subjects do pose a challenge to this reality.

An educator will surely meet such questions and many more. In fact the questions in education most often one meets is "Is this the best way I can proceed?" The educator is one who lives such questions with grace and dignity, trying to find out, thinking, observing and learning. It is only in the clarity of the educator that the practice acquires muscle and finesse.

One of the important avenues of learning for an educator is from the practice of other educators. A great deal of documentation and writing is available and schools must ensure that some are available to educators. Further the practice of engaged, active learning may also be used for learning about educational issues and practices.

When people speak about the teacher and the student, a certain image is activated in the mind. One may immediately think of a classroom with rows of desks and benches. One may also think of shining faces standing in a row in the morning, all in uniform, singing the school song. One may also think of a group of students sitting cross-legged in a room or under a tree. The images are a result of our memories, experiences and stories heard. In India, we have had a tradition of education that is ancient. Many of us may not know that Lord Clive, in the middle of the 18th century, wrote to his monarch that in Indian villages every man, woman and child knew how to read, write and do arithmetic. There are records to show that this was so. [2] The teacher also had a special position and represented sacrifice, erudition, values and wisdom. Thus the picture of the teacher, the picture we may unconsciously carry, is that of a dedicated lone man, who single handed ran a little school.

This image however is not applicable today. While there may be lone teachers who teach music, dance, art or take tuition in different subjects for individual students or groups of students, the school is about a group of teachers. It is also true that a large number of teachers in schools are women. Thus the school is a place that is separated from the image quite sharply. The intervening period, between the industrial revolution years to the 20th Century has changed *gurdakshina* into *fees,* the loose knit group into orderly rows and columns, and largely men teachers into men and women teachers. Other significant changes have been the movement from a single teacher institutions to a multi teacher, multi grade institutions, the teacher no longer certifies, an Exam Board does, and from a time when there were no

[2] The Beautiful Tree Dharampal

failures, unlike the present system.

The School is therefore under tight constraints, and necessarily a collaborative ground for the teaching community. Working together is a most essential skill for responsible adults who wish to work in school. The working together presents great challenges. If one could earlier depend on just one's hunch in a school one is needed to have a shared rationale for one's actions and approaches. Healthy and productive sharing of the educational endeavour is a difficult and rewarding direction.

Not only is ours a time of rapid change but also a time of working together. Speed and extent of communication is posing new challenges to educators. The meetings we have with each other are against a background of e-mails, and exchanges over the phone, the media barrage in print and TV. The art of communication is acquiring a greater importance than ever before. These skills have been studied at length and much information and training is available from experts. Some skills that one would do well to pay attention to are:

1. **The art of listening.** This is one of the profound arts. As discussed earlier, this is not an obvious skill or capacity. Without this learning one's interactions with colleagues and students will suffer.
2. To listen well one needs some clarity. This means not easily assuming that the meaning one has constructed is the one the speaker has intended. The space for clarifying and discussion needs to be used for gaining a closer understanding.
3. Communication requires that we grow clear of our intentions when we speak. Unconsciously we seek agreement from the listener. The art of watching oneself tells us a great deal. Learning about oneself and one's inherited patterns is an important aspect of the teacher's role. How will one communicate to the young that they must be watchful if we don't watch ourselves? One needs to learn the art of watching without finding fault, wanting to quickly move away, or just be lost in feeling.
4. The communication between students and teachers happened in earlier times in a traditional atmosphere. Respect could be taken for granted. Today such an atmosphere does not exist and the communication has become complex. With the freedom to question has come the questioning of authority. Thus the teacher functions in an ambience where the older moorings have been eroded and new ones have not been shaped. It is all too easy for the teacher to slip into an authoritarian mould. Not yielding to this quick solution demands great forbearance and clarity on the part of the teacher. The art of choiceless respectful communication, while fulfilling the need for an orderly atmosphere requires much introspection and the development of new muscles.
5. Since an educator is also responsible for the young, their well being and safety, these skills will help him / her watch the students with care and compassion. Learning this art of observation, without a built in search for a fault, is a very important and necessary part of a teacher's journey. Part of the teacher's image, buried in our unconscious, is connected with correction. Regular correction of academic work and behaviour, the red pen and the pointing out to the student, seems to be a necessary part of the teacher's daily work. While correction is needed, a fault finding approach is not. The educator needs to find ways of relating that are not burdened by this part of his / her role. The other aspect that educators need to be careful about is the manner in which we hold what we see and notice. In being closely related to students, one observes many things. Educators, in conversation among themselves and in their reports to parents, need to hold the growing young with dignity and respect, whatever they see as the difficulties and struggles. In the times we live, there are many difficulties children experience and being in daily contact with a large number, we possibly see a magnified canvas of human frailties. Not to respond with contempt, superiority or sarcasm is the sacred responsibility of all educators. We cannot feel superior to

students when we see their patterns and difficulties.

If you learn to watch students, they will learn to watch themselves.
J. Krishnamurti

THE ALM CLASSROOM

In the classroom where it is established that active learning will happen, the educator will be visible as a moving presence, much like the ABL classrooms, but less engaged with students, as the students will be more engaged in using their capacities and engaged in discussion among themselves. The teacher may join a small group occasionally, but this is not a necessary requirement. This does not mean the educator will not be heard at all. On the contrary, the educator will be heard at the end of the student endeavours. For the ALM classroom to happen purposefully, the students would need a clear introduction on what to expect and why this is thought to be a good move ahead. There is the view that students may not understand the full complexity of ALM. It is important nevertheless that they are oriented at the beginning. The important variations are as follows:

- In the traditional classroom the teachers gives the instructions orally. The ALM classroom will begin with students reading the instructions. This is an important first step as it
    - builds on existing capacity to read
    - allows the pace of reading to suit the individual and not one pace for all
    - will require the teacher to withhold his / her training.
- In the traditional classroom the teacher introduces the topic. In the ALM classroom, occasionally the teacher introduces the topic, but mostly the student accesses it material through reading.
    - permits space for self pacing and use of existing capacity
- In the traditional classroom the teacher provides a view of the topic and more exploration happens through the questions of the teacher. In the ALM classroom the student raises questions first and then is exposed to several views through discussion.

- In the traditional classroom the student write answers to teachers questions. In the ALM classroom the student writes his own questions.
    - This offers space and opportunity for pondering and thinking and taking oneself seriously.
- In the traditional classroom the teacher introduces the topic and sums up (teacher may need to be speaking almost the whole time 25 to 40 mins). In the ALM classroom, occasionally the teacher introduces the topic, but almost always has a concluding session that address the questions the teacher has brought up and adds from the educator's experienced perspective. (The teacher is required to speak a maximum of 12 to 15 mins to the whole group.)
    - this makes for enhanced student receptivity and less need to order the full class
    - the teacher's voice is a valued contribution and looked forward to rather than the taken for granted voice in the classroom.
- The important processes in the traditional classroom are listening to the teacher and following oral instructions. In the ALM classroom the important processes are reading, writing, questioning, discussing with peers and listening to the teacher.
- The important assumptions in the traditional classroom are that listening to the teacher is most important and one must follow oral instructions. An important assumptions the ALM classroom are that one begins with exercising one's capacities and to learn from the teacher one needs to have been active first with all the capacities and resources one has one's disposal..

In our experience, students grasp the processes in a very short time and this enables them to take ownership of the process and participate in the running of the class.

- One way for the methodologies to sink in is to offer students the opportunity of running a class after about 3 or 4 weeks.
- The teacher will see at once how much of the process has sunk in.
- The student's understanding, like the educator's, will grow and deepen with time and practice of the processes.

More is not necessarily better than less....

A matter of frustration for school educators has been the steady increase in content over the years, particularly in the subjects science, maths and social studies. The reasons are new research, new disciplines, new perspectives that are contemporary etc. However the school year and the school day has not increased in size. The bulges in the content areas have definitely added to the pressure in the classroom. Further, the addition of a new subject, Environmental Education at all levels, has jostled the already crowded academic space. We have famous lines from the Yashpal committee report

"Few things learn well are better than many things learnt badly." These lines written more than 14 years ago pointed to the problem in school education even before the new subject Environmental Education was introduced. Rather than battle the question to a point of stalemate, it is suggested that the content may be given a secondary position over process, trusting that good process will yield effective results.

Another dimension of the statement requires attention. Just as the content has grown, so has the number of strategies to have an engaged classroom. If width of strategies is all that is required to address the anomalies in education then the teacher merely has to use many techniques in the classroom. First it is not suggested by a long shot that the strategies suggested in this manual are a comprehensive account of all possible ACTIVE LEARNING METHODOLOGIES. However, it is being suggested that these have been chosen carefully and put together with following main objectives.

- To keep the templates few and simple and easy. The objective is that the children can internalise these easily and use them in other contexts.
- The processes suggested use reading as a basic tool. It is true that the skill is used with different levels of proficiency, it is a basic tool and needs emphasis for feeling empowered and for being able to participate in society. While other non verbal tools are available, these have not been foregrounded in this manual. For example, drama, projects, model making, social skills etc can be used to tap the resources hidden in a child. It is the emphasis in this manual, that however poor a child may be, the opportunity to read along with the support of peer conversations will surely enable each child to take the next step.

It is considered important that the teacher **should not** rapidly widen the range of strategies in the classroom and thus unwittingly fall prey to a teacher centred approach. Thus this approach calls for restraint from teachers in widening the range of strategies and sticking to a core set. Given the call to learning **more approaches** that has been prevailing in the environment this may seem difficult. However the reward for the teacher who is able to make this shift will be a sense of ease, a clarity of purpose and a do - little teaching. Focussing on core strategies will also clarify the core intentions and improve possibility of delivering these. The focus here is to provide all opportunities for the emergence of the lifelong learner. In the future children will encounter many different opportunities. They need to learn from all. A mountain goat will only graze and survive on the mountains and a zebra only on flat terrain. The lifelong learner is a bit like an all terrain grazer, one who will know how to move and nourish himself or herself anywhere.

It is also suggested that the portfolio of the child, written work, accounts, feedback from children, and the pictorial representations, be the documentation used as evidence of quality of learning opportunities offered. These can be assessed through a process that is not limited to the end of year examination.

A further dimension of the ALM classroom refers to the approach of the educator to errors and accuracy of written work. It is important to give value to the content and the process in any piece of work the student does. In ALM, since the accent is on learning to learn, meaningful and uncoerced engagement and empowering the learner, it is vital that the emphasis shifts from content to process.

A famous violinist was approached by an ecstatic listener at the end of a concert in Vienna, "I would give my life to play like this." The violinist replied, "I did."

The act of playing the cello, without losing heart, is more important than the music that is produced. The music produced is a by-product of the years of practice, dedication and perseverance, an enduring of all the times that one did not get it right, never even knowing if one will get it right. This is not going to be an easy learning for teachers, anxious as we have all grown over content, rightness and accuracy. However, on reflection and careful thinking one may see that placing the emphasis on effort is the only truly egalitarian and respectful location. For humanising the process of schooling, it is important to see that school offers opportunities and that such opportunities empower. The extent to which people use opportunities will always be different. If school is not to become an instrument of bestowing privileges but an avenue to learn about egalitarian principles, we must see that each child is a different flower and a different plant. Some grow quickly and some slowly, some spout large leaves and some have red beads. Some attract butterflies and other have no flowers. School must be a garden that supports all these and more. Each child must have a dignified, safe and egalitarian space to explore, to exercise and go as far as the child can go.

The extent to which a school can be a garden of many colours, is the extent to which the gardeners see this as their role. If the gardener is only interested in roses and sees all else as weeds, then roses will grow but not other plants. Growing clear about the purpose of schooling, within the existing context, is the important journey of an educator. And much like children, adults too learn through reading, writing, discussing and listening to people who have more experience. Offering this opportunity to teachers, through processes of ALM is a responsibility that the school must accept. (Educators of course can also ask for such opportunities.)

Opening the doors to the ongoing education of the educator through active processes is a vitalising and empowering process. But this process needs to be supported with strength and maturity by Heads of schools and school administrators. ALM means people will be active. This means questions will come up. All questions may not be comfortable and some may require that the system adjust and move in the face of good sense. Nothing supports an empowered learner like an empowered educator. Is 21st Century India ready and welcoming for the active and empowered educator?

Can the raising of questions not become a mechanical activity?

We usually ask questions when we want someone to answer them for us. It is an interesting practice to accept the invitation to question something that has been read or listened to. This situation forces one to think. If we have no questions it must mean that we have either understood perfectly or we are not interested. It is difficult to say that one knows everything about anything. But it is often when one hears or reads something that one grows passive. It is a good challenge to think up a good question, which actually means growing aware of what one has not understood. Also if one can find a good question one has a good chance of finding a good answer. The art of raising good questions can be learnt only by asking questions, not only answering questions that others ask.

The problem of whether the questions can become mechanical is no different from any activity becoming mechanical. If the educator understands the value of questioning , he will know how to persist without the repetition becoming a pressure for the students.

Is not reading likely to become a stilted activity?

Reading is the most basic skill that students learn in school and each learns this skill in their own way. The thrust to ensure that students use this medium with effectiveness for their academic and life skills simultaneously cannot be diluted. The methodology suggested in this manual provides opportunities for reading and the rest of the process relies on the reading. Making it part of the process will ensure that each student reads daily to make sense of academics, uses the understanding in meaningful social contact with peers and also finds the opportunity to listen to the teacher's inputs. It is unlikely that reading when used in this manner will become a stilted activity. On the contrary there is every chance of student builds on this experience to use it in life contexts.

WIll the transaction of content not become slower?

This is a crucial question that all concerned with the education must meet head on. There is no use pretending that all the portions will be covered at the same pace as during the lecture based classes. However, a parallel question to address is whether the classroom must be active and meaningful for the child or largely passive? In the middle school particularly, if the skills of grasping information meaningfully are cultivated the pace of work can accelerate beyond expectations.

Is this not going to make teaching redundant?

Teaching is the art of creating circumstance for a student to learn in the social climate of the classroom with its boundaries. Watching the unfolding dynamic, making sure that the students are not getting inhibited but using their capacities, staying engaged is the main role of the teacher. There will always be the spaces for offering inputs based on one's experience and knowledge and wisdom. But teaching is never going to be the same as we knew, a teacher lecturing to students much of the time. Teaching is now definitely equal to engaged students, no longer engaged obediently out of fear of punishment.

What we are building on is that the SSA has already instituted Activity Based Learning in Vertical Age classes where there is active ownership of learning by students. There is already a taste of teacher not being at the centre, but assisting individuals and groups. There is already an experience of children and teachers discussing while sitting in circles.

