

EDUCATION 3.0
infinite possibilities of learning

**THE BACKBONE
FRAMEWORK**

INTRODUCTION

We all live in the ambit of our socio cultural environment which in turn, shapes our lives. We continually interact with the people around us and our physical environment. Although this process may unfold differently for different individuals yet it is majorly guided by the predominant culture that we adhere to. From the very beginning when a child tries to construct the reality of the world for herself/himself, s/he does so in close connection with the socio cultural values.

The English word 'culture' has been derived from the latin word 'colere' which means learn or learning. Culture is the sum total of all what the member of a community learns, gather, prefer to retain value and put into practice in their personal and social behavior.

According to the eminent American cultural anthropologist Herskovits, culture is the 'man-made part of environment'. The world or the whole environment on this planet can be divided into two phenomena- Nature and Culture.

Whatever The Divine or the creator has created constitutes Nature, such as land, hills, rivers, minerals, seasons, sun, moon etc. all those ideas and things that have been created by man by learning from nature, from his experience of life in the society, as a result of his inner thinking and assessment, and out of his love, motivation, taste or hobby etc. constitutes the culture of his community or group. It is in this totality, that a learner **Experience** with his/her immediate nature and **educate** to grow. The experience and learn together create the term **Experiential Education**.

Perhaps education starts in much early and a child get education by his self teaching of own surroundings include School, Parents, Neighborhood, Country or the Environment around.

Education 3.0 provides the stimulus to think, the platform to act and the response of action are all grounded in this natural and socio-cultural context of immediate surroundings.

Keeping the vision of National Curriculum Framework 2005 (**NCF 2005**) on **Experiential Education** as our foundation and to make education complete and contextual, it is an effective blend of School curriculum, project-based learning and outdoor education, also including 10 **Core Life Skills**, given by World Health Organization (WHO) and recognized by Central Board of Secondary Education (CBSC).

Education 3.0 is specially created to cater to the needs of 21st century school children and take them beyond classrooms through various projects both in-house and outdoors.

PESPECTIVES ON EDUCATION

From the Indian and Western philosophers'

Since time immemorial, education is estimated as the right road to progress and prosperity. Different educationists' thoughts from both Eastern and Western side have explained the term 'education' according to the need of the hour. These definitions are explained below:

While the Indian thinkers want to stress on spiritualism and perennial truth, the Western philosophers differ in their meaning according to need and convenience of the circumstance.

Ancient Indian thinkers:

(1) Rig-Veda – Education man self-reliant and others. (2) Upanishads –The end product of Education is to get salvation. (3) Shankaracharya- Education is the realization of the Self. (4) Kautilya- Education means training for the country and love for the nation.

Modern thinkers:

(1) Sri Aurobindo- Education means helping the growing soul to draw out that is in itself. (2) Sri Dayananda – Education is a means for character formation and righteous living. (3) Guru Rabindranath Tagore- Education enables the mind to find out the ultimate truth, which gives us the wealth of inner light and love and gives significance to life. (4) Swami Vivekananda- Education is the manifestation of divine perfection already existing in man. (5) Gandhi ji- By education, I mean an all-round drawing out of the best in the child and man-body, mind and spirit.

Western thinkers:

Western thinkers interpret education as follows:

(1) Plato- Education is the capacity to feel pleasure and pain at the right moment. (2) Aristotle- Education is the creation of a sound mind in a sound body. (3) Pestalozzi- Education is natural, harmonious and progressive development of man's innate powers. (4) Froebel- Education is enfoldment of what is already enfolded in the germ. (5) T.P. Nunn- Education is the complete development of the individuality of the child. (6) Ross- The aim of education is the development of valuable personality and spiritual individuality. (7) John Dewey- Education is the process of living through a continuous reconstruction of experiences.

National Policy on Education, 1986:

The National System of Education will be based on a national curricular framework, which contains a common core along with other components that are flexible. The common core will include the history of India's freedom movement, the constitutional obligations and other content essential to nurture national identity. These elements will cut across subject areas and will be designed to promote values such as India's common cultural heritage, egalitarianism, democracy and secularism, equality of sexes, protection of environment, removal of social barriers, observance of small family norm and inculcation of scientific temper. All educational programmes will be carried on in strict conformity with secular values. India has always worked for peace and understanding between nations, treating the whole world as one family. Besides, awareness of the inherent equality of all will be created through the core curriculum. The purpose is to remove prejudices and complexes transmitted through the social environments as follows

- connecting knowledge to life outside the school,
- ensuring that learning is shifted away from rote methods,
- provide for overall development of children rather than remain textbook centric,
- making examinations more flexible and integrated into classroom life and,

A REFLECTION ON THE CURRENT SYSTEM

Animal school - In 1939 George Reavis, Assistant Superintendent of Cincinnati Public Schools

Once upon a time the animals decided they must do something heroic to meet the problems of a “new world” so they organized a school. They had adopted an activity curriculum consisting of running, climbing, swimming and flying. To make it easier to administer the curriculum, all the animals took all the subjects.

The duck was excellent in swimming. In fact, better than his instructor. But he made only passing grades in flying and was very poor in running. Since he was slow in running, he had to stay after school and also drop swimming in order to practice running. This was kept up until his webbed feet were badly worn and he was only average in swimming. But average was acceptable in school so nobody worried about that, except the duck.

The rabbit started at the top of the class in running but had a nervous breakdown because of so much makeup work in swimming.

