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The purpose is to provide a forum for teachers, teacher-educators, educational administrators and research workers; to encourage original and critical thinking in education through presentation of novel ideas, critical appraisals of contemporary educational problems and views and experiences on improved educational practices. The contents include thought-provoking articles by distinguished educationists, challenging discussions, analysis of educational issues and problems, book reviews and other features.

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# JOURNAL OF INDIAN EDUCATION

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# CONSTITUTION OF INDIA

## Preamble

**WE, THE PEOPLE OF INDIA**, having solemnly resolved to constitute India into a **SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens:

**JUSTICE**, social, economic and political;

**LIBERTY** of thought, expression, belief, faith and worship;

**EQUALITY** of status and of opportunity; and to promote among them all

**FRATERNITY** assuring the dignity of the individual and the unity and integrity of the Nation;

**IN OUR CONSTITUENT ASSEMBLY** this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

## EDITOR'S NOTE

This issue of Journal of Indian Education brings to focus some important aspects of learning and schooling. The themes include: constructivist pedagogy, equality of educational opportunities, education in rural settings, reforming the examination systems and children's participation in the management of natural resources. Recognising the learner as constructor of knowledge from the experiences s/he gains and by critically questioning, the paper on constructivist pedagogy in classroom by H.K. Senapaty and Nityananada Pradhan advocates the constructivism as a philosophy to enable the learner to possess knowledge that s/he knows he learnt by himself where the teacher, textbook and the whole world facilitate his/her learning. The paper lists out features of a constructivist classroom as *(i) Learning should take place in 'authentic and real world environment; (ii) Learning should involve social negotiation and mediation (iii) content and skill should be made relevant to the learner (iv) content and skills should be understood within the framework of the learner's prior knowledge (v) students should be assessed formatively, that paves way to inform future learning experiences (vi) students should be encouraged to become self regulatory, self-mediated and self-aware (vii) teachers serve primarily as guides and facilitators of learning not instructors (viii) Teachers should provide for and encourage multiple perspectives and representation of content.*

Now that the review of the National Curriculum Framework is in progress to relook at the very way the school knowledge is perceived. The review, while placing stress on reducing the burden on children, recognises them as constructors of knowledge. This paper provides scope for benefiting from the constructivist pedagogy, enriching children with their world of learning.

Jaya Mukerji in her paper on Krishnamurthy's thoughts on equality of educational opportunities probes into the question of "what is" through the process of "choiceless awareness" and creating an appropriate communion where the teacher and the students learn together and feel themselves at the same level. This paper would throw some light on 'what' and 'how of knowledge' to both teachers and students. R.P. Singh's paper on Indian Rural Education points out how facilities and infrastructure in rural areas pose a serious problem in providing quality education to children. He feels strongly that this could be overcome with the use of modern technologies like the *edusat*. The paper brings out the relationship between the education and development and advancement. Mamta Agrawal in her paper on examination reform initiatives in India traces the form and mode of testing and evaluation from historical perspectives and how they impacted the education of children. A. Sukumar's research study on shaping students in the management of

natural resources is of use for teachers and students as it illustrates how students can learn to acquire knowledge to facilitate the process of conservation of natural resources.

The study on supporting private students at the universities by R.K. Srivastava, Anita Jagrati and R.P. Pathak suggests the need for remedial measures to address the problems of students who, for some reasons could not make it to regular colleges but are keen to enhance their achievement.

Please bear with us for the delay in bringing out this issue.

*Academic Editor*

# Constructivist Pedagogy in Classroom

## *A Paradigm Shift*

H.K. SENAPATY\*  
NITYANANDA PRADHAN\*\*

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### **Abstract**

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*Recognising learner as constructor of knowledge and an active participant in the process of learning are the bases of constructivist theory of learning. This paper presents the salient features of constructivist pedagogy and explains the pertinent role of teachers in making the child a constructor of knowledge. The primary beliefs that the paper postulates as base for the constructivist pedagogy are: (i) learning takes place in authentic and real world environment (ii) learning should involve social negotiation and mediation (iii) content and skills should be made relevant to the learner (iv) content and skill should be understood within the framework of the learner's prior knowledge (v) students should become self-regulatory, self-oriented and self-aware (vi) teachers serve primarily as guides and facilitators of learning.*

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Key words: constructivist pedagogy, instructional strategy

The latest catchword in educational circle is 'constructivism', applied both to learning theory and epistemology – both to how people learn and the nature of knowledge. The term refers to the idea that individuals, through their interaction with the environment, construct their own knowledge and meaning (Fosnot 1996; Steffe and Gale, 1995) This metaphor of construction comes from the idea that humans are

builders, shapers, and designers, who throughout history have created artifacts from pots to skyscrapers. All these tangible products were and are still being built through the process of selecting the materials, arranging or mixing the materials together, resulting in a whole that is greater than some of its parts (Spivey, 1997). However, as humans we also create mental products or meanings as well as we create things.

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These meanings can be referenced as understandings, interpretations, responses, intentions, plans, or memories.

Mayer (1996) refers to this idea as the SOI model to highlight three crucial cognitive processes in constructivist learning: S for selecting relevant information, O for organising incoming information, and I for integrating incoming information.

The emphasis of the constructivist theory is both on the process as well as the product. In constructivist approach it is important to know how much students have learned as well as the process by which they have come to know. Such a theory of knowledge and learning has significant implication for teaching. It changes the dynamics of the traditional classroom by empowering the learner as the focus and architect of the learning process while redefining the role of the instructor as a guide and helper, rather than the source and conduit of knowledge. Constructivism has become an educational theory of choice for small modern educational institutions. It is important for the teachers and the teacher-educators who really want to participate in this movement to gain insight into its core pedagogical principles and how these principles determine/influence the major aspects of classroom instruction, e.g. role of the teacher, instructional strategy, evaluation, etc.

### **Constructivist Pedagogy**

Instruction that is based on constructivist principles is extremely

demanding of the teacher. The three domains of teacher knowledge that are important to their effectiveness in moving to constructivist approaches include, general pedagogical knowledge, subject matter knowledge, and pedagogical content knowledge. Constructivist pedagogy is the link between theory and practice. Many theorists and practitioners (Brooks and Brooks, 1993; Driscoll, 1994; Jonassen, 1991) have generated constructivist pedagogies with an array of results. While these pedagogies share a set of core design principles, the peripheral principles tend to vary greatly. The general theoretical and practical constructivist consensus across all the three types of constructivism, viz. cognitive constructivism, social constructivism, and radical constructivism, indicates that eight factors are essential in constructivist pedagogy (Brooks and Brooks, 1993; Laroche, Bednarz and Garrison, 1998; Steffe & Gale, 1995). These principles, however, are not solely constructivist in nature. Indeed, all these principles have been proposed by other theories/theorists in other times. What makes the following principles 'constructivist' is the assemblage and the rationale for their inclusion.

#### ***(1) Learning should take place in authentic and real world environment***

Experience, both socially oriented and object oriented, is a primary catalyst of knowledge construction. Experience provides the activity upon which the mind operates. In addition, knowledge

construction is enhanced when the experience is authentic.

***(ii) Learning should involve social negotiation and mediation***

While social constructivism emphasises social interaction as a basis for knowledge construction, cognitive and radical constructivism do assign social interaction a role.