We are taking for granted activities such as story telling, puppetry, games and some learning outside the classroom (field trips etc). We also assume that children's have the freedom to express themselves without fear.

Conditions under which this move will work: The endeavour to move in the direction of an active learning classroom will falter if

- adequate teacher traiining inputs particularly to help each teacher internalize the philosophy
  - each child is an individual and needs to be treated with respect
  - explorative movement from the child is more significnt than quickly getting the right answer
  - support ofr individual well being in an orderly atmosphere is the teacher's role
- if strategies in the classroom are kept to a tight core

What teachers should do

- Patiently try the processes suggested with the given lesson plans.
- Keep a journal of their experiences and mainly questions
- At the end of each leson enter some observations as suggested in the Appendix - Teaching learning a process approach.
- Educate himself / herself through some extra reading

What the teacher should not do

- Quickly decide that this wont work
- fall back on lecturing mode

Bibliography

1. Meyers, Chet and Thomas B. Jones, 1993. Promoting Active Learning: Strategies or the College Classroom. San Francisco: Jossey-Bass Publishers.
2. The Two Paradigms of Education and the Peer Review of Teaching, by Dean A. McManus, School of Oceanography and Center for Instructional Development and Research, University of Washington, Box 357940, Seattle, WA 98195-7940; in the NAGT Journal of Geoscience Education,Vol. 49, No. 6, Nov 2001, pp. 423-434.
3. The Mind Map Book, Tony Buzan
4. The six thinking hats, Edward de Bono
5. Emotional Intelligence, David Goleman
6. The Beautiful Tree, Dharampal
7. Deschooling Society, Ivan Illich
8. LEARNING WITHOUT BURDEN - REPORT OF THE NATIONAL ADVISORY COMMITTEE (YASHPAL COMMITTEE), July 1993
9. Teacher Sylvia Ashton Warner
10. The Teaching for Understanding Guide , by Tina Blythe and Associates, Jossey-Bass, San Francisco, CA 1998
11. Paths to New Curriculum Stephen C Clem, Z Vance Wilsom

Other references:

http://cte.umdnj.edu/active_learning/active_general.cfm

http://www.calstatela.edu/dept/chem/chem2/Active/main.htm

http://chiron.valdosta.edu/whuitt/files/collegelearn.html

http://www.ctlt.ilstu.edu/additional/tips/newActive.php

http://www1.umn.edu/ohr/teachlearn/resources/guides/active.html

http://www.calstatela.edu/dept/chem/chem2/Active/index.htm

http://ctl.unc.edu/hpl5.html

http://www.csd.uwa.edu.au/altmodes/to_delivery/index.html

http://scholar.lib.vt.edu/ejournals/JVME/V21-1/Seeler1.html

http://www.ou.edu/pii/tips/ideas/model.html

http://www1.umn.edu/ohr/teachlearn/resources/guides/quick.html

http://www1.umn.edu/ohr/teachlearn/tutorials/active/what.html

http://www1.umn.edu/ohr/teachlearn/tutorials/active/recommendations.html

http://www.ou.edu/pii/tips/ideas/model.html

http://www.csd.uwa.edu.au/altmodes/to_delivery/self-directed_learning.html

http://lpc1.clpccd.cc.ca.us/lpc/hanna/learning/activevspassive.htm

http://www.plsweb.com/topics/learning_styles/index.html

http://learnweb.harvard.edu/alps

http://www.mind-mapping.co.uk/mind-maps-examples.htm

http://www.studygs.net/mapping/

http://en.wikipedia.org/wiki/Mind_map

http://www.studygs.net/mapping/buzanmap.htm (Video on the net)

SUGGESTED READING

1. How children learn – John Holt
2. How children fail. – John Holt
3. School is Out
4. Walkabout papers – Maurice Gibbon
5. Paths to a new curriculum
6. *Leap into...* Student-centred Learning University of Adelaide
7. *Leap into...* Lifelong Learning University of Adelaide
8. Developing Lifelong Learners in the Middle Years of Schooling University of Quessnsland
9. A New day for Learning – a report from time learning and afteschool task force J`n 2007
10. Success in the Middle: A Policymaker's Guide to Achieving Quality Middle Level Education; National Middle School Association 2006
11. Unfolding Learning Societies: Deepening the Dialogues Shikshantar April 2001
12. The Differentiated Classroom: Responding to the Needs of All Learners *by Carol Ann Tomlinson*
13. The shape of things to come: Charles Leadbeater, Department for Education and Skills UK
14. Next Practice' in education: a disciplined approach to innovation Valerie Hannon
15. Education as a Religious Activity – Krishnamurti's Insights into Education Scott H. Forbes, 1994
16. D & R system for Education Tom Bentley and Sarah Gillinson

In the year 2006 The school KFI introduced after much deliberation, a Pilot Mixed age class was initiated for students of classs 5,6 and 7. This attempt was made following up on a similar change the school made in 1999 for the Junior school , classes 1 to 4. The idea behind these moves was that the individual student needs space in school and also that the peer pressure is not conducive to learning and well being.

SSA team visited The School KFI in April 2007 and wiahed to understand if there was an approach similar to ABL possible in the Upper Primary classes. After exploratve conversations SSA TN invited The School (KFI), Chennai to conduct a 11 - day Workshop for about 60 Block Resource Trainers **(BRTs)**, in the month of May 2007, to explore the possibility of bringing an active pedagogy into the upper primary classrooms. These workshops were conducted by teachers of The School (KFI) as part of the Outreach work of the school, and introduced to the trainers the possibility of moving towards "**ACTIVE LEARNING METHODOLOGIES**" in Middle School **(MS - ALM).** Many of the ideas presented were those that were tried in the Mixed age Pilot programme. The workshop met with wide enthusiasm from the participating trainers. They saw good possibility of introducing this approach in the Upper Primary schools. Further, Teachers from The School held a five day workshop in July2007, for BRTs of SSA TN to generate materials for piloting the new methodology. The workshops outlined **conceptual frameworks** and introduced **strategies** that could be used by teachers in the classroom.

Teachers of SSA TN, taught by the BRTs, tried out the suggestions made by the teachers of The School, over the month of June 2007, in 12 Districts at the rate of one Block in each District. Considering the wholehearted reception and response to the approach and methodology from teachers and students, the SSA TN now proposes to scale this up to all the middle schools in the state.

In October 2007 the TN Govt has issued an order indicating that the for Science and Social studies the MS ALM methoodlogy should be tried in all schools. There is much work that SSA BRTs have put in to generate the lesson plans and now the ideas internalized by the trainers have found translation into lesson plans. Teachers from The school KFI have been assisting them in this endeavour.

This manual is being put together with a view that the core processes of the approach suggested are available as reference to teachers, trainers and role holders in the Education Department.

RESPONSES TO MS-ALM
FROM
SSA Senior staff, Trainers, Teachers and Students

The following responses from senior SSA officials, Block resource trainers, Teachers and students is a small sample recorded here for giving a sense of the perceptions in **October 2007** on the introduction of MS - ALM.

ALM is very useful to the child as well as to the teacher for easy and effective learning and remembrance. THe innovative methodology paves the way for creative thinking, active participation, and quick understanding from the child. THe teacher is no longer a dominant force inside the classroom. THe child involves himself in learning and the classroom becomes a happy environment with freedom of speech, expression, discussion, and activities. Effective learning takes place with minimum effort in the participatory approach of every child.

THIRU S. KANNAPPAN, JOINT DIRECTOR
SARVA SHIKSHA ABHIYAN, CHENNAI - 6

Learning is no longer a hard task. it is entertaining, and enlightening. ALM creates an indelible expression in the mind of the child. Not only academic, but also other aspects of all round development occur inside the classroom through this methodology. THe child acquires the required quantity of self confidence, self dependance, and leadership. One of the main objectives of SSA is providing quality. Through this approach, ample opportunities are provided to achieve this goal.

THIRUMATHI N. LATHA, DEPUTY DIRECTOR

I feel that ALM produces talented students who have imbibed various skills of learning. THe educational set up has been changed from teacher oriented to child centred. ALM has paved a new era in the field of education. ALM ensures meaningful reading which is the most needed skill of learning. Self and pair study formats have given way for the students to expose their talents individually and in groups, which in turn develop the qualities like socialisation, and self confidence. I strongly feel that this will result in real personality development in children. As a practising teacher, I feel greatly privileged to say that I am also a member of this great revolution.

KS VALLI, SG TEACHER
CMS NEW KAMARAJANAGAR, PERAMBUR, ZONE 3, CHENNAI - 39

As a co-practitioner I have experienced that ALM focuses on intensive learning. It shifts the methodology from teacher focussed to learner focussed. i feel that ALM enhances the four basic skills in learning. In addition to what I had earlier mentioned, it promotes the skill of drawing, presentation, diagrammatic representation etc. After practising ALM, the teachers have learnt to plan properly, and execute the plans perfectly in their classrooms. This proper planning and perfect execution induces the insight of time management in their minds.

V UMA PAPPA
THIRUPPORUR BLOCK, KANCHIPURAM DISTRICT

I deem it a great pleasure to share my views on ALM. A teacher is no longer a teacher in

ALM, a facilitator, a guider, and a co- learner. The teacher develops the art of briefing the vast and varied content in a nutshell. Above all, ALM makes the teacher highly resourceful, and implants positive traits in teacher. Democracy in classroom situations is ensured. In total, ALM aims at achieving overall development in children.

A. KAMALA, BRTE
ST. THOMAS MOUNT, RURAL KANCHIPURAM DISTRICT.

ALM is an innovative method. In this method, students are active participants and this leads them in a creative way for learning. It makes learning more comprehensive as it involves the active participation of students. This method makes the student face the difficulties in content in a pleasing manner, and develops skills in their life. In this kind of learning, students can mould their personalities in many ways.

C. VARALAKSHMI, BRTE
ELLAPURAM BLOCK, THIRUVALLUVAR DISTRICT

Creativity develops from students. Learning outcomes are evaluated from student understanding. I observed that the co-ordination of the divergent thinking of students in a heterogenous group has improved. In the traditional method, the students followed the teachers path by rote memorising, but in this new method ALM, students involved themselves in every action. This method builds up students' confidence in facing the situation without any hesitation. IT gives total involvement in their respective subjects. It is a great revolution in upper primary education. ALM is a revival of learning in the educational field.

SHEELA RAJESHWARI, BRTE,
KUNDRATHUR BLOCK, KANCHIPURAM DISTRICT.

I can approach the teacher without any fear. I was shy before. NOw, I have overcome this, by by overcoming my fear. I have improved my creative skill. I mingle freely with my friends while sitting in groups.

S. SHALINI, STD. 8, PUMS
VILLIVAKKAM BLOCK, THIRUVALLUVAR DISTRICT

I felt it was very difficult to study. I omitted the long answers because I was not able to understand the concepts. Now, with the help of mind maps, I am able to remember, concepts, new words, and examples. I can easily recall the earlier portions.

K SRINIVASAN, STD. 7, PUMS
I- WARD, BATLAGUNDU BLOCK, DINDIGUL DISTRICT

I like ALM very much because I can study the lessons easily. I like to draw mind maps. It is very interesting. I can answer all the questions form the mind map because I include all the details in them mind map. I can record everything in my memory as I discuss. In the beginning, I used to omit long answers because I was not able to remember the details. Now, I write the answers with full confidence. This method has made me face examinations without fear.

G VELMURUGAN, STD. 7, PUMS
SECTOR 2, VILLIVAKKAM BLOCK, THIRUVALLUVAR DISTRICT

Educational discourse has been aroun three broad issues. Philosophy, content and methodology. There is enough material that points to the agonizing search to humanize school education, to make it child friendly and yet provide inputs that will make for a good education.

Philosophical matters such as the respect, collaboration, care for the environment, particpation in the porcesses of nation building etc are areas that most seem to agree upon rather easily. The NCERT National Curriculum framework 2005 is a very extensive and insightful document.

Content of school education, the subjects, extent, depth etc are agreed upon less easily by people concerned. Some feel that the content is heavy, others argue fo an all round awareness and necessary skills in langauge and mathematics with a knowledge about key historical events. But most agree that the content is heavy and it is seen that the various pulls and pressures are national and state levels affect the content.

Methodology is the least agreed upon. All agree for the need for improvement.

- **More of the same:**
  - More effort will solve the problem is one approach. This is more than merely a perception. Whatever effort we make, however new a direction, the old muscles kick in and so the old methodologies prevail. There is another problem here. Large changes are difficult for people to agree upon. It is far easier to agree upon working harder than on working differently.
- **Make small changes:**
  - Make small changes in the existing methodologies and the situation will change. This is the dictum that prevails by large. It accepts that larger changes are not realistic or pragmatic. It keeps the fires burning. This avenue allows for many different styles and methodologies to coexist, as long as there is no pressure to conform.

- **New arrangements**
  - These usually disturb existing ones and create much discomfort. The price of discomfort is willingly paid only when a large number of people see that it is going to be effective. These are rare windows of opportunity and if seized at the time can bring about lasting change.

- Educational reform has not much headway because new arrangements paint a picture of a future that does not exist now. There are occaisonally some opportunities that are effective in the present dispensation and will continue to be viable with the new arrangements. These are seen as improving the present, but carry within them the potency to change the system of class, administration, infrastructure.

INDIA- SARVA SHIKSHA ABHIYAN

Seventh Joint Review Mission
January 21 – February 5, 2008

TAMILNADU STATE REPORT

0.1 SSA was officially initiated in Tamil Nadu in 2001-02, in partnership between the Government of India and the State government. The State was visited previously by the First SSA Joint Review Mission (JRM) in January/February 2005. As part of the Seventh JRM of SSA a two member team comprising Professor C. S. Nagaraju (GoI) and Dr Michael Ward (DFID) visited the State from 22nd to 29th January 2008. The main objective of the JRM was to review progress in the implementation of the Programme with respect to SSA Goals and objectives and to discuss follow-up action, including capacity issues.

1.2 The Mission got a strong sense that the State is on the move with regard to quality improvement and the introduction of ABL in all the primary schools and the Active Learning Methodology (ALM) in all the upper primary schools has clearly stimulated and excited officials, teachers, students and parents in an unprecedented way. The teaching and learning process in all of the State's 37,486 elementary schools has been transformed through the introduction of ABL and ALM and the Mission was greatly impressed with the way the intervention is being carried out and the speed with which change is taking place.