The squirrel was excellent in climbing until he developed frustration in the flying class where his teacher made him start from the ground up instead of the treetop down. He also developed a “charlie horse” from overexertion and then got a C in climbing and D in running.

The eagle was a problem child and was disciplined severely. In the climbing class, he beat all the others to the top of the tree but insisted on using his own way to get there.

At the end of the year, an abnormal eel that could swim exceeding well and also run, climb and fly a little had the highest average and was valedictorian.

The prairie dogs stayed out of school and fought the tax levy because the administration would not add digging and burrowing to the curriculum. They apprenticed their children to a badger and later joined the groundhogs and gophers to start a successful private school.

It is so easy to get caught up in a curriculum-driven agenda, particularly in the current climate of educational “accountability” and drive for standardized testing. Schools need to prove to parents, the public at large and government bureaucracy that they are delivering the goods. Often this happens at the expense of individual children who just don’t seem to fit the norm. Standardized (but often overstuffed) programs are designed around what society at large, and particular interest groups argue, that all people need to know. Unfortunately these agendas often fail to meet the real needs of any individual child, but are able to create an illusion of success by ensuring that at least the average achievement is acceptable.

Education 3.0 is not like the Animal School, and it is imperative that we remind ourselves of this regularly. We also have to be in the system to bring a change. Experiential Education, is what recommended by various organizational bodies.

WHY TO CHANGE?

Changing Paradigm - Sir Ken Robinson

“Every country on earth at the moment is reforming public education. There are 2 reasons for it

1. Economic

How do we educate our children to take place in the economies of the 21st century?

Given that we can't anticipate what the economy will look like at the end of next week

2. Cultural

How do we educate our children so that we have a cultural identity so that we can pass on the cultural geans?

The problem is??? We are trying to meet the future by doing what they did in the past, on the way we are alienating million of children.

When we went to school, we were kept there, with a story that if you study well, do hard work, go to a college and then get a better job. Our children don't believe that and its better not to.

Before the mid of 19th century there were no need of public education. The current system education was designed and concaved and structured for a different age.

1. In the intellectual culture of the enlighten

2. Industriaial revolution

It was driven by an economic imperative of the time with running right through it with an intellectual model of the mind.

1. Deductive reasoning
2. Knowledge of the classics reasoning

What we meant as Academic ability that is in the glean pool of public education where we define as two type of people

1. Academic people
2. Non academic people.

For this reason many brilliant people think they are not. This kind of model creates a chaos.

Our children are leaving in the most in stencil stimulating period on history of the earth. They are preceived with information from every platform like cell phones, media, computer, internet, and iphones getting distracted from all the learning from school as they have been built for a standarised testing.

The current education is modeled on the interest of industrialisation and in the image of it. For example institutions are still organised on factory lines like ringing bells, separate facilities, separate subjects etc. We still educate children by batches or according to the system through age groups. It's mainly because for the growth of standarised testing and standarised curriculum.

If we can go just in the opposite direction that's what is meant by changing the paradigm.”

Education 3.0 helps the 21st century students to break the prototype pattern of the current system.

THE GUIDING PRINCIPAL

Integral Education

Education to be complete must have five principal aspects corresponding to the five principal activities of the human being; the physical, the vital, the mental, the psychic and the spiritual. Usually, these phases of education follow chronologically the growth of the individual; this, however, does not mean that one of them should replace another, but that all must continue, completing one another until the end of his life.

Physical education had three principal aspects: (1) control and discipline of the functioning of the body; (2) an integral, methodical and harmonious development of all the parts and movements of the body; and (3) correction of any defects and deformities.

Of all education, **vital education** is perhaps the most important, the most indispensable. Yet it is rarely taken up and pursued with discernment and method. There are several reasons for this: first, the human mind is in a state of great confusion about this particular subject; secondly, the undertaking is very difficult and to be successful in it one must have endless endurance and persistence and a will that no failure can weaken.

A true **mental education**, which will prepare man for a higher life, has five principal phases. Normally these phases follow one after another, but in exceptional individuals they may alternate or even proceed simultaneously. These five phases, in brief, are:

- (1) Development of the power of concentration, the capacity of attention.
- (2) Development of the capacities of expansion, widening, complexity and richness.
- (3) Organisation of one's ideas around a central idea, a higher ideal or a supremely luminous idea that will serve as a guide in life.
- (4) Thought-control, rejection of undesirable thoughts, to become able to think only what one wants and when one wants.
- (5) Development of mental silence, perfect calm and a more and more total receptivity to inspirations coming from the higher regions of the being.

With **psychic education** we come to the problem of the true motive of existence, the purpose of life on earth, the discovery to which this life must lead and the result of that discovery: the consecration of the individual to his eternal principle.

The first and perhaps the most important point is that the mind is incapable of judging **spiritual things**. All those who have written on this subject have said so; but very few are those who have put it into practice. And yet, in order to proceed on the path, it is absolutely indispensable to abstain from all mental opinion and reaction.

EVOLUTION

- Education 1.0 is largely a one-way process. Students attend university to get education from professors who might teach by lecturing with notes, handouts, textbooks, videos, and in the Web. Students consume the information resources delivered to them; if students engage in activities based on those resources, they usually engage by themselves or in isolated local groups. Rarely do results of those activities loop back to the information resources students consume in carrying out those activities out.
- Education 2.0 sparks more interaction between the teacher and student; student to student; and student to content or expert. Education 2.0 uses Web 2.0 technologies to enhance traditional approaches, and uses blogs, podcasts, social bookmarking, and participation tools, but mostly within the framework of Education 1.0. Education is not transformed, but the groundwork for broader transformation is being laid down.
- Education 3.0 is characterized by rich, cross-institutional, cross-cultural educational opportunities where learners create and share artifacts; and students learn beyond classroom activities through self experiences and enquiry. The distinction between artifacts, people, process, space, and time becomes blurred. Institutions adapt to meet the challenges of opportunities presented.