Social interaction provides for the development of socially relevant skills and knowledge. In some cases, e.g. greetings, gender relations, dresses, etc. knowledge can only be attained through social contact. As an individual gains experience in a social situation, this experience may validate his knowledge structure or it may contradict those structures. If there is contradiction or confusion, then the individual must accommodate this contradiction in order to maintain an accurate or social model of reality. Language is the medium through which knowledge and understanding are constructed in social situations (Spivey, 1997).

***(iii) Content and skills should be made relevant to the learner***

Constructivism emphasises the concept that knowledge serves an adaptive function. The knowledge attained, i.e. content and skills, in order to enhance one's adaptation and functioning, must be relevant to the individual's need, understanding, and goal. This relevancy is likely to increase the individual's motivation. Ultimately, experience with relevant tasks will provide the individual with the mental process and social experiences necessary for enhanced

functioning within one's practical environment.

***(iv) Content and skills should be understood within the framework of the learner's prior knowledge***

All learning begins with an individual's prior knowledge, regardless of constructivist affiliation. Understanding a student's behaviour requires an understanding of the student's mental structure, i.e. an understanding of the student's understanding. When a student replies that the answer to  $54-38$  is 24, the teacher must not think it immediately to be wrong, but rather try to understand the student's understanding of subtraction that has led to this answer. In this case, the student appears to be using the following rule of subtraction: 'Subtract the smallest from the largest'. Understanding the student's rule usage makes it much easier for the teacher to demonstrate the non-viability of the student's understanding. The teacher in this case, for example, may ask the student to count out 54 blocks, then take away 38 blocks from that pile, and finally count the remaining 16. Only by attempting to understand a student's prior knowledge will the teacher be able to create effective experiences, resulting in maximal learning.

***(v) Students should be assessed formatively, serving to inform future learning experiences***

Constructivism asserts that the acquisition of knowledge and understanding is an ongoing process that is heavily influenced by a student's

prior knowledge. Knowledge and understanding are not directly visible, but can be inferred from one's action. Thus, to take into account an individual's current level of understanding in this ongoing teaching-learning process, a teacher must continually assess the individual's knowledge. This formative assessment is necessary to create the subsequent series of experiences and activities for the students.

***(vi) Students should be encouraged to become self-regulatory, self-mediated, and self-aware***

The underlying tenet of constructivism is that learners are active in their construction of knowledge and meaning. This activity involves mental manipulation and self organization of experiences; and requires that students regulate their own cognitive functions, mediate new meaning from existing knowledge, and form an awareness of current knowledge structures. Within a cognitive constructivist perspective, self-regulation, self-mediation, and self-awareness would be subsumed under the construct of metacognition. Metacognition is considered an essential aspect of learning and consists of (i) knowledge of cognition, and (ii) regulation of cognition (Brown & Palincsar, 1987). Vygotsky (1978) believed that students construct mental signs or psychological tools to represent concepts and relationships, and that these tools are used to mediate cognition. Similarly, Piaget (1977) theorized that students mentally reflect on the use and

nature of objects and then construct new knowledge by generalising new relationships.

***(vii) Teachers serve primarily as guides and facilitators of learning, not instructors***

The role of the teacher, in constructivist perspective, is to motivate, provide examples, discuss, facilitate, support, and challenge, but not to transmit knowledge. In the cognitive constructivist perspective, the role of the teacher is to create experiences in which the students will participate so that it will lead to processing and acquisition of knowledge. On the other hand, social and radical constructivism argues that the role of the teacher is only to guide students to create awareness about their experiences and socially agreed-upon meanings. They advocate that there is no factual knowledge to transmit.

***(viii) Teachers should provide for and encourage multiple perspectives and representations of content***

Experiencing multiple perspectives of a particular event provides the student with the raw materials necessary to develop multiple representations. These multiple representations provide students with the ability to develop more complex schemes relevant to the experience. In a nutshell, multiple perspectives provide the students with a greater opportunity to develop a more viable model of their experiences and social interactions.

### **Constructing Knowledge in the Classroom**

In the classroom our students represent a rich array of different backgrounds and ways of thinking. Myths, taboos, and things we learn from our families, friends, and teachers, are all part of cultural influence. Content is embedded in culture and it is difficult to separate the two. When presented with information in the classroom that contradicts existing ideas, a student may try to accommodate both interpretations, rather than change deeply held beliefs. Unless the teacher realizes what views the students hold, classroom teaching can lead students to construct faulty ideas. If the classroom can provide a neutral zone where students exchange their personal views and test them against the ideas of others, each student can continue to build understanding based on empirical evidence. Hands-on activities and observations of the natural world provide shared experiences for those constructions. For example, to study the phases of the moon, the class could keep a 'sky journal', i.e. an observational log of the moon and its shape in the sky, for several weeks.

Small groups discuss the various observations and speculate about their meanings. If models, text references, or illustrations are available as resources, students should know that these are the results of others observations and speculations. Such references are actually the 'construction' by others of the current understanding of the world around us.

Research on instructional advancement of the last 30 years,

particularly in the areas of cognitive processing, teacher effects, and teaching of cognitive strategies, revealed that the constructivist view affects all the important aspects of the teaching-learning process, e.g. role of the teacher, classroom environment, instructional strategy and evaluation (Rosenshine, 1996). The major aspects that mostly influence knowledge construction in the classroom are discussed in greater detail as below:

#### ***The Constructivist Classroom***

A constructivist classroom must obviously operate in the backdrop of constructivist learning environments and the key principles of constructivism. In the constructivist classroom, the focus tends to shift from the teacher to the students. The classroom is no longer a place where the teacher pours knowledge into passive students, who wait like empty vessels to be filled. Students are actively involved in the learning process and given the opportunity to construct knowledge based on their own background. The constructivist teacher sets up problems and monitors student exploration, guides the direction of student inquiry, and promotes new patterns of thinking. Classes can take unexpected turns as students are given the autonomy to direct their own explorations. In specific *terms*, a constructivist classroom bears the following characteristics (Brooks & Brooks, 1993):

- *Student's autonomy and initiative are accepted and encouraged: By respecting students' ideas and encouraging independent thinking,*

teachers help students attain their own intellectual identity. Students who frame questions and issues and then go about analysing and answering them, take responsibility for their own learning and become problem solvers.

- *The teacher asks open-ended questions and allows wait time for responses:* Reflective thought takes time and is often built on others' ideas and comments. The way teachers ask questions and the way students respond will structure the success of student inquiry.
- *Higher-level thinking is encouraged:* The constructivist teacher challenges students to reach beyond the simple factual response. He encourages students to connect and summarize concepts by analyzing, predicting, justifying, and defending their ideas.
- *Students are engaged in dialogue with the teacher and with each other:* Social discourse helps students change or reinforce their ideas. If they have the chance to present what they think and hear others' ideas, students can build a personal knowledge base that they understand. Only when they feel comfortable enough to express their ideas will meaningful classroom dialogue occur.
- *Students are engaged in experiences that challenge hypotheses and encourage discussion:* When allowed to make prediction, students often generate varying hypotheses about natural phenomena. The constructivist teacher provides ample opportunities for students to

test their hypotheses, especially through group discussion of concrete experiences.

- *The class uses raw data, primary sources, manipulatives, physical, and interactive materials:* The constructivist approach involves students in real-world possibilities, then helps them generate the abstractions that bind phenomena together.