2.17 In response to concerns about learning levels, the State has taken up in a systematic way two major quality improving initiatives involving comprehensive changes in curriculum, assessment, teaching and learning materials, teacher training and professional support, school organisation, classroom organisation, pedagogy, teaching and learning processes and education methodology. One of them is ACTIVITY BASED LEARNING (ABL) for the primary stage and the second is ACTIVE LEARNING METHODOLOGY (ALM) for the upper primary stage – see the summaries of each of these methodologies at Annexes 3 and 4. These are both well thought out and high quality interventions. The successful programme implementation observed during the visit of the Mission provides considerable scope for optimism in expecting a much higher quality of education in the State in the future. While it is still too early to draw conclusions about the likely development of the reforms in the longer term, so great has been the short term impact that the Mission considers ABL and ALM worthy of detailed treatment in this State Report. Hence it is thought appropriate to provide the salient aspects of the changes observed

Active Learning Methodology

2.34 Popularly recognized as ALM by the educational practitioners at upper primary level, the method involves the active engagement of the student in constructing knowledge. The innovation was developed with the help of 'The School' of KFI and involves major changes in the classroom processes emphasizing the importance of the engagement of the learner with the sources of knowledge and not as a recipient of information from the teacher. In order to ensure its acceptability in the ongoing system of education at the upper primary stage, the changes in classroom processes have been anchored to the existing textbooks while allowing the teacher to guide students in critiquing the knowledge contained in the 'text'. One of the important transactional tools introduced in the classroom through this process is termed as mind mapping.

This device expects students to analyze and map the components of units of text from the textbook during the lesson in the form of a conceptual map. The process provides each lesson with a clear structure: firstly, the teacher introduces the lesson and then guides the students in their reading and processing of the information provided in the selected text in terms of its thematic structure; secondly, the structures generated by each student, the mind maps, are shared and discussed in the class - in this process a consensus on the concepts contained in the text develops, the students formulate questions to facilitate reinforcement of their understanding of the concepts and this leads, in the third and final stage, to a summarization of the knowledge learnt and an evaluation of the students' understanding.

2.35 ALM has been introduced in all upper primary classes in recent months and teachers are being trained to use mind mapping as a tool to consolidate the acquisition of knowledge implied in the textbooks. All upper primary schools visited by the Mission were found to be using mind mapping as the structure for most lessons. To the Mission's knowledge ALM is the first major pedagogical intervention in upper primary education under SSA and, as such, it warrants particular attention. The potential of ALM and the mind mapping technique is at present confined to the available textbooks which have been written for teacher directed transmission of knowledge. The logical and requisite steps to develop the methodology is to revise the textbooks to provide more appropriate resources for students' engagement in constructing knowledge, Hence, the incremental change approach taken by the State, allowing time for changes to be internalized at the systemic level by all concerned, appears appropriate. An effective beginning for such a long run systemic transformation is visible in all the schools visited by the Mission and it can be confidently asserted that, like ABL, this reform is taking place in all of the Government and aided schools in the State. The Mission also observed that teacher support is being provided through the BRTEs and through the EDUSAT facility. As with ABL, the forthcoming reviews of SSA need to focus specifically on this transformation of upper primary education and to support its further development in order to realize its enormous realize its enormous potential for building learning organizations.

Excerpts from NCERT National Curricular Framework 2005 (Subtitles have been added).

Construction of Knowledge

In the constructivist perspective, learning is a process of the construction of knowledge. Learners actively construct their own knowledge by connecting new ideas to existing ideas on the basis of materials/activities presented to them (experience). For example, using a text or a set of pictures/visuals on a transport system coupled with discussions will allow young learners to be facilitated to construct the idea of a transport system. Initial construction (mental representation) may be based on the idea of the road transport system, and a child from a remote rural setting may form the idea centred around the bullock cart. Learners construct mental representations (images) of external reality (transport system) through a given set of activities (experiences). The structuring and restructuring of ideas are essential features as the learners progress in learning. For instance, the initial idea of a transport system built around road transport will be reconstructed to accommodate other types of transport systems—sea and air—using appropriate activities. The engagement of learners, through relevant activities, can further facilitate in the construction of mental images of the relationships (cause-effect) between a transport system and human life/economy. However, there is a social aspect in the construction process in the sense that knowledge needed for a complex task can reside in a group situation. In this context, collaborative learning provides room for negotiation of meaning, sharing of multiple views and changing the internal representation of the external reality. Construction indicates that each learner individually and socially constructs meaning as he/she learns. Constructing meaning is learning. The constructivist perspective provides strategies for promoting learning by all.

Teaching for the Construction of Knowledge

The teacher's own role in children's cognition could be enhanced if they assume a more active role in relation to the process of knowledge construction in which children are engaged. A child constructs her/his knowledge while engaged in the process of learning. Allowing children to ask questions that require them to relate what they are learning in school to things happening outside, encouraging children to answer in their own words and from their own experiences, rather than simply memorising and getting answers right in just one way — all these are small but important steps in helping children develop their understanding. 'Intelligent guessing' must be encouraged as a valid pedagogic tool. Quite often, children have an idea arising from their everyday experiences, or because of their exposure to the media, but they are not quite ready to articulate it in ways that a teacher might appreciate. It is in this 'zone' between what you know and what you almost know that new knowledge is constructed. Such knowledge often takes the form of skills, which are cultivated outside the school, at home or in the community. All such forms of knowledge and skills must be respected. A sensitive and informed teacher is aware of this and is able to engage children through well-chosen tasks and questions, so that they are able to realise their developmental potential.

Active engagement involves enquiry, exploration, questioning, debates, application and reflection, leading to theory building and the creation of ideas/positions. Schools must provide opportunities to question,enquire, debate, reflect, and arrive at concepts or create new ideas. When children and teachers share and reflect on their individual and collective experiences without fear of judgement, it gives them opportunities to learn about others who may not be a part of their own social reality. This enables them to understand and relate to differences instead of fearing them. If children's social experiences are to be brought into the classroom, it is inevitable that issues of conflict will need to be addressed. Conflict is an inescapable part of children's lives. They constantly encounter situations that call for moral assessment

and action, whether in relation to subjective experiences of conflict involving the self, family and society, or in dealing with exposure to violent conflict in the contemporary world. To use conflict as a pedagogic strategy is to enable children to deal with conflict and facilitate awareness of its nature and its role in their lives.

Learning to question received knowledge critically, whether it is found in a 'biased' textbook, or other literary sources in their own environments, can be built by encouraging learners to comment, compare and think about elements that exist in their own environment. .

A pedagogy that is sensitive to gender, class, caste and global inequalities is one that does not merely affirm different individual and collective experiences but also locates these within larger structures of power and raises questions such as, who is allowed to speak for whom? Whose knowledge is most valued?

KNOWLEDGE AND UNDERSTANDING

Knowledge can be conceived as experience organised through language into patterns of thought (or structures of concepts), thus creating meaning, which in turn helps us understand the world we live in. It can also be conceived of as patterns of activity, or physical dexterity with thought, contributing to acting in the world, and the creating and making of things. Human beings over time have evolved many bodies of knowledge, which include a repertoire of ways of thinking, of feeling and of doing things, and constructing more knowledge. All children have to re-create a significant part of this wealth for themselves, as this constitutes the basis for further thinking and for acting appropriately in this world. It is also important to learn to participate in the very process of knowledge creation, meaning making and human action, i.e. work. Conceiving knowledge in this broad sense directs us to the importance ofexamining knowledge in terms of not only the 'product', but also the underlying principles of how it is created, how it is organised, who accesses it, and what it is used for. It suggests that in the curriculum, there must be as much focus on the process of learning, on how learners engage with and reconstruct knowledge, as on the content of what is learnt.

If, on the other hand, knowledge is regarded as a finished product, then it is organised in the form of information to be 'transferred' to the child's mind. Education would concern itself with maintaining and transmitting this store - house of human knowledge. In this view of knowledge, the learner is conceived of as a passive receiver, while in the former there is a dynamic engagement with the world through observing, feeling, reflecting, acting, and sharing. The curriculum is a plan to develop capabilities that are likely to help achieve the chosen educational aims. The range of human capabilities is very wide, and through education we cannot develop them all. The concern is therefore with those that are necessary and significant in relation to our aims, which offer potential for further development, and for which we have some pedagogic knowledge.

Basic Capabilities, Knowledge in Practice

Children's basic capabilities are those that form the broad basis for the development of understanding, values and skills.

a. Language and other forms of expression provide the basis for meaning making, and sharing with others. They create possibilities of development of understanding and knowledge, providing the ability to symbolise, codify, and to remember and record.

Development of language for a child is synonymous with development of understanding and identity, and also the capability of relating with others. It is not only verbal languages with scripts, but also languages without scripts, sign languages, scripts such as Braille and the performing arts, that provide the bases for

making meaning and the expression.

b. Forming and sustaining relationships with the social world, with the natural world, and with one's self, with emotional richness, sensitivity and values. This gives meaning to life, providing it with emotional content and purpose. This is also the basis for ethics and morality.

c. Capabilities for work and action involves the coordination of bodily movement with thought and volition, drawing on skill and understanding, and directing oneself to achieve some purpose or create something. It also involves handling tools and technologies, and the ability to manipulate and organise things and experiences, and to communicate.

Knowledge in Practice

A vast array of human activities and practices sustain social living and culture. Crafts such as weaving, carpentry and pottery, and occupations such as farming and shopkeeping, constitute alongwith and performing and visual arts and sports a valuable form of knowledge. These forms of knowledge are of a practical nature, tacit and often only partially articulated. Many of them involve abilities that are developed. A craft like carpentry involves the ability to conceptualise and design the object to be made, an understanding of its value in the society (socio-cultural, aesthetic and economic significance), knowledge of materials available and the most suitable in terms of quality and cost for the product to be made, knowledge of where to source materials, the ability to plan and execute the fashioning of the product from beginning to end, using one's own skills and sourcing relevant skills from others, maintaining the necessary tools, judging for quality,

It is necessary to realise their curricular significance, not only as forms of work but equally as forms of knowledge, and as mediums for other learning. This important area of human knowledge needs to become a substantial part of the school curriculum.

Forms of Understanding

Knowledge can be categorised based on distinct kinds of concepts and meanings involved and processes of validation and justification. Each involves its own kind of 'critical thinking', its own way of verifying and authenticating knowledge, and its own kind of 'creativity'.

Mathematics has its own distinctive concepts, such as prime number, square root, fraction, integer and function. It also has its own validation procedure, namely, a step-by-step demonstration of the necessity of what is to be established. The validation procedures of mathematics are never empirical, never based on observation of the world or on experiment, but are demonstrations internal to the system specified by an appropriate set of axioms and definitions.

The Sciences, like the systems of mathematics, have their own concepts, often interconnected through theories, and are attempts to describe and explain the natural world. Concepts include atom, magnetic field, cell, and neuron. Scientific inquiry involves observation and experimentation to validate predictions made by theory (hypotheses), which may be aided by instruments and controls. Formalisation into theory and model building can sometimes involve mathematics, but it is only with reference to observations and not to mathematical accuracy that truth is tested. The attempt is to furnish a narrative that in some way 'corresponds' to reality.

The Social Sciences and Humanities have their own concepts, for example, community, modernisation, culture, identity, and polity. The Social Sciences aim at developing a generalised and critical understanding of human beings and human groups in society. The Social Sciences concern themselves with description, explanation and prediction in the social world. The Social Sciences deal with hypotheses that are about human behaviour in collective living, and their validation finally depends on the observations made in the society.

With regard to the process of knowledge formation, Science and the Social Sciences are almost identical. But there are two differences that are of great relevance in curriculum planning. First, the Social Sciences study human behaviour which is governed by 'reasons', while nature is governed by 'cause and effect'. Second, the findings of the Social Sciences often raise issues of ethics and desirability while natural phenomena can beunderstood, raising ethical questions only when theyenter into the domain of human action.

Art and aesthetics have many words in common, such as rhythm, harmony, expression and balance, though giving them new senses or new ranges of application. Art productions cannot be judged against reality or investigated for 'truth'. Although there is amplescope for subjective judgement in art, it is also possibleto educate the artistic imagination to critically assesswhat is good and what is not. Ethics is concerned with all human values, and with the rules, principles, standards and ideals which give them expression. In relation to action and choice, therefore, ethics must be conceded primacy over eachof the forms of understanding. Ethical understanding involves understanding reasons for judgements—forwhat makes some things and some acts right and otherswrong—regardless of the authority of the personsinvolved. Furthermore, such reasons will be reasonsfor anyone; reason, equality and personal autonomyare therefore very intimately connected concepts. Philosophy involves a concern, on the one hand, with analytical clarification, evaluation and synthetic coordination of the aforementioned forms of understanding in relation to life, and, on the other hand,with the whole, the ultimate meaning and the transcendent.

The basic capabilities, the knowledge of practice and the forms of understanding are the core ways in which human experience has been elaborated in the course of history. All but the simplest kinds of human activity draw upon them—the liberal professions, technology, industry and commerce. They are central to human culture. Imagination and critical thinking are linked in obvious ways with the development of understanding and reason, and so are the emotions. Each of these knowledge areas involves a special vocabulary, concepts, theories, descriptions and methodologies. Each provides a 'lens' through which to view the world, to understand, to engage, and to act in it. These areas have developed, and continue to grow, through the contributions of people in the past. They have also changed in their structure and emphasis. A variety of intelligence and forms of knowing come into play while learning these areas: 'formal modes' of explicit reasoning and articulation; looking for and evaluating evidence; 'experiential' and tacit knowing through doing and undergoing the experience; coordinating and observing; and 'practical' engagement,either by oneself or in coordination with others inmaking or accomplishing something, in addressingproblems and issues while charting a course of action.

Layers of understanding

Comprehension: understanding the language, and the (linguistic) contents of what is said. Reference: understanding what is being talked about—what the terms and concepts refer to. Epistemic: understanding what counts as evidence, what makes a statement true, how to seek evidence and judge truth.

Relational and Significant: understanding through developing interconnections between different facts and concepts and weaving them into an interconnected web of 'known things' , understanding relationships between different things, and the significance of each in relation to the other.

Children's Knowledge and Local Knowledge

The child's community and local environment form the primary context in which learning takes place, and in which knowledge acquires its significance. It is in interaction with the environment that the child constructs knowledge and derives meaning. This area has general ly been neglected both in the conceptualisation of textbooks and in pedagogic practices.