APPROACH

Education 3.0 refers to as educational theories or institutions which are informed by **alternative thoughts**. Experiential Education regards the child as a growing soul and helps him to bring out all that is best, most powerful, most innate and living in his nature.

It helps the child develop all facets of his personality and awaken his latent possibilities so that he acquires

- a strong, supple, healthy, beautiful body
- a sensitive, emotionally refined, energetic personality
- a wide-ranging, lively intelligence and will through experiences
- the subtler spiritual qualities that unify and harmonies the being around his inmost Truth or Soul

The focus and emphasis in Experiential Education is not just information and skills acquisition but also self-development, triggered from within the child and supported and nourished by teachers and parents. Every experience becomes a learning tool for the child as he grows. IE helps him to integrate with his true self, his surroundings, his society, his country and humanity in other words, to become the complete being, the integrated being that he is meant to be.

An experiential approach to education supports the continuing and evolving growth of learners and educators along the entire spiral of development over the full span of life.

- ✓ Experiential education includes approaches to education from biological, neurological, societal, cultural, psychological, and spiritual fields of study.
- ✓ It involves considering the individual and collective aspects of teachers and students,
- ✓ Includes the interior and exterior modes of experience and reality.
- ✓ Considers the many developmental lines in a human being —cognitive, emotional, interpersonal, artistic, moral and spiritual

THE ART OF TEACHING

Students need to be "trained" to learn the rules and to speak the language of their medium, but more importantly, they are encouraged to develop their own habits of mind and to acquire the discipline of continuing to work in the face of not being able to get the answers right away. They learn how to not give up until they get there. What else do students learn as in an ideal education system (**we indicate as Experiential Approach**)?

They learn how their first answer may not be the best. They learn how the last answer may help you get to the next, but it won't be the next answer. They learn how there might be more than one way of interpreting or doing something. They learn how skill and knowledge in their discipline is a means and a beginning, not an end. They learn how to live with uncertainty, to pursue outcomes that are not predetermined. They learn how one must risk the thing

one cares most about. They learn how to look anywhere and everywhere for answers. They learn how nothing is sacred and everything is sacred. They learn how to let go of the shore and push off into the middle of the river.

DIFFERENCE IN APPROACH

Activities/Interactions Often Observed in Traditional approach	How this is Different from our approach	Comments
The teacher is a taskmaster	Teachers are guides, helpers, and co-learners	In the experiential classroom the content and mode of learning is decided together with the children; individual choices are welcomed and respected
Product based goals are test scores and degrees	Process based development of the child includes:- discovery of life-purpose, exploration of inner nature, joy of learning for its own sake	By becoming aware of their unique capacities, not only will students be academic achievers, they will further become aware of their life purpose
Classrooms have up to 36 children with one teacher	Ratio is 12 students to one or more teachers	Small class size and individual attention allow for the "minimum syllabus" (or the standard academic achievement expected in most academic institutions of a certain age group) to be easily and comfortably met during the year and then the child goes on to create an individual syllabus for themselves, based on their own interests and personal development
The teacher asks questions with yes/no or one or two word answers	Teachers ask open ended questions	Open questions help to create self awareness in children and help them to reflect on their outlook in life
Children are compared with each other, often seen in grading	Teachers help the child to gain confidence in his own capacities	Comparison with other children erodes confidence; when a child is helped to observe him/herself they learn to make conscious choices
The teacher see mistakes as a	Learning can take place through	Making mistakes is a natural by-product of learning and allows the child to

waste of time	trial and error, risk taking is encouraged	understand there is always more room for improvement
Children are told what to do	Learning is seen as self discovery and self development	Students are given time for space and reflection
The teacher teaches the same lesson to every one in the class	Teachers provide opportunity for the child to make real and conscious choices and is allowed a variety in content of learning	By offering choices, the students' become aware of their own likes and dislikes; their own capacities and difficulties and helps them find their own way to maximum self-development
The child is given consequences by the teacher	Teachers help the child to see that their choices have consequences	The responsibility for learning shifts more and more to the child as the child grows
The teacher scold, excessively praise, or judge children through tests and examinations	Teachers help the child to strive for perfections through their own inner qualities	Children learn to look within themselves, become self-aware, courageous, and intrinsically motivated with a genuine love of learning
The teacher uses the same standards to decide how to teach the class	Teachers are tasked with having a deep understanding of each individual student in the class and guides them according to their own capabilities and uniqueness	Children are honored for their own development and unique qualities and the curriculum is fitted to their personal needs and interests
Children learn through rote memorization and lecture in the classroom	Children are provided with hands on experience so that they can relate things to themselves and connect them to their own lives	When children learn experientially, it gives them an innate understanding, and they can grasp, connect to incorporate, and expand this information to help them learn further

IN RELATION TO NCF 2005

The present National Curriculum Framework 2005 proposes five guiding principles for curriculum development: (i) connecting knowledge to life outside the school; (ii) ensuring that learning shifts away from rote methods; (iii) enriching the curriculum so that it goes beyond textbooks; (iv) making examinations more flexible and integrating them with classroom life; and (v) nurturing an overriding identity informed by caring concerns within the democratic polity of the country.