### ***The Constructivist Teacher***

Constructivism, as a theory of learning, is based on the idea that learning occurs when a learner actively constructs a knowledge representation in working memory. According to this view, the learner is a sense maker, whereas the teacher is a cognitive guide. In the classroom, the constructivist view of learning can point towards a number of different teaching practices. In the most general sense, it usually means encouraging students to use active techniques, e.g. experiments problem solving, to create more knowledge and then to reflect on and talk about what they are doing and how their understanding is changing. The teacher makes sure she understands the students' pre-existing conceptions, and guides the activity to address them and then build on them.

Constructivist teachers encourage students to constantly assess how the activity is helping them gain understanding. By questioning themselves and their strategies, students, in the constructivist classroom, become expert learners. When they continually reflect on their experiences, they develop increasingly strong abilities to integrate new

information. One of the main roles of the teacher here is to encourage this learning and reflection process. For example, groups of students in a science class are discussing a problem in physics. Though the teacher knows the answer to the problem, she focuses on helping students restate their questions in useful ways. She prompts each student to reflect on and examine his or her current knowledge. When one of the students comes up with the relevant concept, the teacher seizes upon it, and indicates to the group that this might be a fruitful avenue for them to explore. They design and perform relevant experiments. Afterward, the students and teacher talk about what they have learned, and how their observations and experiments helped or did not help them to better understand the concept.

Contrary to criticisms by some traditional educators, constructivism does not dismiss the active role of the teacher or the value of expert knowledge. Constructivism modifies that role, so that teachers help students to construct knowledge rather than to reproduce a series of facts. The constructivist teacher provides tools such as problem-solving and inquiry-based learning activities with which students formulate and test their ideas, draws conclusions and inferences, and pool their knowledge in a collaborative learning environment. Constructivism transforms the student from a passive recipient of information to an active participant in the learning process. Always guided by the teacher, students construct their knowledge actively rather than just mechanically receiving knowledge from the teacher or the textbook.

In a nutshell, the constructivist teachers perform the following roles:

- Encourage and accept student autonomy and initiative.
- Use raw data and primary sources, along with manipulative and interactive materials.
- Use cognitive terminology such as 'classify', 'analyse', 'predict', and 'create'. Allow student responses to drive lessons, shift instructional strategies, and alter content.
- Inquire about students' understanding of concepts before sharing their own understanding of those concepts.
- Encourage students to engage in dialogue, both with the teacher and with one another.
- Encourage student inquiry by asking thoughtful, open-ended questions and by encouraging students to ask questions to each other.
- Seek elaboration of students' initial responses.
- Engage students in experiences that might endanger contradictions to their initial hypotheses and then encourage discussion.
- Allow wait time after posing questions.
- Provide time for students to construct relationships and create metaphors. Nurture students' natural curiosity through frequent use of the learning cycle model.

### **Instructional Strategies**

The constructivist revolution offers a new vision of the learner as an active sense maker and suggests new methods of

instruction. It facilitates presentations of materials in a constructivist way and engage students in an active explorative learning. The new approach allows the learners to have more control over their own learning to think analytically and critically, and to work collaboratively. This constructivist approach is an effort at educational reform, and particularly a revolutionary vision of instructional strategies. Research on instructional strategies, particularly in the areas of cognitive processing, teacher effects, and teaching of cognitive strategies, suggest specific instructional principles that can be of great use to create constructive learning environment in the classroom. The important and workable ones are as follows (Rosenshine, 1996, pp.1019):

- Present new materials in small steps (Rosenshine and Stevens, 1986).
- Help students develop an organisation for the new material (Palincsar & Brown, 1984).
- Guide student practice (Hunter, 1982)
- When teaching higher level tasks, support students by providing them with cognitive strategies (Pressely et al., 1995).
- Help students learn to use the cognitive strategies by providing them with procedural prompts and modeling the use of these procedural prompts (Palincsar and Brown, 1984; Scardamalia and Bereiter, 1985).
- Provide for extensive student practice
- Provide models of the appropriate responses: (i) during initial

instruction, before students practiced; (ii) during practice; and (iii) after practice.

- Anticipate and discuss potential difficulties.
- Regulate the difficulty of the material.
- Provide feedback and corrections.
- Increase student responsibilities.
- Provide independent practice with examples.

### ***Evaluation***

In traditional teaching-learning process, evaluation pre supposes a universal goal for the instruction. An evaluation programme intends to measure the progress towards the goal, and the information compiled about many students suggests the relative proficiency of the system in terms of achievement of the goal. With a constructivist view of knowledge, the goal is to improve the ability to use the content domain in authentic tasks (Brown, Collins and Duguid, 1989). The evaluation must examine the thinking process. This is not to suggest, however, that the issue of thinking is independent of the content domain (Bendar et al, 1995). Possible ways of evaluation would, for example, be asking students to think aloud, address a problem in the field of content and then defend their decision, or reflect on their own learning and document the process through which they have constructed their view of the content. In a nut -shell, evaluation of student learning, from a constructivist perspective, should not be judged only on the specifics of knowledge, but whether the student can solve the problem posed with viable solution (Sharma, 2001).

## Conclusion

The constructivist view of the world as having reality only as it is understood by the learner signals a dramatic departure from theories which view the world as objective truth to be explained and accepted. This change represents a fundamental shift in the understanding of the learning relationship. It gives new status to the learner as the active constructor within the learning activity instead of being the passive respondent to externally determined world of education. Constructivism challenges learners to move beyond fact learning to more transportable cognitive understanding. It defines teaching to be an exciting process of joining in the intellectual discovery of others. The constructivist teacher becomes a partner who is given the opportunity to see familiar educational vistas through new eyes and in a real sense become a fellow learner with the students he serves. Becoming a constructivist teacher may prove a difficult transformation since most instructors are prepared for teaching in the traditional manner. It is seen that most of our teachers seek to transmit vast amount of information, within a limited

time, using textbooks, and multimedia. This is how human brain is not properly utilised in our schools. The use of cheap electronic devices, like computes for storing vast amount of information can substantially reduce the burden of human brain. Now human brain which possesses the ability to think can profitably be used to perform those tasks that cannot be done by a machine, e.g. decision making, creative thinking, problem solving, etc. It requires a paradigm shift and the willing abandonment of familiar perspectives and practice; and the adoption of new ones (Brooks and Brooks, 1993, p.25). We are convinced that the pedagogy of future will develop increasingly effective procedures based on constructivist principles. The Internet makes it possible to develop two radically new notions in education: communities of learners and communities of users. In each case, learners can discover and develop an identity that situates them with regard to the subject matter.

Whatever the subject to be learned, the notion of pedagogic space now, needs to be rethought. Pedagogy can both become a truly productive activity and escape the pattern of blaming individual failure on either bad teachers or bad students.