Unless learners can locate their individual standpoints in relation to the concepts represented in textbooks

and relate this knowledge to their own experiences of society, knowledge is reduced to the level of mere information. If we want to examine how learning relates to future visions of community life, it is crucial to encourage reflection on what it meansto know something, and how to use what we have learnt.
The learner must be recognised as a proactive participantin his or her own learning.Day after day children bring to school theirexperiences of the world around them the trees thatthey have climbed, the fruits they have eaten, the birdsthey have admired. All children are alive to the naturalcycles of day and night, of the weather, the water, theplants and the animals that surround them. Children,
when they enter Class I already have a rich language base of small numbers, and the rudiments of operations are already in place. Yet rarely do we hear the knowledge that they already have and which they bring into the classroom. Rarely do we ask children to talk about or refer to the world outside the school during our lessons and teaching. Instead we resort to the convenience of the printed word and picture, all of which are poor replicas of the natural world. Worse still, today in the name of computer-aided learning, the living world is being turned into animation strips that children are expected to watch on their computer screens.

Selecting Knowledge

Domains of knowledge have grown enormously, so that it is necessary to select what is to be included in the curriculum. Relevance: This could lead to very functionalist choices, with mistaken notions relating to usefulness in later adult life. This may be completely unsuited to children's engagement in knowledge construction in the present, and hence in no way contributes to learning for the future. Interest: A useful measure, but this should not be reduced to simplistic notions of what children enjoy, such as 'cartoon' figures or games. Rather the measure should be the ability to engage a child and keep her interested and self - motivated to engage in the task at hand. Meaningful: The most important measure. Only if the child finds the activity or knowledge being learnt meaningful, will its inclusion in the curriculum be justified.

Participating in the Generation of Knowledge

Given its intrinsic variability, each manifestation of the environment tends to be unique. Its understanding cannot, therefore, be arrived at solely on the basis of the classical scientific approach of experimentation, calling for extensive replication. Instead, an understanding of such complex systems requires extensive locale-and time-specific observations, careful documentation, and an elucidation of the patterns and underlying processes based on comparisons of systems that differ from each other in some specific ways. There is hardly any good quality documentation available today of the many facets of India's environment, such as the depth of the underground water table, and it is feasible to create such documentation on the basis of student projects. It would be possible to upload the results of such projects on a publicly accessible website, thereby creating a transparent and comprehensive database on India's environment. By inviting not only experts, but also all interested citizens to assess the quality of such projects and augment their results, a self-correcting system could be set up that would lead to an organic growth of our understanding of the Indian environmental scenario and concrete ways of undertaking positive action. Such information collated annually over the years, and also shared with and compared with other regions, and collated centrally would produce a significant understanding of ecological changes and develop a perspective on what is happening and why through comparisons. Including such knowled gegeneration activities as a part of the educational process would also greatly enhance the quality of the educational experience.

Some Key Principles : Some principles regarding the approach to knowledge in the curriculum

:

- Acquiring a critical perspective on social reality and the natural environment through the
- lenses provided by the subject matter.
- Connecting with the local and the contextualised in order to 'situate' knowledge and realising its 'relevance' and 'meaningfulness'; to reaffirm one's experiences outside school; to draw one's learning from observing, interacting with, classifying, categorising, questioning, reasoning and arguing in relation to these experiences.
- Making connections across disciplines and bringing out the interrelatedness of knowledge.
- Realising the 'fruitfulness' and 'openness' of enquiry, and the provisional nature of truth.
- Engaging with 'local knowledge'/indigenous practices in the local area, and relating these to school knowledge wherever possible.
- Encouraging questions and leaving space open for the pursuit of new questions.
- Being sensitive to the issues of 'equality' in classroom transaction as well as established stereotypes and discrimination regarding learnability of the knowledge area by different groups (e.g. girls not being given field-based projects, the blind being excluded from the option of learning mathematics, etc.).
- Developing the imagination, and keeping imagination and fantasy alive

Educational discourse has been aroun three broad issues. Philosophy, content and methodology. There is enough material that points to the agonizing search to humanize school education, to make it child friendly and yet provide inputs that will make for a good education.

Philosophical matters such as the respect, collaboration, care for the environment, particpation in the porcesses of nation building etc are areas that most seem to agree upon rather easily. The NCERT National Curriculum framework 2005 is a very extensive and insightful document.

Content of school education, the subjects, extent, depth etc are agreed upon less easily by people concerned. Some feel that the content is heavy, others argue fo an all round awareness and necessary skills in langauge and mathematics with a knowledge about key historical events. But most agree that the content is heavy and it is seen that the various pulls and pressures are national and state levels affect the content.

Methodology is the least agreed upon. All agree for the need for improvement.

- **More of the same:**
  - More effort will solve the problem is one approach. This is more than merely a perception. Whatever effort we make, however new a direction, the old muscles kick in and so the old methodologies prevail. There is another problem here. Large changes are difficult for people to agree upon. It is far easier to agree upon working harder than on working differently.
- **Make small changes:**
  - Make small changes in the existing methodologies and the situation will change. This is the dictum that prevails by large. It accepts that larger changes are not realistic or pragmatic. It keeps the fires burning. This avenue allows for many different styles and methodologies to coexist, as long as there is no pressure to conform.

- **New arrangements**
  - These usually disturb existing ones and create much discomfort. The price of discomfort is willingly paid only when a large number of people see that it is going to be effective. These are rare windows of opportunity and if seized at the time can bring about lasting change.

- Educational reform has not much headway because new arrangements paint a picture of a future that does not exist now. There are occaisonally some opportunities that are effective in the present dispensation and will continue to be viable with the new arrangements. These are seen as improving the present, but carry within them the potency to change the system of class, administration, infrastructure.

The NCF and Active Learning Methodologies in Tamilnadu

It is wonderful that we have a document like the NCF at the national level, to guide the activities of educational institutions across India. NCF is a mean to evolve a national system that addresses India's diversity of geographical and cultural milieus while ensuring a common code of humane and effective educational values along with academic components. An enabling document, it takes a broad view of human knowledge, and concerns itself with the vital necessity of a learning pedagogy that will facilitate creative and productive individuals.

'Students are not just young people for whom adults should devise solutions. They are critical observers of their own conditions and should be participants in discussions and problem solving related to their education and future needs.'

NCF enables teachers, administrators and their agencies involved in the design of syllabus, textbooks and conducting exams to review, reform and transform their vision and frameworks.

Definition of knowledge

'Knowledge can be conceived of as experience organized through language into patterns of thoughts or structures of concepts thus creating meaning, which in turn helps, understand the world we live in...'

The document explores many levels of understanding and states the urgent need to bring consciousness of these levels to educational pedagogy and practice in schools.

Layers of understanding

Comprehension: Understanding the language, and the (linguistic) contents of what is said.

Reference: Understanding what is being talked about - what the terms and concepts refer to.

Epistemic: Understanding what counts as evidence, what makes a statement true, how to seek evidence, and judge truth.

Relational and significant: Understanding through developing interconnections between different facts and concepts, and weaving them into an interconnected web of 'known things', understanding relationships between different things, and the significance of each in relation to the other.

The document recommends 'constructivist and critical' pedagogies, important in the evolution of a learning space to which the child comes whole-heartedly. The NCF has also encouraged extensive debate with the exam system. It has involved 400 clued and experienced people across the country in 21 focus groups, to help evolve a framework that builds children's meta cognitive processes in the context of active engagement in their own learning - because as it so beautifully puts it,

'the child is a natural learner, and each child is inherently capable of regulating his/her own learning'.

The guiding principles of the NCF 2005 speak of five key criteria:

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

policies of the country

The framework re emphasizes the contemporary curricular focus on moving 'from the known to the unknown, from the concrete to the abstract, and from local to global', in the larger landscape of child rights. While registering a range of social and systemic problems for the fact that '53% of children drop out at the elementary stage and over 75% of our rural schools are multi-grade', the framework moves on to spell out a forward looking long term vision.

It states that the aims of education must 'simultaneously reflect the current needs and aspirations of a society as well as its lasting values', and that 'education must develop the ability to work and participate in economic processes and social change'.

In this broad landscape, the frameworks showcases the active learner.

From	To
Teacher centric	Learner-centre flexible process
Teacher direction and decisions	Learner autonomy
Teacher guidance and monitoring	Facilitates, supports, and encourages learning
Passive reception in learning	Active participation in learning
Learning within the four walls of the classroom	Learning in the wider social context
Knowledge as 'given', and fixed	Knowledge as it evolves and is created - NCF Systemic Reforms, 2005
Disciplinary focus	Multi disciplinary, educational focus
Linear exposure	Multiple, divergent exposure
Appraisal, short, few	Multifarious, confusions

In this context, as well, it would be important to quote the NCF:

- ***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 these kinds in the course of their development
- ***Teaching something before the child is cognitively ready, takes away from learning*** it at a later stage. Children may 'remember' any facts but they may not understand them or be able to relate them to the world around them
- ***Learning takes place both within, school, and outside school.*** Learning is enriched if the two arenas 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 concepts and deepen understanding***, rather than remembering only to forget after examinations. At the same time, learning must provide variety and challenge, and be interesting and engaging. Boredom is a sign that the task may have become mechanically repetitive for the child

and of little cognitive value

- ***Learning can take place with/without mediation.***

The Transformation in Tamilnadu

It would be important to see the development in elementary schooling in Tamilnadu in this backdrop. The ABL and the ALM have their anchoring in the concerns voiced by the NCF and the vision it unfurls.

The New Frameworks: Learner Identity

Activity Based Learning Primary - [ABL]	**Active Learning Methodologies Upper Primary - [MS-ALM]**
Concrete operational school age: 6-10 yrs.	Formal operational adolescence 11-16 years
Ego development outcome: Industry is inferiority.	Adolescence : Identity vs. Role confirmation
Basic Strengths: Method and competence	Basic strengths: Deepening vulnerability
Most significant Relationship:- Family , school	Most significant Relationship: Peer groups, Neighbourhood
Learning by Doing	Learning to Learn

The New Frameworks : The Learning Classroom

ABL	**ALM**
Multiple activities to reinforce particular concepts	Role of approaches to same content
MI Classroom	MI Classroom
Non competitive atmosphere	Democratic classroom
Multi disciplinary activities	Scope for multidisciplinary learning enrichment contexts
Room for different kinds of learners	Room for different learning styles
Different abilities coexist.	Different abilities coexist.

The New Frameworks: Pedagogy

ABL	**ALM**
Laddering	Chunking
Steps made visible to the students	Sequenced reading process builds on analysis of content
Information is completely learner friendly	Information is constructed by the student as knowledge through appropriately graded learning process
Mastery is established in small stages	Text is divided into appropriate units
Self-assessive achievement	Self assessment formats available
Anchored in learning activities	Appropriate learning activities, and experiments included in relevant learning formats
Learner centered	Learning centered

The New Frameworks: Teacher's Role

ABL & ALM
Define teacher's role most sharply
Facilitation is critical
Role dependent on understanding the framework
Begins from where the learner is - ease and fluency
Role involves non academic areas
Concerns the person of the teacher as well - the teacher is open to learning
Involves sensitivity to community concerns and possibilities
Role is vibrant, dynamic, productive , reflective

The New Frameworks: Materials and Processes

ABL	ALM
Focuses on cards and workbooks	Continues to use the state-board textbooks
Textbooks kept in the picture	Lesson plans completely process-oriented and involves learning activities
Other skills are interwoven into the learning process	Other skills have been built into these activities; role play, presentations, experiments, etc.
Material, space, and class size are critical	Material, space and class size are not critical
Inbuilt multi skill inputs	Mobile lab, Learner empowerment, and enrichment areas being envisaged for inclusion
Scope for ICT	Scope for ICT
Scope for Movement of community in materials and processes	

Advantages of the Multi-Grade Classrooms

Younger Children in a Learning Context with Older children

LEARNING:

- Older Children: Constantly reinforced
- Independent individuated learning
- Cooperative DIscipline
- Social Skills mature early
- Suitable for the tenets of the 'new' curriculum.

Common Educational Vision: Classes 1-8

- Learner centered classroom practice

- Education through learning activities
- Involves individual, small group and large group work
- Learners move from the known to the unknown
- Children learn a little at a time
- There is time for review and recap where needed
- Disciplines are correlated by a common methodology and pedagogic approach
- Democratic framework of class activity
- Many aspects of the concerns expressed in the NCF are addressed by the present format
- For example, the Table given in Pg. 19, Chapter 2 of the NCF correlates deeply with the principles of formatting of the MS-ALM.

The importance of 'facilitating reflection' in the growing child cannot be overstressed. It is important to provide these children access to facilitate atlases, dictionaries, or relevant supplementary and work books simple lab., and most importantly, time to work, and the materials that will encourage the reading habits is critical and provide well equipped mobile libraries, and labs. would be a viable way of kindling the spirit of curiosity and exploration in the student. In this, too, the NCF has a definitive statement to make.

As such, therefore, it is clear to us that ALM can come into practice in DIET colleges along with a range of Active Learning strategies, given this. visionary curriculum.

Sumitra M.Gautama
Jan 2008

Schooling is about physically moving from home to school. It is about being with friends of the same age. Schooling is about sitting in classes, listening to the teachers' instructions or being taught things one does not know. Schooling is also about growing up from a toddler who can barely speak to one who in 5 - 6 years becomes reasonably proficient at a language, one who can read, write and think.

Schooling is also remarkably passive for the student. School is a passive place and at home one is expected to become active with the homework and give evidence of listening, absorbing, understanding etc. Of course the test of all this is in the tests and exams.

Is there another approach to teaching and learning? Something that is sound not just for classes of today but for schools of tomorrow? Is there a way of not fragmenting life into academics and extra curricular?

Let us consider a student who comes to school at age 9 or 10. This young person has learnt to read and write. The present education system taps this capacity sporadically, infrequently and without clarity. The main issue in most classrooms is attention. Can the capacity to read, comprehend, think on what has been read become a **daily consistent** feature of school?

It needs to be stated bluntly that anything read, or offered by anyone, constitutes second hand knowledge. Understanding the world or an idea through the eyes of the teacher, an author or even the original propounder is second hand. Schools have been stuck with second hand knowledge, however much they have wished to be otherwise. Schools in their movement have struggled with rote learning. This is probably so because the processes and structure of schools have been deeply rooted in the idea that one learns through being told, one learns from another. All questions that protested this understanding were elevated to the level of philosophical ponderings.

Now, this is not to say that all reading is useless. At the same time just reading or listening does not seem to be enough in the relationship with knowledge. When one reads something, if one finds it appealing, one nods, agrees and there is a sense of happiness. One also assumes on reading or listening that one has understood what has been written or spoken. This is an assumption as a simple experiment will tell us. If two individuals read a small passage together and try and indicate what was the central idea, the differing percetions will show that we have our own way of understanding things. This may or may not be in line with the author's intentions. It is important to grow aware of one's understanding and on reading or listening. Next it is important to seek some clarifications. This will either provide echoes for what we have understood or add new dimensions. Listening carefully we **travel further in our understanding.** Thus reading or listening is the first step of understanding. The journey does not end here.