In the context of environmental-related awareness, NCF-2005's vision implies an approach which cuts across the traditional boundaries separating one subject from another. According to this approach, knowledge of environment concerns and the activities, which might depend this knowledge and develop a positive attitude, need to be infused in the subject matter of all areas of the school curriculum at different stages.

The NCF 2005 document also focuses on experiential education approach, almost exclusively on the “how”, the methodology and that is the aspect of what is generally known as “child-centered education reform”. But how does NCF deal with experiential education approach, either in theory or practice? The document says, for example, “The child’s community and local environment form the primary context in which learning takes place and in which knowledge acquires its significance. In the context of environmental-related awareness, NCF-2005’s vision implies an approach which cuts across the traditional boundaries separating one subject from another. According to this approach, knowledge of environment concerns and the activities, which might deepen this knowledge and develop a positive attitude, need to be infused in the subject matter of all areas of the school curriculum at different stages.

NCF-2005 perceives school children as ecologists in their own right who need to be nurtured by a flexible school routine and teachers who engage with children in the construction of knowledge. The aim at exposing students to the real life world around them, both in nature and society, in order to enable them to examine, assess and interpret the problems and concerns related to the environment. The success of this effort crucially depends on the interest and encouragement that school, principals, teachers, parents and the civil society in general show for encouraging children to carry out the projects and activities outlined in the present textbooks/project series.

It is extremely important that students **project work** is assessed in a holistic manner, giving due regard to the motivation and enthusiasm of each student rather than through the conventional system of evaluation which ignores individuality and originality.

IN RELATION PROJECT BASED LEARNING

PBL enhances the quality of learning and leads to higher-level cognitive development through students' engagement with complex, novel problems. It is also clear that PBL teaches students complex processes and procedures such as planning and communicating. Accomplishing these goals, however, requires time for both teachers and students to master the behaviors and strategies necessary for successful PBL. In addition to research, convincing reports have come from teachers that PBL is a rigorous, relevant, and engaging instructional model that supports authentic inquiry and autonomous learning for students. Along with encouraging academic proficiency and meeting the traditional goals of education, PBL has important benefits for today's students and is directly related to the practices of Integral Education. Teachers report that PBL:

- Overcomes the dichotomy between knowledge and thinking, helping students to both "know" and "do."
- Supports students in learning and practicing skills in problem solving, communication, and self-management.
- Encourages the development of habits of mind associated with lifelong learning, civic responsibility, and personal or career success.
- Integrates curriculum areas, thematic instruction, and community issues.
- Assesses performance on content and skills using criteria similar to those in the work world, thus encouraging accountability, goal setting, and improved performance.
- Creates positive communication and collaborative relationships among diverse groups of students.
- Meets the needs of learners with varying skill levels and learning styles.
- Engages and motivates bored or indifferent students.

OUTDOOR EDUCATION AND ACADEMIC CURRICULUM WHERE DO THEY MEET

Most of adventure education philosophy can be traced to Greek origin; they were perhaps the first people who exposed citizens to participation in modern forms of adventures for the sake of 'character' growth. It is intriguing to note that even Alexander the Great was accompanied by scholars as he sailed to conquer the world. For example, let us consider the experience of rock climbing and see how it affects many curricular areas that may be independent / independent to each other.

- **Environmental Science** - participants often need to understand the structure, strength of the rocks before climbing and absorbing nature
- **Physics** - climbers rely on the strength of the equipment being used.
- **Maths** - The breaking strength of ropes, carabineers and other belay equipment plays a huge role in the way they are used. The breaking strength of each of these, the actual act of belaying and the wear and tear of hard gear is indeed a lot of hidden maths. Height of the rock, angles and base of the rock plays an important role as integrating maths as a subject.
- **Human relationships** - the equation between the climber and the belayer brings out a quintessential human dynamic of trust portraying the importance of the nature and strength of the human relationship. It is also about the skill and understanding of the entire system (rocks, belay, belayer, rope etc.), which plays on the mind of the climber.
- **Social relationship** – Background and value system between belayer and children

Hence on adventure education programs students could potentially learn from direct experiences like about the rock formations and strength of the rock (which guides how they hold and use the rock), different equipment being used (the hard gear, its breaking

strength etc.), knots to tie into the harness, belay system and finally, achieve a level of mastery where they belay each other on the climb. This kind of interdisciplinary learning is what we must attempt to bring about through adventure/ outdoor based programs based on Environmental studies integrating Maths and Language domains.

NCF AND ENVIRONMENTAL EDUCATION

From the very beginning Environmental studies has been regarded as a separate course of study as prescribed by NCERT.

The National Curriculum Committee had recommended in the 1975 policy document “The Curriculum for the Ten-year School: A Framework”, that a single subject ‘Environmental Studies’ be taught at the every stage.

It had proposed that in the first two years (Class I-II) Environmental Studies will look at both the natural and the social environment, while in Classes III-V there would be separate portions for social studies and general science termed as EVS Part I and Part II. The National Policy on Education 1986 and the National Curriculum Framework (NCF) 1988 also posited the same approach for the teaching of Environmental Studies as projects after the primary level.

Contemporary research on how children learn to make sense of the world around them and how pedagogy in primary school can enable them to develop scientific abilities and understanding in consonance with social and environmental concerns has further supported this integrated structure. The NCF 2000 had recommended that Environmental Studies be taught as an integrated course for the entire primary stage, instead of in two distinct parts devoted to science and social studies in Classes III-V.