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# Krishnamurti's Thoughts on Equality of Educational Opportunities

JAYA MUKERJI\*

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## Abstract

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*The definition of equality of educational opportunities is confounded by atleast three facets. The first is providing a standardised education for all ignoring innate abilities. The second implies imparting education according to measured abilities which itself is a product of many variables, and the third selectively targeting education to the requirements of the under privileged so that the gap between the advantaged and disadvantaged is bridged. Close perusal of Krishnamurti's educational philosophy reveals an inbuilt mechanism of overcoming some of these difficulties, and is being actively experimented with, in the educational institutions of Krishnamurti. For this, a brief review of Krishnamurti's educational philosophy becomes necessary. Centring around the individual and proceeding to improve the society, Krishnamurti calls for radical transformation at the level of the individual, by first understanding the "what is" or the truth by observing without bias and without attempting to change, through a process of "choiceless awareness". This leads to an understanding of the Self in relationship to everything in the universe- a knowledge which one acquires without a guru, from the book of life and through a process of lifelong learning. By adopting this philosophy, Krishnamurti's schools seek to provide equal opportunities of education for all. Care is taken for creating the right atmosphere in these institutions to bring about a different kind of mind, and the management is ever alert to a proper type of communion where the teacher and the taught learn together and feel themselves at the same level. Those who study in these institutions reach out to the satellite centres situated in the interior, and transmit what they have learnt. For older persons, unable to attend these schools for various reasons, there are study centres where they can meditate and learn during their free time.*

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Key words: quality of educational opportunities, Krishnamurthi's educational philosophy

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Equality refers to the state of being equal, correspondence in quantity, degree, value, rank, ability, uniform character (The Random House Dictionary). In the educational context this can have three interpretations. The first is that the total educational resources should be equally distributed among all individuals without regard to abilities, that is, all schooling should be of a standardised pattern. The outcome of this, however, would be disbalanced as all individuals do not have the same innate abilities. Besides, the school is just one among the many factors that influence the development of children. Social factors like motivation and aspiration, teacher quality and parental interest vary among different social groups, and providing identical school facilities without adequate cognizance of these factors will not give the desired results. The second interpretation is to categorise children according to measured abilities alone, irrespective of environmental factors. This approach is also flawed because meritocracy depends greatly on environmental factors and would amount to segregating students in terms of favourable and unfavourable environments and not real abilities. The third interpretation proceeds to give education to underprivileged children so as to reduce the educational gulf between the advantaged and disadvantaged children.

Close perusal of Krishnamurti's philosophy and educational thoughts reveal an inbuilt mechanism of equal opportunities for all. This is thematic to the 'experiments in living' - a term that has been used to describe the schools of Krishnamurti. To understand this, some

of the important requirements of education may be enumerated. These are:

1. Knowledge to be acquired
2. Source of knowledge
3. Ability and process of understanding
4. The guru or teacher

Krishnamurti's educational ideas provide a curious blend of all these, and for a succinct understanding it would not be out of place to briefly review the crux of his educational philosophy.

Krishnamurti's philosophy is centered on the individual. In order to bring about betterment in society or the world, first the individual has to change radically. To bring about a radical transformation in the individual there has to be a direct perception of the 'what is' or truth. Truth is the life that one leads everyday and one has to understand this as a fact. In order to discover the 'what is' one must have the quality of being free within, that is, having an open mind, a mind that has stopped to build images around the reality, that perceives everything holistically, not projecting from the past, through the present, into the future. The mind is alert and watching without attempting to modify what one sees, on the basis of previous images - the process of 'choiceless awareness'. By this one sees oneself in the mirror of relationship and understands that everything in the universe is interrelated, leading to the realisation that everyday deeds can create struggle and strife. This leads to the understanding of the Self. This knowledge is, according to the philosophy of Krishnamurti, spontaneous and

without a guru, and comes from the book of life. The person is his own teacher and the need to search for special institutions and teachers are somewhat redundant. The opportunities of learning, therefore, are available to all and denied to none. According to Krishnamurti, education aims at a true holistic transformation in the human mind, a complete change in the psyche, the development of a fresh new mind which will destroy the old ways of thought, totally free the mind from working within the narrow groove of tradition, beliefs, ideology and habits.

The educational institutions of Krishnamurti are places where experiments in living, according to the philosophy of Krishnamurti, are being carried out. These involve a judicious mix of the understanding of the Self through equal opportunities provided to everybody, keeping in mind the interpretations of equality as discussed in this paper, and an ultimate blending with the conventional stream of education.

Krishnamurti's guidelines to the schools were on two fronts - one was creating the right atmosphere to bring about a different kind of mind, and the other was with regard to the nature of the organisation that would manage the institution. Krishnamurti has explained the meaning of the word 'communion'. He says it means "to communicate, to be in touch, to transmit a certain feeling, to share it, not only at the verbal level, but also at an intellectual level and also to feel much more deeply, subtly." It is this communion that is there in the schools, where the teacher and the students psychologically feel themselves to be at the same level, and not the teacher as

someone superior, imparting information to the students authoritatively. Krishnamurti held that each individual is unique and opportunities must be given through education to let him fully flower. The schools, therefore, provide an atmosphere of freedom where the teacher and student explore together their outer and inner world freely, unburdened by any kind of imposition, and this comes about when there is function without status, when there is a feeling of equality and not authority. There must be a cultivation of the totality of the mind, learning in the field of 'what we are' and not merely the giving of information. For this the educators must encourage the students to inquire and think independently, feel total responsibility for what is happening in the world, be convinced of the futility of comparisons, motivating the child through love devoid of rewards and punishments, learning for the joy of understanding and making the child realise that perfection and not greatness should be the aim. Learning implies the love of understanding and the love of doing a thing for itself. Dialogues are encouraged where students and teachers are given the opportunity to openly voice their feelings, in case of disagreement, without repercussions, and to learn about responsibility and working together.

Krishnamurti often said that a dozen persons undergoing total psychological transformation could change the world, and that learning was reading the text of life - a lifelong process. Most of the educational institutions of Krishnamurti have satellite centres where students from the institutions go and transmit Krishnamurti's ideas to larger groups

who are unable to attend during school hours for various reasons. For those who are busy earning a livelihood and are no longer young, there are study centres where people can meditate and learn to read the text of life. Rural educational programmes are being carried out in Rishi Valley and Rajghat Education Centre. To cite an example, Bal Anand School run by Krishnamurti Foundation India in Mumbai is an after-school centre where opportunities for creative work are given to children from underprivileged families in an atmosphere of affection and freedom. Therefore, one can see that Krishnamurti's educational ideas create an inbuilt opportunity for everybody to learn, be it adult education, women education, educating school drop outs, mass education or the spread of literacy.

While discussing equality of education in conventional terms earlier in this paper, certain shortcomings of a uniform pattern of education for all, or the imparting of education on the basis of meritocracy or measured ability have been mentioned. Two types of experiments are being conducted in Krishnamurti schools to overcome these Mixed Age Grouping and Multi Level Card System.

*Mixed Age Grouping:* Since students differ in speed and ability to learn subjects, an attempt to tackle this situation is made at some schools of Krishnamurti where classes of mixed age group have been introduced. Here children of the lower classes learn from children of the higher classes, and the children of the higher classes become the junior ones in the next higher class.

*Multi Level Card System:* In a horizontal division like textbook teaching, all

children study the same text and it becomes difficult to cater to the individual needs of each child. In multi level card system the children are first given oral lessons and proceed stepwise. Teachers begin by questioning, eliciting answers from students and thus facilitating their active participation. Once the concept is introduced, the children pick up the multi level cards which are prepared in increasing difficulty order by the teachers themselves. There are four levels of cards for each class. Last two levels of the previous class overlap with the first two levels of the next class. Children who are unable to master the last two levels of the previous class can again begin with these two levels in the next class. It is easier for children to cope up when they proceed according to their own level.