Reading and writing are individual activities, unless one is reading aloud for others to hear. Reading involves comprehending words. Reading also demands listening to what the writer wishes to communicate. Understanding means gathering relevant details and getting a sense of what one has read. Alertness and attentiveness demand that one understands that **whatever one is listening to, or reading is another's viewpoint.**

This fact is particularly important now since the individual is being bombarded with information, viewpoints, images, advertisements, each attempting to convince, convert, influence, indoctrinate, affiliate. The internet is only the latest in a series of devices. A lot of the information we handle is in words.

Recognizing the second hand nature of most knowledge is very important to help one navigate intelligently through life. **Schools induct the young into passive learning and unwittingly become part of a second hand culture.**

It appears that exercising one's capacity to read, write, comprehend, doubt and question must form the **daily** basis of one's education in school. This seems so obvious that one may be tempted to ask `is this not happening?' This is surely broadly intended but equally surely happens sporadically, rarely, certainly not in a manner that builds inner muscle and capacity. **Has the written word, providing a toehold for ideas, crippled the human mind?**

The internet along with information technology, more than any other force, is making the formal role of teaching redundant. The teacher with the blackboard and chalk, with a text book is already a gray colourless relic. The colourful, evocative, cross linked, multimedia presentation of information has moved and pushed the teacher to another location.

Is the teacher deeply concerned with the emergence of thinking minds that will not rest with second hand knowledge? Are institutions interested in this?

Could a school require the student to work alone as well work with others alternatively? Can students be informed that the challenge of a thinking mind requires that each person thinks and considers what is written and spoken? Can such an understanding percolate school structure and processes?

An individual who addresses these questions can come up with many possibilities. Can we consider the following as one for middle and senior school?

G.Gautama 1999
(modified Oct 2007)

- towards fostering individual autonomy and intelligent coexistence

Indian schools as schools everywhere have to stay relevant to the context of our times. **The accelerating speed of change is pushing schools to recognize that**

- whatever we are doing now, it does not matter what, can be improved; nevertheless we need to be effective
- our children / students will live in a rapidly changing world and will need to learn continously
- what we teach is less important than what children / students learn
- working and learning are not necessarily sequential

In the 21st century some notions are growing clear

- he who can learn will have an advantage over one who needs to be taught
- he who needs to be handheld will rapidly be expected to function intelligently, independently
- independence does not mean isolation
- collaboration does not mean one does not have to think for oneself
- reading carefully and expressing correctly are very important skills
- listening and speaking are very important skills

The challenge before schools is to reorganize and reconfigure the arrangements so that the fundamental thrusts can be effective. The exciting opportunity for schools is to deeply digest the fact that, in a changing environment, only those pegs which are at the heart of many things, at the hub, are important,.

- "learning what things can I have knowledge of many things, if not all things?"
- "how can such a learning be communicated?"
- "what doings, structures, relationships, norms, atmosphere would create the right climate for such learning to happen?"

With these questions rising to the surface of the educational debate it appears that schools have to regroup, restructure, reorganize time, space and structure. The way ahead is to revisit old methodologies and polish them with the dust probably, of even older practices. We need to delve into the experience of our land, and all civilizations. **We need to locate values and principles that have stood the eroding test of time, the diluting influence of repetition and stood firm while human societies have changed dramatically.**

It seems a tall order to find a set of things which individuals, from different parts of India, from different countries, can agree without conflict of interest, as important for their young, Much as the circle defines the centre, fortunately there appear to be some points which can be agreed upon by all.

School education **can** happen around a New curriculum, not of reality divided into specialized subjects but, around differently organized learning, learning around eternal issues which contain the subjects? The outline below attempts to shape a definition for a starting point.

healthy & safe living
daily routine
anatomy, healthy living in different paradigms
body posture -sitting , reading, writing without getting tired, food & chewing
awareness of body & feelings
touching rules
non harassive peer relationship

do you know how to eat and live healthily?
do you know how to be safe and create safety for others around you?
can you ask for help when you see matters getting out of hand?

resourcefulness
always many solutions to a situation
generate alternatives, another opinion
communication - speaking your mind (don't worry about completeness)
decision making skills (swot, all solutions have disadvantages)
asking for help
de bono, problem soving, critical thinking.

what are your resources? physical, mental, emotional, creative?
do you know how to use them ?
are you on a narrow base or are there wide possibilities?

information access & action
search, alternate views, perspectives
understanding / comprehension/
listening, reading, expressing
insight

do you know how to look for information?
do you know what to do with information?
what do you do when faced with alternate viewpoints?
to what sources of information are you open?
learning from different disciplines - sciences, arts, social sciences.
do you now how to take a debate forward?

working together / What to do with feelings?
different points of view
thoughts & feelings
questions for clarification
echoing, voicing what one has understood
'if i were to do it again'
relationship with peers and adults - collaboration
respect

do you know how to be with other constructively ?
do you know how not to be invalidated or subsumed by peer culture?
are you clear that respect for the other is not a conditional matter for you?
do you know how to intervene in an ongoing process effectively, healthily?
do you understand your feelings and those of others?
do you know what to do when you feel someting or when you see emotion?
how is insight different from an opinion, a point of view?

Teaching – Learning, a process approach **Appendix 5**

Usually teaching refers to what a teacher does to facilitate learning among students. Students learn when they listen, read, discuss, write, make a model etc. No one mode is enough or sufficient for one person. The same mode works differently at different times for different individuals.

Usually the schooling process is built on 'things to be learnt' list, the syllabus. Can we try to construct this process on the daily life of child and the child's perceptions?

If a child were asked, "What would you like to say at the end of a school day?" What would we hear? At one level this seems too braod a question, one that different people will answer in their own way. When a group of 40 teachers were posed this question, as to 'What would they like to be able to say at the end of a workshop session', the answers were surprisingly is just three categories:-

- I have learnt something useful
- My time has been interesting
- I would be happy to the return the next day...

When a group of 30 children in middle school were asked these same questions, the answers were surprisingly similar.

If a student does not find schooling 'useful' in his/her scheme of things, it is unlikely to be effective or find the student's cooperation. If a child does not learn even one new thing is a full school day, then what has the school day meant? Lastly if the flavour of the day does not attract the student, but for any reason becomes a burden, again we lose the child.

If **each** child can say at the end of a school day that he/she has **learnt one useful thing and one new thing in a school day** then the child's school year is likely to be productive in the eyes of teacher, school, parents & society.

Can a teacher think-feel his / her way through with these as the basic guidelines? Can a teacher, ensure this or move in this direction?

It is obvious that no one except I will know if what I have learnt is 'useful to me'. So this direction cannot be walked without trying to understand what the student feels. It also opens the door for purposeful and collaborative communication with children, with each child. This also opens the door for participation from the child in the educatioal process.

If a child knows the agenda and knows that he/she will be taken seriously, the teacher will receive meaningful feedback. If a daily exercise happens at the end of the school day, checking if the student has -

A teacher must grow alert and modify proceedings if a child says – no, to the first 2 questions for (say) 3 days running.

G.Gautama
19 July 2006

Teacher's Log and and a Listening Post

Is it valuable for the teacher to keep a daily log, a brief telegraphic factual and impressionistic log? Can this be daily sent to another colleague? A dialogue can emerge at best and some qns can be explored deeply. At worst, there will be awareness and transparency about what is happening in a class. May be the situations encountered may find local and small solutions / resolutions before they become problems.

Date	Happenings, specific and general	Celebrations	Questions / concerns	Anecdotes	

Lesson Planning

This section covers:

1. Elements to be planned in terms of the ALM
2. A TO DO checklist before the teacher enters the class
3. HowW to mqke
    1. an Overall Chapter plan
    2. a unit lesson plan in the various formats
4. 4.Some sample lesson plans

The term

- **Unit lesson plan** refers to the plan of one session, a unit of classroom transaiction
- **Chapter - plan refers** to the set of units plans that add up to the full chapter, including the assessment

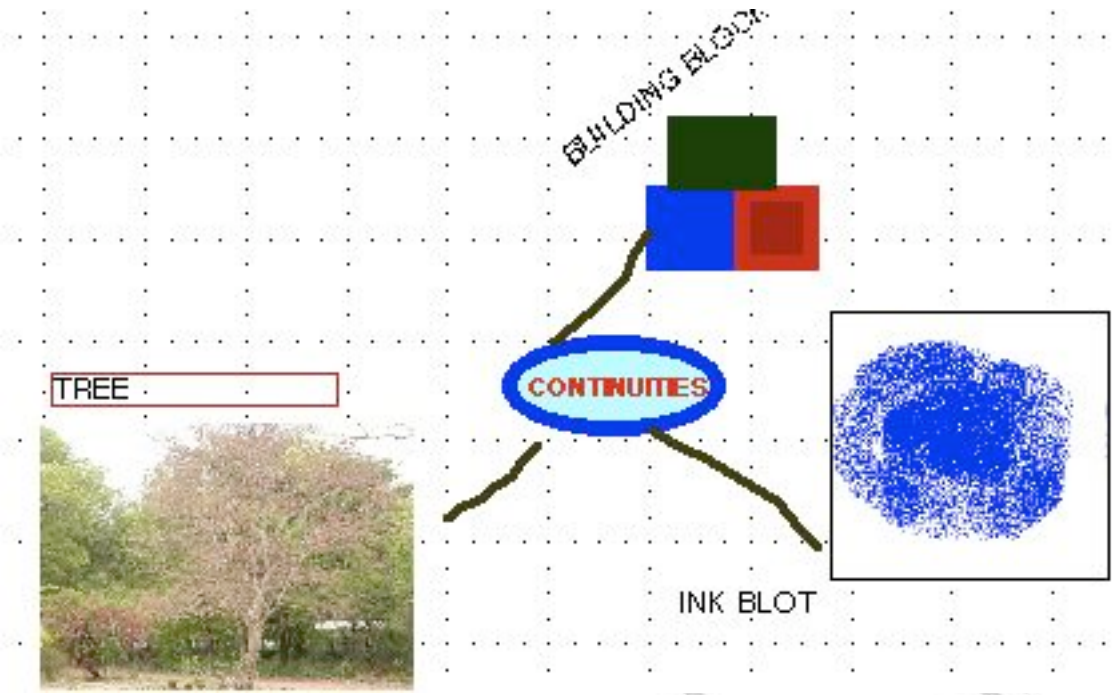
For example, **Chapter - plan** is for the whole chapter on Photosynthesis and the unit lesson plans will be for each unit of the transaction.

a. Elements to be planned in terms of the ALM

To plan a lesson effectively, a teacher needa to:

1. Grow familiar with the content
    1. It is recommenede that a teacher does what is suggested tot he student - browse, read, find out meanings of difficult words, identify key ideas/themes and flesh them out with facts..
    2. Think about how to contextualize the learning for the student.
    3. Think about how to widen and deepen the learning for the student
    4. It is recommended that the teacher attempt to have an overview- to see the where this lesson fits in the learning of the child, in this topic, over the three years of the middle school.. Such an overivew can be attempted through a mind map.

2. Undestand the nature of information to be transacted
    1. Broadly speaking, all information
        1. either **builds on prior knowledge** as a Continuity**. I**t may be necessary to go back to some basic concepts to proceed. Has this topic been dealt with in an earlier class—if so in what depth? Will it be dealt with again in the following year?
        2. or **stands alone** as a separate point- Knowledge that stands by itself, discrete, fairly cohesive and contained in itself. Emphasis in learning and teaching – concepts and facts within the unit Interconnections within the unit



1. Continuities could be of 3 kinds:
    1. Building blocks
        1. Like a child who builds a house with blocks- one block is built over the other. One block cannot be built without the other
        2. Emphasis is on specific knowledg
    2. Tree
        1. A central trunk is established first and many branches can grow around it. It is important to build the central trunk clearly and strongly
        2. Specificity in the central trunk is necessary. Branches could be questions, could be cross connections, sub areas etc
    3. Inkblot
        1. Similar to an inkblot- spreads gradually outward in all directions
        2. A thought is seeded and grows gradually over time
        3. Emphasis is on getting a working sense of the area of learning – metaphors, examples, thinking questions are useful here
        4. e – definitions , fact tests etc are useful here
    4. It may be helpful to classify chapters and concepts this way because it determines emphasis in teaching. For example, if one is learning about plants:
        1. **inkblot** continuities would include the student's growing relationship and observation of plants
        2. **building block** continuities would include understanding basic processes of photosynthesis, transpiration etc. Without these one cannot build further.
        3. **tree** continuities would include all the various functions that in detail about the physiology of the plant which is the central trunk.

1. The Basic Template of the Teaching Learning in the ALM
    1. Mandatory Elements of the plan and why
    2. Most lesson plans embody the following components:
        1. Introduction to the lesson
            1. the introduction connect earlier learning or a real life observation in the area of the lesson. It helps to work from the known to the unknown.

2. It invites the student to set aside preoccupation and gradually focus on the topic- offers an invitation to engage.
3. It could be an evocation
4. It could also set out the learning outcomes of the chapter
5. It could raise questions on which the student builds

2. Understanding
    1. The understanding component aims to facilitate the student in grasping the main concepts, building associations around it.
    2. Grappling involves raising questions for clarifications.

3. Consolidation & Reinforcement
    1. Involves going over the understanding
    2. Helps to sift the main ideas from subsidiary ones
    3. Helps to organize facts around the concepts.
    4. Widens the understanding by connecting it to related areas.
    5. Provides an overview of how the author has explored a topic, the areas covered, the areas left unexplored
    6. Explores areas of relevance and application for the student
    7. It helps the student revisit questions asked at the beginning of the lesson
    8. Helps reiterate the main theme or points of the lesson.
    9. Emphasis can be built effectively at this point.

4. Assessment is to understand where the student is at the end of the transaction-
    1. what concepts have been understood clearly
    2. what concepts have been understood inaccurately
    3. what facts need consolidation etc.
        1. It can be done in many formats – tests, quiz.
        2. Also be a self assessment/ peer assessment

5. Remedial happens when assessment when the gaps in the understanding. are down
    1. These gaps are addressed by remedial teaching.