So summing up what does Ev.S. as a subject mean in the context of this study, its important to look at concluding views of NCF-2005 about Ev.S. as a subject.

The present syllabus is designed to forge an **experiential perspective** for the primary stage of schooling that draws upon insights from Sciences, Social Sciences and Environmental Education. The National Curriculum Framework 2005 indicates some of the objectives of teaching science and Social Sciences at the primary stage as follows:

- to train children to locate and comprehend relationships between the natural, social and cultural environment;
- to develop an understanding based on observation and illustration, drawn from lived experiences and physical, biological, social and cultural aspects of life, rather than abstractions;
- to create cognitive capacity and resourcefulness to make the child curious about social phenomena, starting with the family and moving on to wider spaces;
- to nurture the curiosity and creativity of the child particularly in relation to the natural environment (including artifacts and people);
- to develop an awareness about environmental issues;
- to engage the child in exploratory and hands-on activities to acquire basic cognitive and psychomotor skills through observation, classification, inference, etc.;

- to emphasise design and fabrication, estimation and measurement as a prelude to the development of technological and quantitative skills at later stages;
- to be able to critically address gender concerns and issues of marginalisation and oppression with values of equality and justice, and respect for human dignity and rights.

LANGUAGE FOCUSED IN NCF

The primary aim is to promote multilingualism and national harmony. The following guidelines may help us achieve this aim:

- Language teaching needs to be multilingual not only in terms of the number of languages offered to children but also in terms of evolving strategies that would use the multilingual classroom as a resource.
- Home language(s) of children, as defined above in 3.1, should be the medium of learning in schools.
- If a school does not have provisions for teaching in the child's home language(s) at the higher levels, primary school education must still be covered through the home language(s). It is imperative that we honour the child's home language(s).
- Children will receive multilingual education for the outset. The three-language formula needs to be implemented in its spirit, to promote multilingual communicative abilities for a multilingual country.
- In the non-Hindi-speaking states, children learn Hindi. In the case of Hindi-speaking states, children learn a language not spoken in their area. Sanskrit may also be studied as a Modern Indian Language (MIL) in addition to these languages.
- At later stages, study of classical and foreign languages may be introduced.

MATHEMATICS FOCUSED IN NCF

As mathematics is a compulsory subject at the secondary stage, access to quality mathematics education is the right of every child. In the context of universalisation of education, the first question to ask is, what mathematics can be offered in eight years of schooling that will stand every child in good stead rather than be a preparation for higher secondary education alone?

Vision for School Mathematics

- Children learn to enjoy mathematics rather than fear it.
- Children learn important mathematics: Mathematics is more than formulas and mechanical procedures.
- Children see mathematics as something to talk about, to communicate through, to discuss among them, to work together on.
- Children pose and solve meaningful problems.
- Children use abstractions to perceive relationships, to see structures, to reason out things, to argue the truth or falsity of statements.
- Children understand the basic structure of Mathematics: Arithmetic, algebra, geometry and trigonometry, the basic content areas of school Mathematics, all offer a methodology for abstraction, structuration and generalisation.

- Teachers engage every child in class with the conviction that everyone can learn mathematics.

SCIENCE FOCUSED IN NCF 2005

Science is a dynamic, expanding body of knowledge, covering ever-new domains of experience. In a progressive forward-looking society, science can play a truly liberating role, helping people escape from the vicious cycle of poverty, ignorance and superstition. The advances in science and technology have transformed traditional fields of work such as agriculture and industry, and led to the emergence of wholly new fields of work. People today are faced with an increasingly fast-changing world where the most important skills are flexibility, innovation and creativity.

These different imperatives have to be kept in mind in shaping science education. Good science education is true to the child, true to life and true to science. This simple observation leads to the following basic criteria of validity of a science curriculum:

1. Cognitive validity requires that the content, process, language and pedagogical practices of the curriculum are age appropriate, and within the cognitive reach of the child.
2. Content validity requires that the curriculum must convey significant and correct scientific information. Simplification of content, which is necessary for adapting the curriculum to the cognitive level of the learner, must not be so trivialised as to convey something basically flawed and/or meaningless. Process validity requires that the curriculum should engage the learner in acquiring the methods and processes that lead to the generation and validation of scientific knowledge and nurture the natural curiosity and creativity of the child in science. Process validity is an important criterion since it helps the student in 'learning to learn' science. Historical validity requires that the science curriculum be informed by a historical perspective, enabling the learner to appreciate how the concepts of science evolve over time. It also helps the learner to view science as a social enterprise and to understand how social factors influence the development of science. Environmental validity requires that science be placed in the wider context of the learner's environment, local and global, enabling him/her to appreciate the issues at the interface of science technology and society, and equipping him/her with the requisite knowledge and skills to enter the world of work. Ethical validity requires that the curriculum promote the values of honesty, objectivity cooperation, and freedom from fear and prejudice, and inculcate in the learner a concern for life and preservation of the environment.

SOCIAL SCIENCE FOCUSED IN NCF 2005

It is believed that the social sciences merely transmit information and are text centered. Therefore, the content needs to focus on a conceptual understanding rather than lining up facts to be memorized for examinations. Reiterating the recommendations of 'Learning without Burden (1993)', emphasis has to be laid on developing concepts and the ability to analyse socio-political realities rather than on the mere retention of information without comprehension.

There is also a perception that not many career options are open to students specialising in the social sciences. On the contrary, the social sciences are becoming increasingly relevant for jobs in the rapidly expanding service sector, and also in developing skills of analysis and creativity.