Regarding an intensive thrust of education for the socially backward classes with a view to narrow the gap between the advantaged and the disadvantaged groups, the rural education programme of Krishnamurti schools and satellite centres have already been mentioned. Other features of Krishnamurti schools which serve to encourage heuristic learning and which to some extent obviate the need of a good teacher or institution, are found in the institutions of Krishnamurti. To mention a few:

1. *Observing Nature:* Children are encouraged to take nature walks, observe and care for plants and animals and by doing so they observe every movement of nature with an open mind, letting all that nature has to say flow in freely without any bias or prejudice, to be

sensitive to everything around and thus understand oneself in relationship to everything in nature and perceive the 'what is'.

2. *Friendly Matches:* Friendly matches are held between staff and pupils so as to encourage cooperation and discourage competition.
3. *Assessments:* The assessment of the pupils is not according to marks or grades. Instead, there is a comprehensive reporting of the child's learning growth where the teachers comment on the 'achievement' and 'effort' of the pupil in each subject, apart from making general remarks.

Krishnamurti's institutions have a system of encouraging dialogues not only among students but also between teacher and student, teacher and teacher. These comprise of intense, open dialogues. They begin by 'not knowing'. In not knowing, not identifying oneself with any point of view or ideology, not trying to convince each other of anything, all are prepared to investigate the truth together.

In conclusion, it may be mentioned that Krishnamurti schools are experiments in living. Their satellite centres serve the disadvantaged who are unable to receive the benefits of this campus atmosphere, and for those students who reside in rural areas and are unable to take advantage of the main institutions. The word 'experiment' itself implies that a campus life of Krishnamurti schools are still in a trial stage, where the educational philosophy of Krishnamurti is being collectively

interpreted through dialogues, and practised to the extent that is possible under constraints of prevailing circumstances of the day. The goal of attainment of academic excellence allows the eventual confluence with the conventional pattern of education, as also the spirit of competition which this would invariably create, in spite of a philosophy to the contrary. Nevertheless, the attempt at bringing about an atmosphere in the campuses where people pursue their studies in a climate of freedom from fear and comparison, closeness to nature, filled with the joys of learning, by itself is of great importance and relevance in the present day context. This is an attempt to create an environment which would be the same for all living in the campus. It may be argued that the difference that environment can create in the measured ability of students can, to some extent, be neutralised.

As has been mentioned earlier, due cognizance is taken of the slow and fast learners, the multi level card system and the intra and inter class exchanges of information between students and teachers serve to make the learning process more uniform and joyful. Thus we find that the educational institutions of Krishnamurti are experimenting on an educational system which provides education for all, seeks to encourage meritocracy without an adverse impact on the slow learners, and takes keen interest in the progress of the academically backward so that the gap between the advantaged and the disadvantaged is narrowed down.

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# Indian Rural Education

## *Stepping into 21st Century*

R.P. SINGH\*

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### **Abstract**

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*We are on the threshold of a revolution that is bound to catapult the present rural infrastructural backwardness into modern day urban facilities and make available opportunities of the most advanced societies in our own backyard. We discuss here two unrelated exclusive Indian achievements and examine their potential for our use.*

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Key words: rural education, EDUSAT

According to an old and familiar saying 'India lives in its villages.' Their infrastructural backwardness continues to hog limelight. While lack of electricity is a national phenomenon, lack of connectivity falls in the rural domain. Even so, villages today are no longer idyllic. They are changing and changing very fast. Today's average villager expects to receive all that is freely available in the urban areas. He finds no reason to feel satisfied with his old ways of life and living. This means that education has become essential for fructification of one's dreams. Any comprehensive analysis of India's illiterate population would reveal that most of this segment constitutes

rural population, migrant labour, street children, tribal people and the physically or mentally challenged.

The means to reach out to them either do not exist or society per se has accepted that they are unreachable and therefore, they are unteachable as well. Even in the urban areas where education is seemingly being provided to all has little to commend itself. In fact, the infrastructure that makes education an enjoyable experience (notwithstanding Prof Yash Pal) simply does not exist.

Two unrelated exclusive Indian achievements have the potential to transform rural economy and

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connectivity. In fact, when fully operational, the problems of rural migration to urban centres will become history. These are: an exclusive educational satellite in the space called **EDUSAT** and the use of hydrogen for running motors. In other words, the best of education can now reach the remotest corners of the country and that too at a nominal cost and similarly electricity through hydrogen-driven motors without much bother. Within a couple of months (*not* years) we can see a transformation of Indian society never imagined ever before.

We have, therefore, to identify and target relevant groups where they exist and offer them an education, which is both 'relevant' and 'meaningful'. The term 'relevant' here does not connote that education should merely enable one to remain rooted to a way of life one has been used to living. Instead, it should succeed in breaking barriers that have forced one to start loving the monotony of routine in place of adventure. The reasons why the West could advance so much lay in its education becoming a source of adventure and innovation. The ability to take risks, think independently and create conditions that are conducive for growth besides being ambitious explain to a large extent the leaps West took in the past couple of centuries. Things are changing in Asia and Oceania. I wish, we too in India, acknowledged this reality and encouraged the spirit.

In my view, we should prepare a blueprint for identifying different segments of population that need to be approached for getting educated. While collecting and interpreting census data it is possible to prepare a comprehensive

plan for an all-out approach to access target groups. The first step in the series of measures that we ought to take is to have access to educational institutions. With the help of current levels of technology it is no longer a pipedream to be able to do so. For once, the technology would help the teacher to reach the target group. Distances can be covered in no time and meaningful education can be offered at a time convenient to the learner. It is now *possible* to create *multiple* plans of varying levels of specialisation and offer them simultaneously. This is where the intelligent use of technology can yield the best of results.

Now, let us consider what needs to be provided first i.e. what kind of infrastructure is imperative for our game plan to succeed. The entire modern technology is dependent on the process and availability of connectivity, If we are able to connect with our target groups/ audience the first stage will have been covered. All kinds of problems exist in the first stage itself. We are woefully short of electricity. States like Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh have very little electricity. The alternative sources of providing the same too are in a miserable state of development. The wind power, sun power and even atomic power have failed to reach people. The technology to reach people is dependent on the availability of electricity or else how do we connect? This is one area that demands our attention on a priority basis. There is no alternative way to circumvent this stage of development. In fact, this question relates to a stark reality. We must continue to make efforts and keep thinking of tapping perennial

energy sources. Indian scientists have already started working on these lines. One isn't sure though that they are anywhere near a breakthrough. The moment we are able to find or create alternatives for the availability of inexpensive energy sources half of the battle that we must wage to become an advanced nation will have been won. On 2 December 2004 the national dailies reported that hydrogen has been successfully tested to run motorcars and all kinds of engines. Tomorrow's electricity generators, if run on hydrogen, can give our rural schools both light and connectivity. We seem to be very close to a breakthrough in the field. Meanwhile, the rural areas where our eternal source of electricity generation exists its use is highly recommended. I am talking here, about the solar power. Also, there is a possibility to start using methane gas for generating power. At least in this regard villages are more suitably placed than the urban areas. In fact, the idea is to make each village independent in terms of power generation by using renewable sources of energy. Tomorrow's planning must concentrate on exploiting these perennially renewable sources of energy. The implications of this kind of approach hardly needs any particular emphasis.