6. Mandatory Elements for the Student- A Recap
    1. Reading : implies underlining key words and finding the meanings of words the student is not familiar with.
    2. Drawing Mind maps
    3. Summarising in any of the formats suggested in the student tool kit
    4. Discussion in
        1. Large Group----- All Students
        2. Small Groups ----3/4 students, maybe 5
        3. Pair----------2 students
    5. Writing

The student toolkit may be consulted at this stage to get a more detailed understanding.. A more detailed correlation with brain physiology has already been made in earlier sections

1. Be aware of the various methodologies that can be used
2. Be aware of the learning outcomes

3. Match content and method in a **deliberate** and informed way; thus decide the formats for the particular chapter
4. Some formats have been suggested.qhich canill help in evolving my own frame of the transaction of the content
5. Plan with time in mind
6. I read the lesson plans that have been prepared and take a decision on where I follow them and where and why I deviate
7. (If I have already prepared lesson plans)

The subheadings that follow lay down the basic frame of all the above steps.

The Nature of Information

Understanding Learning Outcomes

A very important step is to grow aware of our unconscious educational objectives. There is much to be gained by making these explicit, visible..

- Describe what the mythical "average" student will be able to do by the end of the session to demonstrate increased knowledge, improved skills, or attitudinal change.
- Form questions on the content to help you.
- Goals, or objectives, could be performance-based and usually begin with, "Learners will" .
    - Objectives, clearly stated, motivate students and offer precise directions on the lesson content, so you will want to substitute vague words such as "know," "understand," "appreciate," or "realize" for performance words such as "list," "demonstrate," "describe," or "compare."
- Example:
    - Learners will list and illustrate on a poster three foods that cows typically enjoy.
    - Learners will demonstrate _____ through a survey that determines _____.
    - Learners will describe a business proposal for an elephant conservation plan in state parks.
- Different learning outcomes can also be identified for different students.

Elements of the Plan and Possible Methodologies

"What is the best possible combination of appraoches, among the many possibilities, that will help me achieve my learning outcome?" is a question that can be consciously answered with great advantage by the educator and great the student

Introduction

Story,
Reading out intro in textbook
Asking what students already know about the topic
Listing learning outcomes on the board
Identifying questions
Activities that stimulate interest - experiment etc

Understanding

Reading
Mind mapping
Self study with guiding questions
Paired study with guiding questions
{Survey/Browse Read, Recite} of SQ4R format

Answering a set of questions
Role Play
Experiments
Diagrams with extended labeling
Explaining to another person what I have learnt
Reciting to oneself—going over the ground for myself
Direct experiential learning

Consolidation

Small group discussion
Review and Reflect of SQ4R

Summarising

Chalk and Talk by teacher
Large group discussions
Mind map
Tabulation
Written work
Student presentations
Diagrams

Reinforcement

Diagrams / Charts
Recap by students/teachers
Experiment / Observation
Written work
100 point sheet with random 10 point quiz.

Assessment

Tests – objective 5 minute tests, long tests
Quiz
Problem solving exercises-application
Student self assessment
Peer assessment

Remedial

Revisiting the chapter either with individual children or in a group if necessary.

As you can see various options are available at each stage of the process.The same technique can be used for different purposes in different lessons. It's good to have a blend of techniques.

IN THE DIFFERENT FORMATS: A TEMPLATE

Emphasis in the ALM is clearly on the student learning. In the nitty gritty of lesson planning it is important not to lose this focus. For example, in every lesson plan in the introduction there are a set of guiding questions which focus the reading. This is to help the teacher be familiar with the main ideas or themes of the lesson. If that is given to the student, straightaway it will prevent the students from asking themselves, "What are the main ideas of the passage? Why do I think these are important concepts?"

Similarly in the consolidation and reinforcement a mind map and summary is avail able with the teacher. If the teacher puts it up on the black board and asks the student to copy it , it becomes extremely passive. If however the teacher and the student evolve the final mind map and summary together, sharing their ideas and thinking it will be an enriching experience for the student.

Another example is in the SQ4R Method, when questions are to be elicited from students, the teacher can simply ask students to put down the main headings and subheadings as questions. This will completely leave out questions of wonder or questions based on the child's observation that may not be text based.

The same technique can be used both passively and actively depending on the orientation of the teacher. However carefully a lesson plan is articulated, the teacher must clearly be rooted inwardly in facilitating an "active" learning for the student. Great attention must be exercised in watching for passivity creeping in.

A lesson plan is broken into various units based on the time available. For example, a lesson titled Photosynthesis may be transacted for a duration of time- say 90 minutes, thrice a week, for two week. Each transaction is titled a unit. In this particular example, there are six units of 90 minutes each.

Lesson plans include :
1. Chapter plan
2..Unit plan for each unit in the chapter

For example, the Chapter Plan on Photosynthesis and the unit plans will be for each unit of the transaction.

The **Chapter plan** contains the following:

1. The Chapter Title
2. Continuities with the previous year's lessons and with the lessons to come the following year.
3. The unit – time – format/methodology chart. This chart gives the break up of the lesson into units based on time available.
    1. The format or method to be followed could be one of four: Self Study /Paired study/ SQ4R / Diagram & Chalk and Talk.
    2. The content specified may not be in exactly the same order as the text book.
    3. The content subheading numbers may not be exactly in the same sequence as the textbook.
4. Skills addressed.
5. The overall mind map of the lesson.
6. The overall summary of the lesson.
7. Overall Lesson Enrichment Activity Plan: A list of activities to be done in class is included. Some lessons have a dedicated activity unit.
8. Overall Lesson Assessment: This gives some important topics / question that can be used for assessing knowledge of essential facts and concepts covered in the lesson.
    1. The teacher can also use the questions given at the end of the chapter in the textbook, (if there are any)for this purpose. If time permits, assessment could be done as a separate unit.
9. Writing: In some lessons a separate unit for written work has been allotted. In case a dedicated time has not been allocated then such exercises could be given as homework.

Unit lesson plan

This gives the details required for conducting each unit. It varies with the format / methodology followed. **Four** different types of unit plans corresponding to the four types of formats/methodologies have been given below.

Sample ONE of an CHAPTER PLAN

1. Title: Cell Structure
2. Continuities
3. Unit - time – format chart.
    1. The overall time available for the unit is 8 periods.
4. The lesson is broken up into the 3 units of 90 minutes each and two units of 45 minutes

        1. Structure of plant cell

Structure of plant cell	**90 mins**	**Self study format**	
Structure of an animal cell	**90 mins**	**Diagram and chalk and talk format**	
Comparison of plant and animal cell	**90 mins**	**Paired reading format**	
Enrichment Activity	**45 mins**	**Specified**	
Assessment	**45 mins**		

1.

5. Skills addressed:
    1. reading,
    2. mind mapping,
    3. drawing,
    4. summarising
6. Overall mind map of the lesson (not enclosed here)
7. Summary of the Chapter (not enclosed here)
8. Chapter Enrichment Activity ------45 minutes
    1. An onion peel can be mounted on a slide and showed under the microsope.
    2. Similarly a buccal smear can be taken and a slide prepared and shown to students.
9. Overall Lesson Assessment Activity -----45 minutes
    1. What are the important elements of a plant cell? Name them and state their functions
    2. Draw and label a plant cell
    3. Draw and label an animal cell and name the parts
    4. Comparison of a plant and animal cell
    5. The end of the chapter questions in the textbook can also be taken into account
10. The written work is to be given as homework at the end of every unit since there is no extra period allotted for this.
11. UNIT LESSON PLANS for Each Unit as per specified format

Note: The timing for all formats has been worked assuming that a unit is transacted over 90 minutes. In doing this, the written work gets relegated to home work. If time permits separate time can be set apart for written work in the lesson plan. In the context of the ALM in the state schools, it is recommended that the written work include answering questions at the back of the chapter.

Sample TWO - The Self-Study format

This format contains all the elements considered essential for the students learning. It is a simple format to use. It focuses on the student reading, drawing mind maps summarizing and discussing. It is useful where reading material is simple.

Elements of the Format	Formations	Timing	
Introduction	Large Group	10 minutes	
Reading	Individual	30 minutes	
Mind map	Individual		
Summary	Individual		
Discussion of mind map and summary	Small group	20 minutes	
Consolidation and reinforcement	Large group	30 minutes	
Assessment	Individual/small group/large group		
Remedial	Large group		
Writing	Individual	Home Work	

Some elaboration on each of the elements of the format are given in the table below:

Elements of the format	Some Possibilities to consider
Introduction	
	Evocation to kindle interest –story, anecdote
	Students sharing questions that they may have on the topic
	Linking to prior knowledge
	Showing an experiment
	Using Charts, pictures
	Showing specimens
	Setting/ evolving guiding questions for reading
	Sharing of what the student is expected to know at the end of the chapter
	Connect to the Overall Lesson mind map
Reading	
	Underline Key Words
	Identify words whose meaning is not known
	Clarify meaning using dictionary/ask peer/ ask teacher
	Teacher can make a list of new words with meanings if a dictionary is not available
Mind map	
	Draw mind map and share individual maps in the small group
Summary	
	Summarise individually and share in the small group
Consolidation and Reinforcement	
	Presentation of a few mind maps done by students
	Students and teacher evolve a common mind map and summary
	Going over key words
	Observation/ identification of specimens/ diagrams
	Demonstration of small experiments
	Exploring applications of learning
Assessment	
	Quiz
	Match the following
	Fill in the blanks
	Short answers
	Draw a diagram
	Label a diagram
	Tabulate etc
	Based on “What the student is expected to know” at the end of the unit
	Student self assessment/ peer assessment
Remedial	
	Going over the incorrectly understood concepts
Writing	
	Writing Exercises of Various kinds

A Unit Lesson Plan in this format will contain:

1.Nature of Information
2.Unit – content - time chart
3.Content list
4.Skills addressed
5.Introduction including guiding questions for reading.
6.Reading.
7.Mind Map of the unit
8.Summary of the unit
9.Small group discussion
10.Consolidation and Reinforcement.
    Presentation
    Evolving a common mind map and summary along with the teacher.
    Teacher summary.
    Activity (if any)
    Any other. (if any)
11.Assessment based on "What the student is expected to know".
12.Remedial.
13.Writing

Sample THREE - SQ4R format—learning through questioning

SQ4R is an acronym that stands for S—Survey, Q- Questions, R- Reading, R- Recite, R—Review and R—Reflect. [Recite in this context means organize the learning – mind map and summary, memorise definitions, formulae etc, R—Review, go over the learning)
R—Reflect (think about what is learnt –go back to the questions to see what ground has been traversed.)].
The emphasis in this method is on questioning. The student converts the main and subheadings into questions and also raises questions he may have. This is done first as an individual exercise. The questions are discussed in an open forum. All manner of questions may be raised from the trivial to the imaginative. The teachers' role is
to encourage questioning (giving room for the child's imaginative questions besides content related questions), guide the process and ensure that essential questions are not left out.
These questions are revisited in the review and reflect activity to see how the ground has been covered. This is a good method where conceptual understanding is important, the material is well organised and where understanding may not be as easy.

Elements of the Format	Formations	Timing
Introduction	Large Group	20 minutes
Survey (browsing)	Individual	
Identifying Questions	Individual	
Discussion of Questions Large group		
R- Read*	Individual	20 minutes
Recite -Mind map, memorise	Individual	
Summary	Individual	
Discussion of mind map and Summary	Small group	20 minutes
Consolidation and reinforcement- R--Review—Go back to initial questions R—Reflect—Think about/ discuss what has been learnt	Large group	30 minutes
Assessment	Individual/ small group/ large group	
Remedial	Large group	
Writing	Individual	Home Work

* Reading may also be done in pairs if the content is difficult/ dense.

Some elaboration on each of the elements of the format are given in the table below:

Elements of the format	Some Possibilities to consider
Introduction	Evocation to kindle interest –story, anecdote
	Linking to prior knowledge
	Showing an experiment
	Using Charts, pictures
	Showing specimens
	(any/all of above if time permits)
	(S of SQ4R)- Survey: Similar to browsing a book in a shop
	(Q of SQ4R) -Guiding Questions for reading Refer ****
	First R (of SQ4R) -Reading
	Underline Key Words
	Identify words whose meaning is not known
	Clarify meaning using dictionary/ask peer/ ask teacher/ Teacher can make a list of new words with meanings if a dictionary is not available
Second R of SQ4R	Mind map
	Memorise
	Draw mind map and share individual maps in a group/memorise formulae, definitions etc. summarise individually .
Second R of SQ4R	Summary
	Discuss mind map and Summary in the small group
Third and fourth R of SQ4R	Consolidation and Reinforcement
	Presentation of a few mind maps done by students
	Teacher and students evolve a common mind map and summary
	Teacher summarises going back to the questions and see the ground traversed
	Going over key words
	Observation/ identification of specimens/ diagrams
	Demonstration of small experiments
Unit Assessment	Quiz
	Match the following
	Fill in the blanks
	Short answers
	Draw a diagram
	Label a diagram
	Tabulate etc
	Based on what the student is expected to know
Remedial	Going over the incorrectly understood concepts
Writing	Writing exercises of various kinds.

A Unit Lesson Plan in this format will contain:

1.Nature of Information

2.Unit – content - time chart

3.Content list

4.Skills addressed.

5.Introduction.

- Survey
- List of questions based on Individual list and subheadings
- Sharing questions
- Preparation of Consolidated list

6.Reading.

7.Recite - Mind Map of the unit, summary of unit and memorization of formulae and definitions.

8.Consolidation and Reinforcement.

- Review
- Presentations by students
- Evolving a common mind map and summary
- Teachers summary.
- Reflect – revisiting questions
- Activity (if any)
- Any other. (if any)

9.Assessment based on "What the student is expected to know", and questions at the end of the chapter.

10.Remedial

11.Writing

Diagram and Chalk and Talk

This method is useful when the unit is full of diagrams particularly in Biology. In this format the emphasis is on drawing and listening. The student draws diagrams as a way of getting introduced to the topic. The teacher builds on the diagrams and explains important concepts. The student then reads the material and consolidates his understanding by copying the mind map and summary of the teacher. However if time permits then it would be best for the student to individually draw mind maps and summarise first and then evolving a common mind map and summary with the teacher and other students in a large group.

In some cases as in Physics and Chemistry an experiment may precede the diagram or follow it. In this format the emphasis includes observation as well. In all other aspects the lesson format remains the same.