In a pluralistic society like ours, it is important that all regions and social groups be able to relate to the textbooks. Relevant local content should be part of the teaching-learning process, ideally transacted through activities drawing on local resources. An epistemological shift is suggested so as to accommodate the multiple ways of imagining the Indian nation. The national perspective needs to be balanced with reference to the local. At the same time, Indian History should not be taught in isolation, and there should be reference to developments in other parts of the world. It is suggested that instead of Civics, the term Political Science be used. Civics appeared in the Indian school curriculum in the colonial period against the background of increasing 'disloyalty' among Indians towards the Raj. Emphasis on obedience and loyalty were the key features of Civics. Political Science treats civil society as the sphere that produces sensitive, interrogative, deliberative, and transformative citizens. Gender concerns need to be addressed in terms of making the perspectives of women integral to the discussion of any historical event and contemporary concerns. This requires an epistemic shift from the patriarchal preconceptions that inform much of the social studies at present. The concerns related to

the health of children, and also those related to social aspects of changes and developments occurring in them during adolescence like changing relationships with parents, peer group, the opposite sex and the adult world in general, need to be addressed appropriately. The responses to the health needs of children and adolescents/youth through policies and programmes at different levels are closely related elements of these concerns. The concept of human rights has a universal frame of reference. It is imperative that children are introduced to universal values in a manner appropriate for their age. Reference to day-to-day issues, e.g. the problem of getting water, can be discussed so that young students become aware of issues related to human dignity and rights.

KEY LIFE SKILLS

Based on the guiding principal the following life skills are touched upon in Experiential Learning Projects, as suggested by World health Organisation (W.H.O) recommended by Central Board of Secondary Education (CBSE):

Life skills have been defined as “the abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life” (WHO). ‘Adaptive’ means that a person is flexible in approach and is able to adjust in different circumstances. ‘Positive behavior’ implies that a person is forward looking and even in difficult situations, can find a ray of hope and opportunities to find solutions. The terms ‘Livelihood skills’ or occupational/vocational skills refer to capabilities, resources and opportunities to pursue individual and household economic goals and relate to income generation. Thus, Life skills are distinct from livelihood skills.

Life skills include psychosocial competencies and interpersonal skills that help people make informed decisions, solve problems, think critically and creatively, communicate effectively, build healthy relationships, empathize with others, and cope with managing their lives in a healthy and productive manner. Essentially, there are two kinds of skills - those related to thinking termed as "thinking skills"; and skills related to dealing with others termed as "social skills". While thinking skills relate to reflection at a personal level, social skills include interpersonal skills and do not necessarily depend on logical thinking. It is the combination of these two types of skills that are needed for achieving assertive behaviour and negotiating effectively. “Emotional” can be perceived as a skill not only in making rational decisions but also in being able to make others agree to one's point of view. To do that, coming to terms first with oneself is important. Thus, self management is an important skill including managing/coping with feelings, emotions, stress and resisting peer and family pressure. Young people as advocates need both thinking and social skills for consensus building and advocacy on issues of concern.

- Self Awareness (Psychic + Spiritual)
- Awareness of things around (Psychic)
- To relate with living & non-living things around (Vital + Mental + Psychic)
- Freedom with Responsibility (Vital + Psychic)
- Explore the Unknown (Vital + Psychic)
- Leadership qualities (Physical + Vital + Mental)
- Gratitude, respect, sharing, bonding, etiquette (Vital + Mental + Psychic)
- Beauty, Compassion, Love (Psychic + Spiritual)
- Passion to Learn (Mental + Psychic)
- Concentration (Mental)
- Silence & Meditative mind (Psychic + Spiritual)

- Self Learning capabilities (Mental)
- Physical fitness (Physical)
- Role Model (Physical + Vital + Mental)

OFFERRING - EDU LAB

EduLab....

- Converting the current classroom into a world of dream
- Installing world class experiential learning apparatus /equipment's (living & non living)
- Providing 360 degree experiential learning solution through project based learning
- Implemented across all grades - currently till Class VII
- 20 days per academic year per section of 3 hrs per day

What is it?

- A lab will be created with various equipment, apparatus, displays, materials, living organisms etc.
- A trained experiential learning facilitator will be there to conducts various projects as per class specific plan
- Children build up projects in groups and executes it through exploration, investigation, inquiry and evaluation
- Orient educators and parents in 21st century learning process

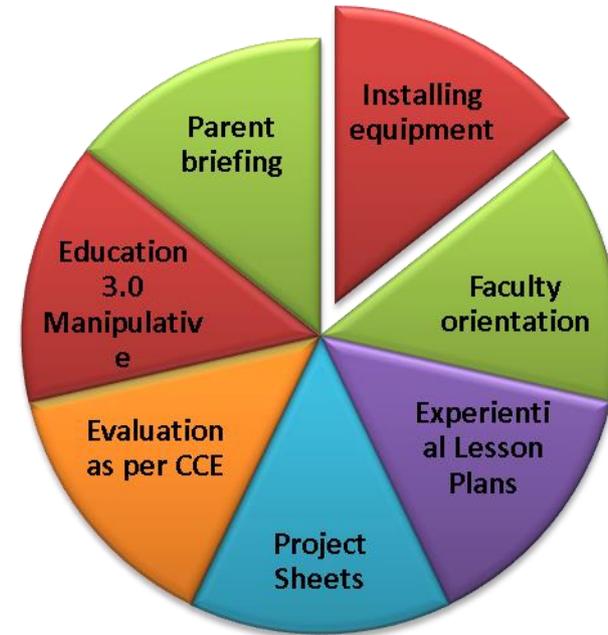
How will it take place?