The second part of the plan constitutes identification and bringing together of the target groups to a common point where they could access 'virtual classroom' technology at any point of time without interruption. We may, in the meantime recount that what is already available can be used with considerable acumen and economy for the benefit of our people. Let us not forget that we are *the only country* in the world, which has

successfully placed an exclusive educational satellite (indigenously prepared and launched) in the orbit. The Edusat as it is being called is going to have 72 channels ready to be beamed from the height of 36,000 miles (i.e. from its geo-stationary orbit location). The entire program preparation constituted three stages. When fully operational, this satellite would offer connectivity to all levels and types of educational organisations. The second stage of the launch will cover deployment of hardware and the third or the final stage shall be reached when content-transmission starts. In fact, we are already in the game of providing education through our hub at IGNOU. The proposed satellite is going to give us far greater reach and connectivity than hitherto possible. It is expected that this satellite would offer instructional facilities in the multi-media mode and video on demand service. We must not forget that numerous other agencies too are already providing similar services in India. They may not have educational channels like the DD at their command, but they are preparing course content in various formats and have a captive clientele too.

To cite ISRO Chairman, "Edusat is mainly intended to meet the demand for an interactive satellite-based distance education system through creating virtual classrooms at remote places in the country. It will provide connectivity to school, college and higher levels of education and also to support non-formal education including developmental communication. It is specially configured for audio-visual medium, employing digital interactive classroom and multi-

media, multi-centric system. Edusat will be ready for use in about two months (i.e. before Dec. 2004)".

He further explained, "Indian space program has been tuned to meet the national requirements in a self-reliant manner." This statement has significance for us. This means we can place other satellites in the space if this one fails to meet all our requirements. The scope of the Edusat program will be fully operational in three phases.

There are several agencies both at the centre and the state levels that are already generating content for transmission. For instance, the CEC, IGNOU, NCERT, NCTE etc. have for long been generating content ready for transmission. In fact, four channels are already beaming educational programs for their respective audiences through the national network. The educational hub at the IGNOU campus was beaming NCERT programs for teachers and students, SITE programs for primary schools and NIOS programs for secondary levels. The three existing channels that are directed to address higher education clientele are called Gyan Darshan, Eklavya and Vyas. Thus far, they have a captive audience. While the first channel telecasts 'enrichment' programs, the second channel addresses engineering requirements and the third channel caters to the needs of higher education sector. But these channels currently offer their services only to those who have access through a specially designed medium or through cables. Despite best efforts, these channels have failed to generate much interest outside a limited geographical area and a highly select number of viewers. The major

difference between the existing and proposed scenario is that under the proposed scheme programs could be accessed anywhere and everywhere provided one had a DTH antenna, electricity and an ordinary Television set or even PC. For the first time ever, the nation is going to be blessed with numerous educational channels that will meet all kinds of requirements namely regional, linguistic and informational without any intermediary intervention.

It is quite obvious, that for the first time content-generation has to be gargantuan in proportion. Not only the existing content-generators both public and private have to redouble their efforts to meet national requirements, but also the variety in terms of languages, levels, and types is expected to be enormous. The challenges posed by the Edusat launch need to be addressed on top priority basis.

A given type of technology best suited for India has been selected. The principal objective is to reach out to people both nationally and regionally almost simultaneously. Therefore, 2000 kg class satellite was selected, which could beam nationally as well as regionally. Since the idea was to impart instruction through this satellite, linking facilities had also to be kept in mind. The infrastructure for teaching end had to be created and *put in place*. *The reason why DTH was chosen is because it was thought that an alternative to it was going to be both difficult and expensive. Considering future requirements, expansion of facilities and the cost of maintenance etc. besides simple features for application and speed, KU band was found to be the most suitable. Firstly, it was an international*

band and secondly, its vendors were easily available. This band could provide national coverage. It was a kind of extension of the existing facilities.

The basic elements of the satellite constitute a centralised hub, various sub hubs and cost wise having a receiving terminal (ROT) i.e. a passive classroom, costing a mere Rs. 20,000 only. The setting up of an interactive terminal (SIT) would cost somewhere around Rs. 1.1 lakh only.

In the present case while the number of hubs were limited, the ROTs could be as numerous as one desires. This means that signals with the help of DTH facility could be received anywhere across the country, irrespective of the terrain or the type of receiver one had either an ordinary PC or a television. The technology will suit classrooms of any size with any number of students. In fact, for a country like India the cost of a technology matters the most. The selected technology is most suited from this point of view as well.

One has to be introduced to two-way communication of interactive traffic, which is to be offered and explained as to how live programmes would be transmitted and interactivity is likely to take place. This is one stage when any place could be converted into a virtual classroom. This technology offers the facility of both online and offline accessing.

Initially the network capacity will have a thousand terminals but later on when the Edusat is fully operational the number could be expanded to 5000 terminals.

The Times of India (21.10.2004) editorially commented, “A focused

campaign to appraise educational institutes of the benefits of using EDUSAT must be initiated. The potential to network the leading hubs of technical education in the country must also be actively utilised. Further, with the satellite, literacy level could well take a quantum leap forward. The arithmetic is easy. In the fully operational phase, the EDUSAT network is expected to support up to 1.5 lakh reception terminals. With 50 students per terminal, that works out to a figure of 7.5 million. If five such satellites can be set up, then a staggering 37.5 million children in remote areas could benefit at a fraction of the cost it takes the government to set up primary schools. Obviously, there will be several hurdles in the implementation process. But here at last is an opportunity provided by technology for a complete paradigm shift in our approach to education for all is no longer a pie in the sky. The answer is actually up there.”

The planning has to be done at the grassroot level. We have not only to provide connectivity but also to see that the process remains operative all the while. I think this is where we have to avoid taking risk. We cannot afford to overlook the NGOs, village elders, tribal chiefs etc. In case, this is feasible one should involve social workers too, but care should be taken to keep politicians away. Once the plan starts succeeding the politicians will certainly like to join the bandwagon. Care must also be taken that money required for the purpose is either minimal or is routed through responsible hands who can be held accountable.

We have so far never used high technology for rural primary schools. But

the stage has been reached when this process must be adopted. This technology can be used for offering the most interesting and advanced course content for the rural children. Also, it is not a very expensive process. It costs a bit in the initial stages but later the maintenance cost alone has to be taken care of.

The third stage is to select target groups for specialised community based learning. For instance, universities and colleges have necessarily to be selected for offering content learning. Here one visualises the possibility of organising virtual classroom conditions for two way connectivity. At a given hour an entire state or the country as a whole can be covered. Of course, most of the places will have single mode connectivity only i.e. they will merely receive a programme and for necessary guidance and question answer sessions to be offered they will have to wait for a while. Apart from the institutional arrangement of the type with which we are very familiar, we have to go out and interact and offer services that are beyond the ordinary. For instance, we can have programs for the working children that vary in levels and content in different rural centers. For arranging a programme of this nature careful planning is imperative both for selecting content and organising target audience as and when the same can be assembled in groups. It is not only the content but also the ambience for learning that is necessary. This is the most difficult part of the program. Lot of initial research into the psychology of these groups is imperative. The planning at this stage has to be delayed if it is not possible to organise classes for them or before any meaningful program is

feasible to be chalked out. But we must also remember that this is the largest single group that needs essential educational service. This is one group, which has not been properly addressed thus far, and, therefore, it has remained outside both the formal and the non-formal education orbit.