Elements of the Format	Formations	Timing
Introduction	Large Group	10 minutes
Drawing Diagrams	Individual	30 minutes
Explanation –Chalk and Talk	Large Group	
Reading	Individual	20 minutes
Mind map	Individual (if time permits)	30 minutes
Summary	Individual (if time permits)	
Consolidation and reinforcement	Large group	
Assessment	Individual/small group/large group	
Remedial	Large group	
Writing	Individual	Home Work

Some elaboration on each of the elements of the format are given in the table below:

Elements of the format	Some Possibilities to consider
Introduction	Evocation to kindle interest –story, anecdote
	Linking to prior knowledge
	Showing an experiment
	Using Charts, pictures
	Showing specimens
	Sharing of what the student is expected to know at the end of the chapter
	Specifying the diagrams to be drawn
	Connect to the Overall lesson Mind map
Drawing Diagrams	Students draw the specified diagrams from their textbooks and label the parts
	Teacher draws them in parallel on the board for the purpose of her explanation
Chalk and Talk	Teacher uses the diagrams drawn and other diagrams in the textbook to elaborate the main concepts and facts of the unit
Reading	Underline Key Words
	Identify words whose meaning is not known
	Clarify meaning using dictionary/ask peer/ ask teacher/
	Teacher can make a list of new words with meanings if a dictionary is not available
Mind map	In this method the student copies the mind map put up by the teacher on the board or on a chart..
Summary	The summary of the teacher is also put up and the student copies it.
Consolidation and Reinforcement	Teacher summarises using unit summary
	Presentation by students
	Going over key words
	Observation/ identification of specimens/ diagrams
	Demonstration of small experiments
	Activity/observation
	Large group discussion
	Any other
Assessment	Quiz
	Match the following
	Fill in the blanks
	Short answers
	Draw a diagram
	Label a diagram
	Tabulate etc
	Based on “What the student is expected to know” at the end of the unit
Remedial	Going over the incorrectly understood concepts
Writing	Writing exercises of various kinds

If time permits, the mind map and summary can be done individually. In that case, a common mind map and summary is evolved together with the teacher and other students in the consolidation and reinforcement time.

A Unit Lesson Plan in this format will contain:

1. Nature of Information

2. Format/method and time
3. Content covered.
4. Skills addressed
5. Introduction
6. List of diagrams/experiment
7. Reading content.
8. Mind Map of the unit
9. Summary of the unit
10. Consolidation and Reinforcement
    Activity/ experiment (if any)
    Teachers Summary
    Discussion
    Presentation (if any)
    Any Other (if any)
11. Assessment-"What the student is expected to know" at the end of the unit
12. Remedial
13. Writing

Paired study with Sequential Content

In this format, students are paired together and the content of the lesson is divided among all the pairs in the class. Some parts may repeat for some pairs if the number of students in a class is large. After reading, mind mapping and summarizing, the different parts are presented in a sequential fashion to the whole class.

The advantage of this method is that it is possible to combine a student who reads well with one who does not. It is also supportive of hesitant readers as the portion that they have to read and present is small. It saves time. It is best for lessons that have stand alone units that make sense in themselves – where understanding is not very much dependent on what goes before or what comes after.

Elements of the Format	Formations	Timing
Introduction	Large Group	10 minutes
Reading	Pairs	30 minutes
Mind map	Pairs	
Summary	Pairs	
Presentation	Large group	50 minutes
Consolidation and reinforcement	Large group	
Assessment	Individual/small group/large group	
Remedial	Large group	
Writing	Individual	
Home Work		

Some elaboration on each of the elements of the format are given in the table below:

Elements of the format	Some Possibilities to consider	
Introduction	Connect to the overall lesson mind map	
	Evocation to kindle interest –story, anecdote	
	Linking to prior knowledge	
	Showing an experiment	
	Using Charts, pictures	
	Showing specimens	
	Sharing of what the student is expected to know at the end of the chapter	
	Splitting the content among the pairs	
	Guiding instructions/questions	
Reading	Underline Key Words	
	Identify words whose meaning is not known	
	Clarify meaning using dictionary/ask peer/ ask teacher/	
	Teacher can make a list of new words with meanings if a dictionary is not available	
Mind map	Draw mind map	
Summary	Summarise	
Presentation	The student pairs present sequentially their mind maps and summary	
	All other students take it down	
Consolidation and Reinforcement	Teacher puts up her mind map and summary of the whole unit and summarises using unit summary	Students take down mind map and summary
	Going over key words	
	Observation/ identification of specimens/ diagrams	
	Demonstration of small experiments	
Assessment	Quiz	
	Match the following	
	Fill in the blanks	
	Short answers	
	Draw a diagram	
	Label a diagram	
	Tabulate etc	
	Based on “What the student is expected to know” at the end of the unit	
Remedial	Going over the incorrectly understood concepts	
Writing	Writing exercises of various kinds	

A Unit Lesson Plan in this format will contain:

1. Nature of Information
2. Format/method and time
3. Content covered.
4. Skills addressed
5. Introduction including guiding questions
6. Reading
7. Mind Map of the unit
8. Summary of the unit
9. Consolidation and reinforcement.
    Presentation Sequentially
    Teachers mind map and summary
    Discussion
    Activity (if any)
    Any other (if any)
10. Assessment based on "What the student is expected to know" and the questions at the end of the chapter
11. Remedial
12. Writing

ON MIND MAPS **Appendix 7-1**

A mind map is a diagram used to represent words, ideas, tasks or other items linked to and arranged radially around a central key word or idea. It is used to generate, visualize, structure and classify ideas, and as an aid in study, organization, problem solving, decision making, and writing.

Mind maps (or similar concepts) have been used for centuries, for learning, brainstorming, memory, visual thinking, and problem solving by educators, engineers, psychologists and people in general.

Ref http://en.wikipedia.org/wiki/Mind_map

For any of the following you can make a mind map:

- From a lesson in the text book
- About a situation observed Eg- an accident
- As a summary of a conversation
- As an exploration of feelings
- Recording a lecture...

For learning to make a mind map begin by choosing a passage from a text.

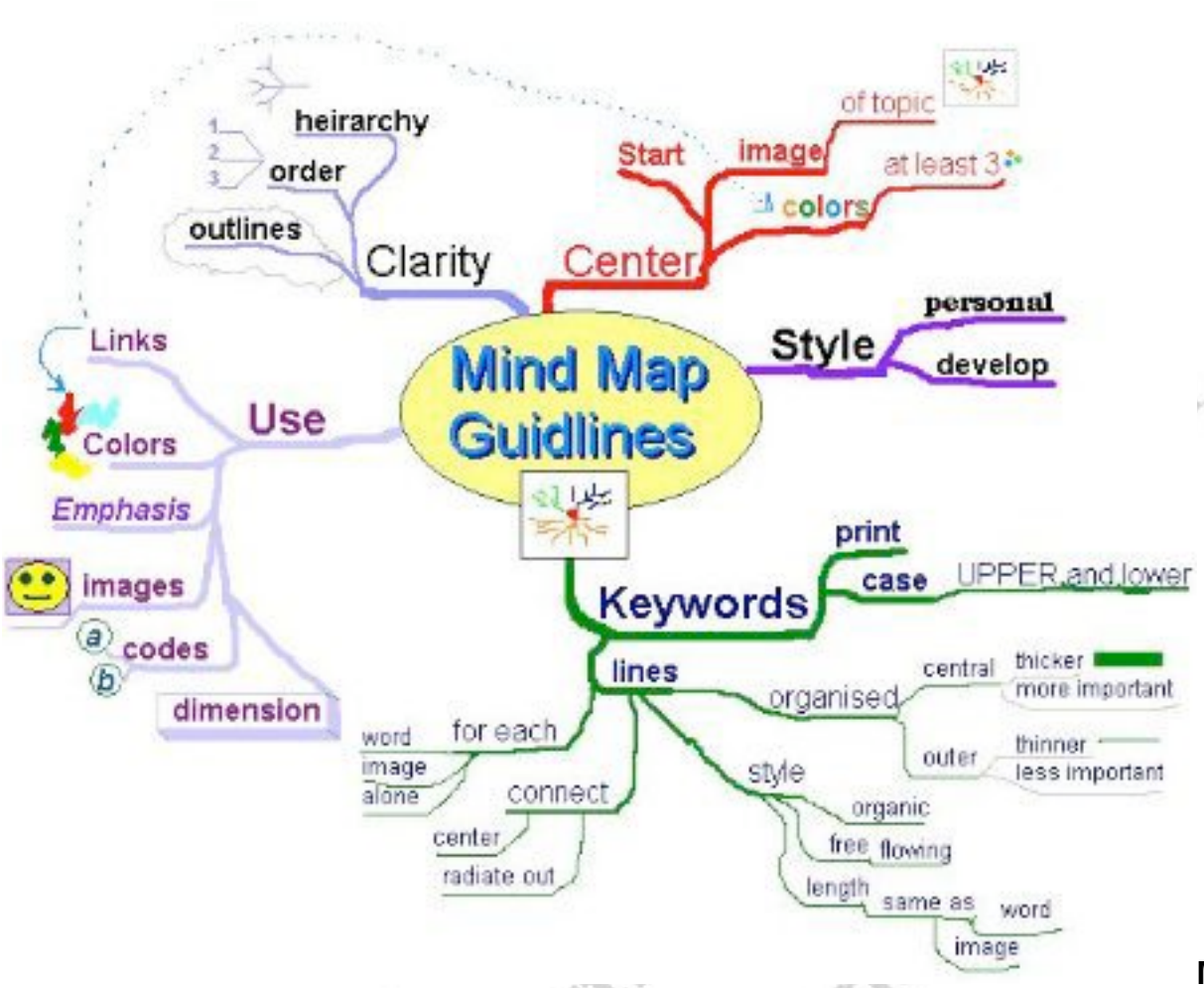
A mind map is like a web, tree. There is a central trunk and many main branches and sub branches.

a. Find the topic heading / central idea (you may choose an idea difeent from another)
Put it in the centre
Use a particular colour and /or letter size for the central heading
b. Next organize the information into sub- headings –
Draw arrows or lines to connect the central theme to these Sub-headings and make a branching pattern from the centre.
You may use a different letter size and/or colour for these subheadings.
c. You are now going to draw the smaller branches of the tree.
Using lines or to arrows connect these subheadings to the facts that belong to it.
You may use a different letter size and/or colour for these subheadings.
The connecting arrows could also be of a different thickness.
So now you have a beautiful, colourful mind map.

The mind map of a student tells one what the student has grasped and the picture the student has made of the topic. It is neither right nor wrong. It must be remembered at all times that there id NO ONE CORRECT MIND MAP. Such an approach will dampen the explorations of students and choke their creativity.

The mind map be a good tool for grasping a lesson and rememebring the lesson. The effort of making a mind map is valuable, even if one does not see evidence of recall from the student. It serves as a tool for ACTIVE ENGAGEMENT and the effort to ORGANIZE

INFORMATION by itself is most valuable.

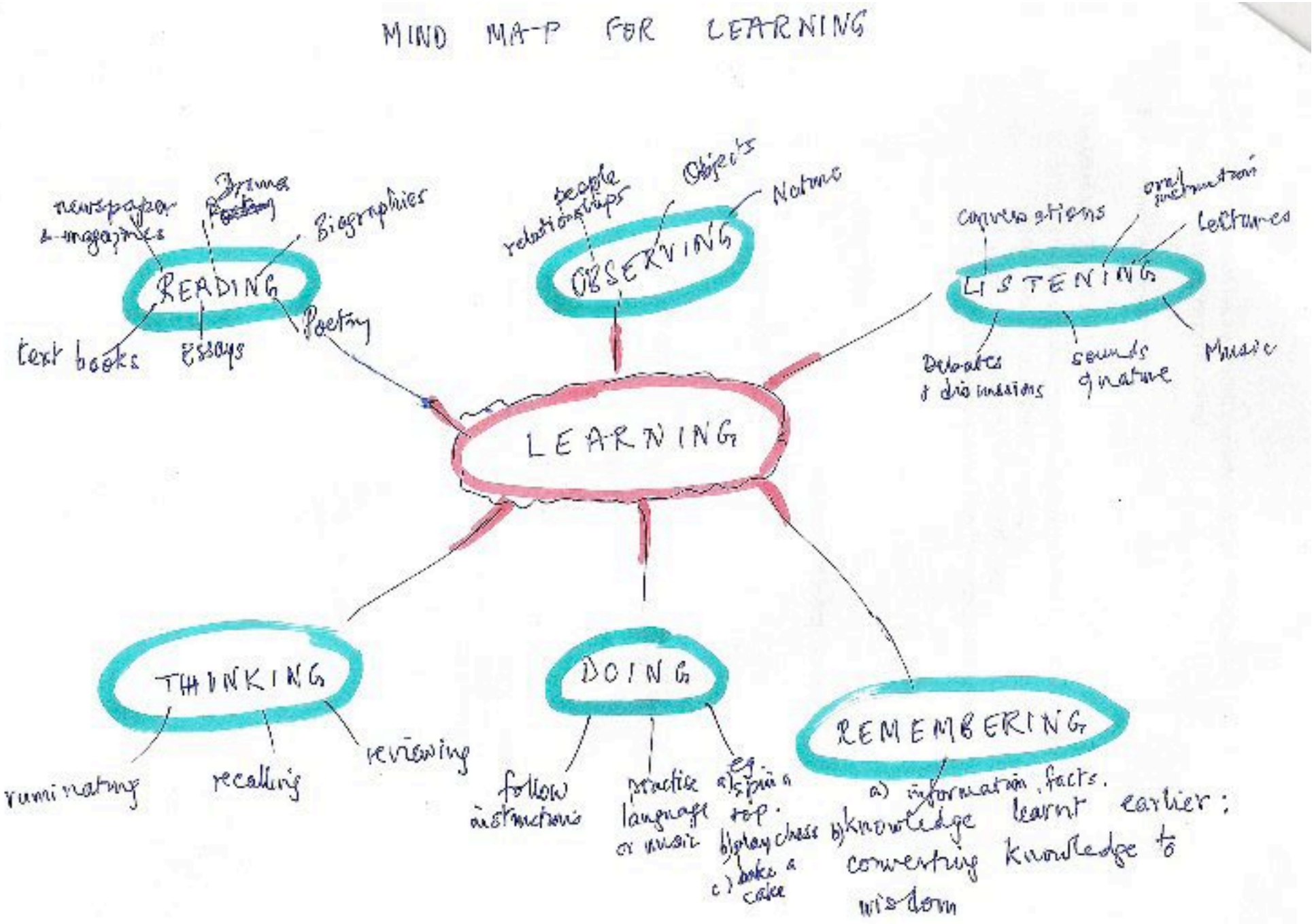


Made by

Danny Stevens, 25 june 2006

When students have to answer essay questions or , it is a worthwhile idea to consider if they can be asked to make a quick map with just pen or pencil, beofre starting to write sentences. This one feature will enormously improve qulaity of answers since students often forget the details when they start writing. The mind map could act as a NAVIGATING TOOL for the long answer.