- **Engagement with educators** to share and extend ideas in executing experiential based learning program
- **Student's engagement** in various hand-on activities as per the project plan.
- **Support to students** by a educator for implementing it in 20 days for 3 hrs/day per academic year
- **Project/Activity sheets** for students in application of the concepts or topics.
- **Evaluation** as per CCE guidelines. Also a three way assessment
- **Outcome** of the projects through exhibition/shows/festivals/screening.

Who is it for?

- Nursery till Class VII students

Where will this program take place?



- Inside ED Lab , At your school premises., School neighborhood , Nearby village

When to conduct Education 3.0?

- From the beginning of any academic year and during the school time.

MAJOR THEMES UNDERTAKEN

Based on NCF and Supported by NCERT, SSERT, CBSE, ICSC syllabus guidelines as per specific grade

Themes	Class III	Class IV	class V
Near and Far	<ul style="list-style-type: none"> • Things around us -living and non-living • Living things _ plants and animals • Physical similarities and differences between human beings and animals • External body parts, • Physical features of the locality • The earth, the sun, the moon and the stars 	<ul style="list-style-type: none"> • Similarities and differences between living and non-living things • Parts of a plant and their functions - roots, stem, leaf, flower and seed • Main internal organs of the body - names and their recognition • Physical features of the locality - natural and man-made changes like roads, buildings, dams, canals, drains, markets, factories, boats, railways • Simple natural phenomena-day and night, thunder and lightning, rainbow 	<ul style="list-style-type: none"> • Meaning of the environment-living and non-living and interaction between them • Similarities and differences between plants and animals • Main internal organs (lungs, heart and stomach) of human body and their functions • Physical features of hills, plains, deserts, valleys • General features of people, plants and animals of these regions • Importance of plants and animals - land and water • Weather and climate (local), their effects on daily life
Food, Water and Air	<ul style="list-style-type: none"> • Need for clean food, air and water • Different types of food 	<ul style="list-style-type: none"> • Sources of food and water • Need for variety of food items • Safe storage and ways of handling of food and water 	<ul style="list-style-type: none"> • Dependence on environment for food • Healthy combination of food items • Different types of food - body building, energy providing and protective (against diseases)
Shelter & Clothing	<ul style="list-style-type: none"> • Shelters of other living beings (nests, caves, burrows, water bodies) • Qualities of a good shelter (house) for safe and healthy living (sunlight, ventilation and sanitation) • Need for clothes, types of clothes, keeping them clean 	<ul style="list-style-type: none"> • Types of houses in relation to different climates • Materials used to construct houses • Sources of raw material for clothes (plants and animals) • Different types of clothes worn in various physical and cultural environments 	<ul style="list-style-type: none"> • Buildings in the locality - school, panchayat ghar, health centre, post office, railway station, police station. Need for their proper maintenance • Different types of fibres and their sources (plants, animals and man-made) • Various stages in making of fabrics

Functions and Festivals	<ul style="list-style-type: none"> • Celebrations in the school and community singing • Family functions and their importance • Various means of recreation at home-story books, games, radio, television 	<ul style="list-style-type: none"> • Celebration of festivals and national days • Types of recreational activities in the locality _ fairs, games, folk dances, music, weekly markets, story books, games, radio, television, drama and puppetry . 	<ul style="list-style-type: none"> • Celebration of important national and international days • Types of recreational activities in the locality - fairs, games, folk dances, music, weekly markets, story books, games, radio, television, drama and puppetry
Health and Hygiene	<ul style="list-style-type: none"> • Need to take care of the different body • Proper habits for personal cleanliness and good health • Care of belongings and immediate surroundings (School, home and neighbourhood) 	<ul style="list-style-type: none"> • Different kinds of waste at home and in school • Effect of body • Proper habits for personal cleanliness and good health • Care of belongings and immediate surroundings (School, home and neighborhood) 	<ul style="list-style-type: none"> • Some common infectious diseases-common cold, flue, diarrhea • Precautions for maintaining proper health and protection against infectious diseases • First aid as a safety measure • Personnel responsible for community health and hygiene
Transport and communication	<ul style="list-style-type: none"> • Means of transport in the locality • Modes of communication • Need for following safety rules at home, at the school and on the road 	<ul style="list-style-type: none"> • Various modes of transport • Need for communication, its means and utility (post, telephone, newspaper, radio and television) • Traffic symbols, safety rules and need for following them 	<ul style="list-style-type: none"> • Simple measures to be practised to reduce pollution related to air, water and noise • Effect of advancement in transport and communication systems on environment and human life
Taking Care of the Surroundings	<ul style="list-style-type: none"> • Natural resources_ air,water and soil • Factors responsible for contamination of air and water • Simple ways to minimise contamination of air and water • Keeping the surroundings clean avoiding spitting, littering, plucking leaves and flowers, scratching/defacing walls/tree trunks, throwing things into drains/water-bodies • Care of plants and animals including pets in the locality 	<ul style="list-style-type: none"> • Acquaintance with natural resources forest, water, animals, food, energy and land • Need for preserving resources • Ways of saving food, water, fuel and electricity at home and at the school • Pollution of air, water, land and the factors responsible for this • Ways of minimising pollution re-use and recycling of waste material • Local agencies responsible for waste disposal • Care of the old, the sick, young children and children with special needs • Need for taking care of public property • Local agencies involved in community services and their roles 	<ul style="list-style-type: none"> • Major natural resources_ need for their preservation and conservation • Renewable and non-renewable sources of energy • Interdependence of human beings, plants and animals • Deforestation and urbanisation and their effect on the environment • Common ways of water conservation, water harvesting • Care of parks, gardens, orchards, ponds, wells, sanctuaries, museums and historical monuments • Simple safety measures in the event of fire, earthquake, flood
Themes	Class VI	Class VII	class VIII