The reason why I am laying more emphasis on this aspect of planning is the common desire to overlook the inconvenient parts of any process. We must resist the temptation to neglect important sectors of a plan. This planning has to be bottom up and not vice versa, which is the usual mode. I believe, that for a plan to succeed the involvement of people on a large scale is always helpful. People refuse to involve themselves in any scheme if they find that it has no meaning to them. A meaningful scheme will automatically elicit a level of public involvement that will ensure a long and enduring relationship. By implication, it is bound to be an insurance against possible difficulties and glitches. Thus far, our planning has been top down. For once let us reverse the process. This would also be a measure of our testing whether or not we can become good salesmen of ideas and schemes. Only a few decades back agriculture universities brought about a change in the age old agricultural practices by involving farmers who were not even literates. If they sold better future the present technology is selling both – the present as well as the future. Education empowers. It enriches. On top of it all, it enables one to be creative. All one needs is a slight nudging and a push. And the path shall have been traversed.

# Examination Reform Initiatives in India

MAMTA AGRAWAL\*

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## **Abstract**

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*This paper brings out the major examination reform initiatives in India with a historical perspective. It also presents the salient features of the reforms and their implications in the classroom.*

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Key words: evaluation, examination, continuous and comprehensive evaluation, grading

Examinations, in India, are an integral part of the educational lives of both students and teachers. They influence what the teachers teach and what the students learn. Therefore, examinations play a major role in setting the standards of teaching and learning in schools. Right from the beginning of schooling all eyes are focused towards the public examination held at the end of Class X. This is the first high stake examination which dictates the teacher learning process at lower levels of schooling. It is therefore vital that the examination system should be such that it can help in enhancing the level of student achievement and bring about qualitative improvement in education.

This paper discusses the initiatives that have been taken to reform the examinations in India.

## **Historical Perspective**

Examination in one form or the other has existed since time immemorial. The Examination Reform Initiatives in India can be traced back to the Gurukul system of education where the examinations were predominantly oral. The guru would not take up the next piece of learning unless he made it sure that the students had learnt the earlier one. Moreover, the scope of the examinations (pareeksha) was quite comprehensive which included the all round development of students' personality because the students remained under the constant watch of the Guru. The written examinations were first started in China in 606 AD with the establishment of Imperial Examination System for the selection of officials. Later on it was only in the sixteenth century that Jesuits introduced a system of

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competitive examinations into their schools and colleges across Europe. This subsequently led to the widespread use of written examinations in European universities alongside oral examinations as a way of raising the standards of education provided. Over the time the *abitur* examination emerged in Germany, the *baccalaureate* examination in France and the *matriculation* examination in England. These examinations provided entry to the universities which were being established during the nineteenth century and selected able young men into different professions on the grounds of ability rather than family connection and wealth.

In India the first matriculation examination was held in 1857 as an admission test for the entrance to the universities of Calcutta, Madras and Bombay. In order to meet the requirement of the matriculation examination, English began to be taught at Middle and Secondary levels. Matriculation certificate was considered important for not only admission to higher education but also for obtaining a job.

The Calcutta University Commission (1917-1919) popularly known as Sadler Commission is an important landmark in the history of examinations in India. It was after its recommendations, that secondary education was bifurcated from the University education and the Boards of High School and Intermediate Education were set up. These Boards conducted two examinations – Matriculation and Intermediate examinations and the admission to the University was now made on the basis of the intermediate examination results.

Gradually, these examinations affected the whole teaching and learning process at lower levels. These examinations initiated an overemphasis on evaluation of academic subjects and the non-scholastic aspects of pupil growth which were given importance in the traditional Indian system came to be neglected. The ills of the examinations, that are talked about in present days, seeped gradually into the system.

### **Problems with Examinations**

The first and the foremost problem with the examination system is that it lays too much emphasis on memorisation. The questions asked in the examinations mostly require the recall of information. The students, instead of understanding a content and applying the knowledge for a particular purpose just cram the content and reproduce it in the examination. Thus, higher mental abilities are either not tested or are tested in a very small percentage. If higher order mental operations and writing skills do not form part of examinations they are not likely to receive the attention they should get in schools.

Second shortcoming of the examination system is that because of the prevalence of essay type questions in the paper and also due to a non scientific system of options, it leads to limited sampling of the course content and in turn prompts the students to do selective study. Thus the examination does not remain a valid measure of student achievement. Moreover, the selective study on the part of the students makes the examinations a matter of chance for them.

Another shortcoming that the supply type questions lead to is subjectivity in marking. There is a lot of inter-examiner and intra-examiner variability in marking and as a result of that the reliability of the examination suffers.

The present examination system does not provide for assessment of both cognitive and non-cognitive learning outcomes. It lays emphasis only on the growth and development of scholastic aspects while non-scholastic aspects which are no less important than the former are almost ignored. Moreover, they take recourse to only one technique of assessment which is paper and pencil test. It leaves no room for the application of multiple technique of assessment with the result many abilities remain unassessed. Due to the importance given to the results of the examinations in the society, they create a psychological fear and tension in the mind of the students which result in various kinds of malpractices. The students use all kinds of tactics to pass the examinations which are otherwise going to brand them as failures forever.

A common practice in these examinations is to use the raw scores for classifying the students. Sometimes even a difference of one mark is enough to fail a student or categorise him third class or second class. Moreover, the marks of one subject are added to the marks of other subjects on the assumption that all subjects are same and similar scores in two different subjects mean similar level of achievement in both the subjects. For example 60 marks in English and 60 marks in Maths are treated as equal which is not technically true. Examinations are invariably employed

for assessing whatever has been learnt by the students in the whole session in just three hours. This is not enough to sample the wide area of content abilities and skills that the students acquire. Thus, the validity of these examinations is questionable. This practice of three hour exam at the end of the session not only puts an overload on the student in terms of the content to be learnt, but also shows that no importance is given to the work done throughout the year in terms of projects, assignments, tests, class work etc.

Most of the boards do not give a chance to the students to get their answer scripts reevaluated in case: the students have doubts about the veracity of their scores. This is a reflection on the transparency of evaluation carried out by the boards.

### **The Changing Scenario**

After independence various commissions and committees were set up to look into the problems of education in the country. They also reflected on the existing examination pattern and recommended various steps to improve upon them. The first among such commissions was the University Education Commission known as Radhakrishnan Commission (1948-49). It observed that if it was to suggest one single reform in Indian education it should be that of the examinations. It suggested the introduction of valid, reliable, adequately objective examinations in the education system of India at the earliest.

It was the Secondary Education Commission (1952-53) which paved the way for examination reform at school level. It very strongly recommended that

the element of subjectivity be reduced in examinations and that due credit be given to the internal tests and school records of pupils. This commission, for the first time in India, introduced the word 'evaluation' along with examinations.

The Education Commission (1964-66) took up the concept of evaluation and furthered it by saying that evaluation is a continuous process and forms an integral part of the total education system. The commission reiterated the emphasis on internal assessment and emphasised the use of not only written examinations but other techniques too for the evaluation of other aspects of students' growth. That the purpose of evaluation is improvement of learning was strongly advocated by the commission.

The emphasis on internal assessment by these commissions became the basis of Continuous and Comprehensive Evaluation (CCE) which was recommended by the National Policy on Education (NPE 1986). The NPE devoted an exclusive section on examination reform and made elaborate recommendations for it including the elimination of the element of chance and subjectivity, use of CCE incorporating both scholastic and non-scholastic aspects of education and spread over the total span of instructional time, use of grades in place of marks, introduction of semester system from secondary stage in a phased manner etc.