Free mind mapping software is available on the internet. The one indicated below has many interesting features and easy to learn. Where there is access to computers students cna easily master the software. Teachers likewise may find the use of the software worth considering for their work. http://sourceforge.net/freemind


MIND MAP FOR LEARNING
LEARNING
READING
newspaper & magazines
Prime
Biographies
Text books
Essays
Poetry
OBSERVING
people relationships
Objects
Nature
LISTENING
conversations
oral instructions
lectures
Debates & discussions
sounds of nature
Music
THINKING
ruminating
recalling
reviewing
DOING
follow instructions
practice language or music
eg a) spin a top. b) play chess c) bake a cake
REMEMBERING
a) information, facts.
b) knowledge learnt earlier; converting knowledge to wisdom

A. ROLE OF SELF ASSESSMENT

Subjective assessment by the student has its own value. It helps build a perspective on both the process and content of learning. It promotes also a self-reflection on why learning has or has not happened. For the teacher, it gives a clear picture of individual responses to the classroom processes and a sense of what has worked for each individual.

B. CONTEXTS OF SELF ASSESSMENT

Academic
Non academic – Games, learning for life modules etc
Group work

C. ACADEMIC SELF ASSESSMENT

It basically involves reflecting the on the content and quality of learning.

Academic self assessment can happen after a class, a unit, a term or a year has been completed.

- Have I understood the salient concepts?
- How do I know that I have understood them?
- What are weak areas in my understanding?
- Did I ask for help where I needed it?
- Did I relearn concepts that I understood inadequately?
- What are the kinds of errors I normally make?
- How can I avoid them in the future?
- What interested me in the learning?
- Was I alert and attentive?
- Did I enjoy the learning?
- Which techniques of learning work for me?
- Do I selectively memorise or do I attempt to memorise all that I have read?
- Have I been a discerning reader? Have I thought about what I have read or have I read blindly?
- Have I mind mapped and summarized all my chapters?

Some formats for assessment of group working have already been suggested under the subheading Discussion. Similarly non curricular areas may also be self assessed.
Some formats of self assessment have been included.

Students can be helped to anchor discussions by stating and following a few simple rules.

1.Raising hands when you want to speak.
2. Waiting your turn.
3. Encouraging all members to speak and not just a few.
4. Respecting the right of others to have different views from yours.
5. Working towards a shared understanding in the discussion and not using it as a forum to air ones own view alone.
6.Being respectful and not allowing for put downs or derogatory remarks against any individual.
7. Stating the purpose of the discussion – to clarify, come to a decision, to widen, deepen, share learning, as an exploratory round etc.
8. Fixing a time frame for the discussion.
9. Edward de bono suggests a method called The Six Thinking Hats to improve the quality of discussions. Here six differently colored hats are worn metaphorically to represent respectively facts, feelings, logical positives, logical negatives, possibilities and for directing the discussion. This way there is no confusion among all the above. .
10.Have some guiding questions around which the discussion revolves.

The Process of Memory: 2 theories

One theory of memory says that memory starts with an **input** from the environment and is held in what is called the **sensory register** for a few seconds. From there it is passed on to **short-term memory** where it is held for perhaps 20-30 seconds. Most of the information reaching short-term memory is processed by having attention focused on it, perhaps by repetition, or by linking it other information. This process is called **rehearsal**. From here it passes onto **long term memory.** It may reside there for days, months or years. When we remember something it is **retrieved** from long term memory.

Another theory of memory says that incoming information can be worked on at different **levels of analysis**, the deeper the analysis the better the memory. Here the fist level is **perception** which gives us our immediate awareness of the environment. At the next level the **structural features** of the input – what it sounds like etc, are analyzed and at the deepest level of processing, the **meaning** of the input is analyzed.

Good memory results from deeper and more **elaborate processing** of perceptual input. Simply repeating information (maintenance rehearsal) is not enough for good memory. All this does is maintain the information at a certain level of depth. For the deeper levels to be reached, the rehearsal must be elaborative. This is called **elaborative rehearsal.** In other words the rehearsal must process the information at the meaning level for it to well retained. **Rehearsal** is thus seen as a process that gives meaning to information. **Elaboration** refers to the degree with which incoming information processed so that it can be tied to or integrated with existing memories. Long term memory is a bit like a library with a good cross indexing system.

Encoding and Storing Long Term Memory

Encoding for long term memory requires special attention or strategies of some sort. Just being exposed to something is usually insufficient for long term storage.
One strategy to remembering things well is to **organize**. The input so that it fits onto existing categories grouped in some logical manner. The organization of an input may be supplied by the information itself or maybe supplied by the individuals themselves as they learn-**(subjective encoding)**.

Imagery is another way. What is read is stored in the form of images. In the case of visual images, the picture in the head is not an exact copy of the input. Images are thus partial representations of what is in the world around us.

The third way is the **constructive process.** During encoding, the "to be remembered" information is modified. Certain details are accentuated, or simplified and information is stored in a completely different way from what is read.

Retrieval from Long –Term Memory

Information that is encoded or stored in long term memory must be read out or retrieved if it is to be used. Retrieval cues are important factors in the read out from memory.
Finding information in organized long term memory is aided by retrieval cues or reminders which direct the memory to the appropriate part of the long tem memory processes.

Techniques to Improve Memory

1. Mnemonics:

Most mnemonics rely on linking or association of the to be remembered material with a systematic and organized of images or words that are already firmly established in long term memory and can therefore serve as reminder cues. They act as pegs.

Example is VIBGYOR--- for the colours of the visual spectrum- violet, indigo, blue, green, yellow, orange, red.

2. The Method of Loci:

The word "loci" means places. The memory pegs in this system are part of your image of a scene. The scene can be a street, a building with rooms, a layout of a college campus, a kitchen etc. For example, if I want to store the all the names of the kings of a dynasty, I may imagine a palace with different rooms and put each king in a uniquely decorated room.

3. Number and Letter Peg Systems

Like the method of the loci the main ideas of these systems is establish in your long term memory with a well organized set of images to which the to be remembered items can be linked. In the number system you form an image with the number. For instance a rhyming system can be used for the numbers 1through 10. One is a bus, two is a shoe, three is a tree, four is a door etc. Now when you have a list to remember, you can associate the items on your list with your images of the numbers. For example if you have to remember a grocery list—if the first item on the list is a coffee, then imagine a cup of coffee along with the buns.

Letter systems are similar. You can establish mnemonic pegs by forming strong, distinctive images of words that start with the sounds of letters of the alphabet. That gives 26 pegs for association with what you want to remember.

4. Stories To Tell Yourself

If you have a list of unrelated items the useful mnemonic device is to tell relate the items in a made up story.

5. Remembering Names and Faces

As a first step, be sure you heard the name correctly. Repeat the name when you acknowledge the information. Pay attention to the individuals face, or voice or the shape and size of his head, eyebrows, colour of eye etc.

6. Chunking

Suppose you want to remember a credit card number—19141945001. It will help if you break the number into chunks. The first 4 numbers are when the First World War broke out, the next 4 numbers are when the Second World War ended while the last 3 numbers form a chunk that is easy to remember.

For the teacher

To summarise the above processes, it is necessary for the student to subjectively process what is studied in various ways- to think about it, to question, to discuss etc, for long term memory to be established. The visual image greatly helps in this process. The processes of mind mapping, summarizing, discussion, writing greatly help the formation of long term memory and elaborative rehearsal. There is no long term memory without it. Retrieval cues help in the read out from memory. Students can form their own retrieval cues. They are very good at it.

The important factor here is to as a teacher is to understand and clarify for the student what they want them to remember. Otherwise they will burdened with having to remember the whole lesson. So the planning process must include listing what you want the student to remember. The main concepts are identified with the mind map and summarizing helps to organize facts but all facts need not be remembered.

Two exercises are suggested to get a deeper understanding of memory processes.

- Go over the exercises on memory and identify techniques used for retrieval cues.
- Take a lesson in any text or a part of the lesson and

- Identify the main concepts
- The facts organized around the main concepts

- **Identify what you want the students to commit to memory**
- Use the techniques learnt and match what is to be remembered to the technique.
- Find situations of application of what is learnt .

For the Student - Studying to Remember

1. First study is work and takes time. Give yourself adequate time.
2. You should spend a great deal of time in what is called "elaborative rehearsal". Ask yourself what you have just read, what the new concepts and items are and how they relate to other things you know. Studies show that it is effective to spend at least half your time in such rehearsal. Mind mapping, discussion and summarizing are all part of elaborative rehearsal.
3. Remember the importance of oranisation. Organize the information subjectively. This way you will also be giving yourself retrieval cues. Form visual image s wherever possible. The summarizing techniques you have learnt will help you.
4. Get some feed back after you study each part-go over the main headings and ask yourself what is under each heading Feedback tells you what you have mastered and where you are weak. Review what you have learnt periodically with your own notes.
5. Apply what you have learnt

Summarising

Appendix 7-5

A. What is the purpose of summarizing?

The purpose of summarizing is for revisiting the text without having to go through the cumbersome process of rereading the original.
The purpose could also be to help memorizing where there are a number of facts to be remembered
To crystallize one's views and knowledge and to take it forward

B. Two Major Principles
Therefore two major principles of summarizing include:
Condensing
Organising
To condense an article or a lesson it is important to identify the main points. No essay however long is organized around more than 5-10 main themes or points. These are called the key perspectives. Once these are located, many facts may be arranged around those. In the absence of key organizing principles, facts hang randomly. In this case the most unusual fact or the last fact to be learnt stay in the mind. The main subheadings provide a good clue to identifying key perspectives. It is important to recognize relevant and irrelevant data and draw a thread through the key ideas.

C. Some techniques
Some techniques of organizing data in a summary are given below. The method that best suits the context can be chosen.

1. Summarise under main headings using the mind map format.

2. Draw a table with the main headings and write down the facts under it.

3. If a chronology of events is being summarized, a time line can be drawn.

4. Draw a hierarchy tree like a family tree

5. Draw diagrams - A picture is worth a 1000 words.

6. List concepts and facts.
7. Identify questions and answer them
8. Write out all the key words.
9. Its possible to list the main subheadings and underline the key facts in the text itself
10. The practical record of experiments is a form of summarizing observations
11. Associating facts with verbal cues like mnemonics helps
12. Its also possible to find one's own method of summarizing –like the bubble diagram given below

Participating in and anchoring discussions

A.VALUE OF DISCUSSIONS

Discussons help the student:

Listen to, accept and appreciate different view points

2. In clear communication and

Clarify, widen and deepen learning- consolidate and reinforce what is learnt

4. In decision making

However for all these purposes to be achieved, discussions have to be anchored well.

Writing is a graded complex skill and levels can vary from being able to write words to writing sentences to writing paragraphs and essays. The usage of the writing skill may be varied—to express one's feelings as in a journal or essay, to write various kinds of letters, to paraphrase, to write a story, to answer questions in an examination.

The common threads in all categories are:

- Linking to the requirement/focus of the task be it answering a question or writing a letter or story
- Being clear about what one wants to convey- the content
- Stating clearly what one wants to convey - clarity of expression linked to clarity of thought and finding the appropriate word (vocabulary)
- Spelling correctly

Here we focus on writing an answer correctly. Some examples are given to elucidate how it is to be done.

Example 1

Question: Why are the Pallavas referred to as the first great agriculturalists?

Answer: The Pallava kings gave a lot of importance to agriculture in their kingdom. They cleared a great deal of forestland for the purpose of agriculture. They created many irrigation ponds all over their territory. In both farming and in the work of irrigation a number of people were employed. For these reasons, the Pallavas are considered great agriculturists.

Highlights of the answer:

1. Begins by connecting to the question.
The Pallava kings gave a lot of importance to agriculture in their kingdom.
2. The following portions make reference to the question. It addresses the question asked and gives supporting points to the view that Pallavas were great agriculturalists.
cleared a great deal of forestland
created many irrigation ponds
a number of people were employed.
3. The last sentence once again refers to the question and concludes the answer.

Example 2

Question: How would a city on the coast be different from a city in the interior?

Answer: A city on the coast is quite different from the city in the interior. A city on the coast usually develops around a port. As a result the city is likely to be populated with many merchants. A large part of its activity would revolve around trade. Ships from many countries would be docked at the port. People from different kingdoms would mingle with each other. This would result in mixing of languages, new ideas and greater knowledge of other ways of life. All this is unlikely in a city in the interior. Such a city would have grown around a temple or it would be the capital of the kingdom.

Highlights:

1. Make a general statement connecting to the question.
A city on the coast is quite different from the city in the interior.

2. The second part of the answer deals very clearly with the question of differences. It states clearly the features of a city on the coast and in the interior. When stating differences it is necessary to make clear statements for both the objects that are compared.

a. Coastal City: Features

- develops around a port
- populated with many merchants
- activity revolves around trade
- ships from many countries docked at the port.
- mixing of languages, new ideas and greater knowledge of other ways of life

b. Comparative statement

- all this is unlikely in a city in the interior

c. Features of the interior city

- grown around a temple
- capital of the kingdom

Example 3

Question: What two advantages does a structural temple have over a rock cut temple?

Answer: A structural temple differs from a rock cut temple. It has some advantages over the rock cut temple. First a structural temple can be built in any place desired. A rock cut temple would have to be built where a rock is as huge rocks are difficult to move. Second the structural temple can have many sections composed of many buildings and can be tall. This is not possible in the rock cut style.

Highlights.

a. Begin an answer always with a noun, never a pronoun.

- A structural temple is different from a rock cut temple.
- Use of the phrase " a structural temple"

b.Second make a general statement connecting the answer immediately to the question.

- A structural temple differs from a rock cut temple. It has some advantages over the rock cut temple.

c. Begin directly.

- Use of the words first and second to denote the points of difference.
- d. In both the points, bringing out the advantages of one over the other, the anser talks about both kinds of temples. The answer does not leave anything for the examiner to complete, as it is complete in itself.
- First a structural temple can be built in any place desired. A rock cut temple would have to be built where a rock is as huge rocks are difficult to move. Second the structural temple can have many sections composed of many buildings and can be tall. This is not possible in the rock cut

style.

Example 4

Question: Why is Megasthenes a significant person for you as a student of history?

Answer: Megasthenes was a Greek ambassador who visited the Pandya kingdom. His records give a description of life in those times. As a student of history this would be an important source of information for me.

Highlights:

a. The answer starts with a noun, not with a pronoun like "He".
b. The first sentence is in the past tense. This introduces the answer.
c. The rest of the answer directly refers to the question and is in the same tense as asked. As far as possible, answer in the same tense as the question.

Written by

Jayashree Nambiar
The School KFI