Near and Far	<ul style="list-style-type: none"> • Life in diverse regions • Sharing space 	<ul style="list-style-type: none"> ▪ Every animal has a positive role in the environment ▪ Preventing wastage of electricity 	<ul style="list-style-type: none"> ▪ Death trap ▪ Fossil fuel is not forever ▪ Judicious use of fuels ▪ Global warming
Plants and animals	<ul style="list-style-type: none"> • Getting to know trees • Where do animals live? • Importance of terrace farming • All plants are useful • Compassion for living creatures 	<ul style="list-style-type: none"> ▪ Knowing some plant disease ▪ Study of migratory birds ▪ Pets! To have or not to have ▪ My tree neighbors ▪ Fibres obtained from animals ▪ Forest: Our treasure ▪ Save paper, save tree and save environment ▪ Exploring sericulture 	<ul style="list-style-type: none"> ▪ Quality of soil and crop production ▪ Pests – Uninvited guests ▪ Abode of wildlife ▪ Mosquitoes woes ▪ Dangers of deforestation ▪
Food, Water and Air	<ul style="list-style-type: none"> • Beauty in diversity • Nutrients in food • Creating your own garden 	<ul style="list-style-type: none"> ▪ Cyclone and its impact ▪ Water harvesting ▪ Drastic change in environment disturb well adapted animals ▪ Creating awareness about wastage of water due to negligence 	<ul style="list-style-type: none"> ▪ Estimation of particulate pollution in air ▪ Elixir of life – water ▪ Hazards of air pollution ▪ Monitoring of air pollution ▪ Judicious use of water in irrigation
Art and Culture	<ul style="list-style-type: none"> • Development of urban slums • Knowing about cave art • Exploring community craftsperson • Great personalities of the past 	<ul style="list-style-type: none"> ▪ Pottery as a craft ▪ Industrialisation, globalisation and indigenous crafts 	<ul style="list-style-type: none"> ▪ Handicraft items of different states ▪ Ancient art as communication and history
Functions and Festivals	<ul style="list-style-type: none"> • Exploring historical objects and places • Exploring the history of a village or a city 	<ul style="list-style-type: none"> ▪ Preservation of historical structures: Our responsibility 	<ul style="list-style-type: none"> ▪ Festivals and function of different states in specific period of time.
Health and Hygiene	<ul style="list-style-type: none"> • Reducing wastage of food 	<ul style="list-style-type: none"> ▪ Diseases associated with the human digestive system 	<ul style="list-style-type: none"> ▪ Pollution and diseases ▪ Diseases and their prevention ▪ Vaccination – A shield
Transport and communication	Controlling vehicular pollution	<ul style="list-style-type: none"> ▪ Different types of vehicle ▪ Modes of communications 	<ul style="list-style-type: none"> ▪ Function of a airplane and rocket

Taking Care of the Surroundings	Let's keep our surroundings clean	<ul style="list-style-type: none"> ▪ Changes in the surroundings and their effect ▪ Waste in the market: where does it go? 	<ul style="list-style-type: none"> ▪ Where should the waste go? ▪ Noise pollution ▪ Saviours of our environment
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ACTIVITIES AND PROJECTS

Exemplar Activities	Project domains
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- Providing experiences to observe beauty, symmetry, rhythm and variety in nature.
- Encouraging observation of plants, animals, objects, sites, situations, happenings and occurrences.
- Encouraging collection of different types of objects from the surroundings and their preservation.
- Conducting activities for comparison and classification of objects based on their simple physical characteristics.
- Conducting nature walks.
- Narrating stories and real life incidents.
- Promoting collection, preparation and use of charts, posters, pictures, puzzles and cut-outs.
- Organising picnics and visits to different places (local sites, museums, historical monuments, parks, orchards, farms, gardens) and following them up with discussions.
- Encouraging care and adoption of plants and animals.
- Encouraging participation in activities like clay modelling, making masks, puppetry, paper cutting and folding.
- Involving children in drawing and painting objects and pictures.
- Helping children in taking care of self and maintaining cleanliness.
- Guiding children in developing proper healthy habits and strengthening them periodically through follow-up.
- Sharing children's experiences through simple discussions.
- Helping children to maintain a garden or take care of plants at the school and at home.
- Involving children in planting and taking care of trees.
- Guiding observations regarding level of cleanliness of different sites and in labeling them as clean or dirty, hygienic or unhygienic and polluted or unpolluted.
- Organising individual and group activities for maintaining cleanliness of school and classroom.
- Promoting proper ways of waste disposal at home, at the school and in the neighborhood.
- Making use of dry leaves, flowers, waste materials and natural products in decoration of school and home.
- Involving children in activities through eco-clubs, nature clubs, school health clubs and eco-corners.
- Conducting nature and environment related games.
- Organising recitation of songs and poems.

outdoors

in house

Fine Arts

Technology

Astronomy

Dynamic Sci.

Outdoor Edu.