### **Initiatives in Examination Reforms**

The initiatives in examination reforms emanated from the problems and shortcomings that had been felt in the

examination system prevalent in India. In school system the initiatives started right after the Secondary Education Commission (1952-53) and a fillip to the reforms was given by the subsequent commissions and the National Policy on Education. Below are given the initiatives taken to reform the examination system in India:

#### ***Establishment of the Central Examination Unit***

Perhaps the greatest initiative to reform examinations in the country was the establishment of the Central Examination Unit.

As a consequence of the Secondary Education Commission's recommendations about examinations a 'Seminar on Examination Reforms' was organised at Bhopal in 1956 to work out the strategies for bringing about reforms in the system. One of the outcomes of this seminar was the establishment of the Central Examination Unit (CEU) in 1958, for working out in more specific terms the nature of examination reforms. With the establishment of CEU, the examination reform took the form of a national movement. In 1961 the CEU became a part of the National Council of Educational Research and Training (NCERT).

The Unit initiated a multipronged programme for the popularisation of the new concept and techniques of evaluation the emphasis being on promoting the concept of evaluation as a continuous process and an integral part of the total education system. The Unit ushered in a number of reforms and worked with several State Boards of Education for their implementation. After

merging with the NCERT, the Unit, over the years, took the shape of a full-fledged Department called the Department of Educational Measurement and Evaluation which is still working on a number of reforms in examinations.

### ***Reducing the Subjectivity and Chance Element in Examinations***

Almost all the Commissions starting from Secondary Education Commission (1952-53) till the National Policy on Education (NPE 1986) and its Programme of Action (POA, 1992) have expressed concern about the subjectivity and elements of chance in the examination system. The root cause of this is the prevalence of essay type questions and the number of options provided in the question paper.

The most important reform that has taken place in the examination system is the introduction of different forms of questions in the question paper as a measure to make it more valid and reliable. The number of essay type questions has been reduced in order to minimise the element of subjectivity. With the introduction of short answer and very short answer questions along with essay type questions the nature of the question paper has changed. The concept of preparing balanced question paper is also associated with this.

Closely related to this reform is another measure which focussed on the use of marking scheme in evaluation of answer scripts. The preparation of marking scheme is in fact a part of preparing the balanced question paper. The use of marking scheme is supposed to serve two distinct purposes. One is to improve the questions in the question

paper while the question paper is in the process of being prepared. The other is to guide the evaluators for fair marking of scripts and reduce subjectivity to some extent. Both the above measures have been assimilated in the system and all the Boards in the country have adopted them as a result of intensive training of paper setters across the Boards in the country.

### ***Centralised System of Evaluation of Answer Scripts***

Apart from the above, the Boards have adopted the centralised system of evaluating answer scripts with a view to standardising the marking scheme. This system helps in reducing the inter-examiner and intra-examiner variability as the head examiner keeps a tab on the evaluation of scripts through a sample checking of the checked scripts. The problems of examiners who tend to be either too lenient or too hard in their marking are sorted out on the spot.

In the centralised system, it is also possible to mark the scripts question-wise. Each examiner is allotted a particular question or number of questions to mark. In such a system each script is marked by 4-5 examiners depending on the number of questions allotted to each examiner. Such a measure also helps in reducing subjectivity in marking and making the examination results more reliable and fair.

### ***Continuous and Comprehensive Evaluation (CCE)***

Though the term CCE was introduced by the NPE, 1986, the concept was not new.

It had its basis in the internal assessment which was initially recommended by the Secondary Education commission (1952-53) and reiterated by the Education Commission (1964-66). CCE encompasses the evaluation of both the scholastic and co-scholastic aspects of pupil growth and is carried out on continuous basis spreading over the whole academic session. It not only counteracts the over emphasis on the development of intellectual abilities but also helps in removing the tension and fear from the minds of the students which they otherwise feel if the examinations are conducted on annual basis. Not only this, it also helps in reducing the use of unfair means by the students in examinations. Perhaps the greatest advantage of this reform is that it provides for a more valid assessment of students as compared to one shot examination at the end of the session. Through CCE, the teacher knows the progress the students are making and evaluates the process and the product of learning.

CCE is an examination reform initiative which has the potential of removing almost all the ills of examinations improving learning through continuous feedback and bring in qualitative improvement in education.

NCERT developed schemes of continuous and comprehensive evaluation for different stages of school education. Many schools in the country like the Kendriya Vidyalayas, Navodaya Vidyalayas and a number of public schools use CCE for evaluating their students. Eleven State Boards of Education have also developed their

schemes of CCE and are trying to implement them at various school stages. However, the CCE has not yet been institutionalised due to certain reasons, the attitudinal problems of teachers being the most prominent of them.

### ***Grading***

A common practice in examination is to use raw scores for classifying the students. These raw scores suffer from a number of errors which may be due to imperfection of tools, inter and intra-examiner variability; sampling of course contents and of objectives within the content; testing situations etc. Studies have shown that the magnitude of these kinds of errors varies from seven to fifteen percent. In view of such wide variation, assessment of student achievement in terms of single number score is totally unjustifiable. Another shortcoming of marking system is that sometimes even a difference of one mark is enough to fail a student or categorise him third class or second class. Moreover, the marks of one subject are added to the marks of other subjects on the assumption that all subjects are same and similar scores in two different subjects means similar achievement in both the subjects. For example, 60 marks in Hindi and 60 marks in Mathematics are treated at par which is not technically true.

In such a situation, the system of grading has been recommended by various Commissions and reiterated by the NPE, 1986 and the National Curriculum Framework for School Education, 2000. Grading provides for relative position of a student in his/her group. This gives a realistic assessment

of the learner's capabilities as it puts him/her in an ability band representing a range of marks. The issue with the grading is that in spite of it being considered as a better option than marking by the examining agencies, they are not ready to implement it. However, the picture is not so demoralising. NCERT has made a number of efforts to popularise grading. Apart from bringing out two documents on grading, namely 'Grading in School' and 'Use of Grades in Admissions', it has conducted a number of Regional Seminars on Grading to make the stakeholders aware of the concept. As a result of this awareness generation programme, many elite schools in the country are using grades: in primary classes to report the students performance in both scholastic and co-scholastic areas. Two national boards of education i.e. Central Board of Secondary Education and the Indian Council of Secondary Education have been using grades along with marks for a long time. Recently, Kerala has taken the initiative of using grading at all stages of schooling including their class X Public Examination starting from the year 2005.

### ***De-emphasising External Examinations***

An over-emphasis on external examinations was the concern first voiced by the Education Commission (1964-66). It was because all the maladies of examination spring up from the over emphasis on external examinations. The class X public examination is considered all important by the society in the life of a child. As a

result even small children are prepared along the lines of this examination. Whatever is tested in this examination, is taught in schools. Teachers teach for preparing for examinations and the students learn for examinations only.

That external examinations be de-emphasised is the recommendation made by the Education Commission and the NPE 1986. All the curriculum frameworks for school education prepared by the NCERT in 1976, 1988 and 2000 advocate only one public examination at the end of schooling. Somehow, this initiative has not been accepted by the system and instead of reducing the number and emphasis of external examinations, many states are introducing more external examinations at different levels of schooling. Recently in one of the states, the court had to intervene to stop public examination at primary level.

### ***Transparency***

Yet another initiative that has been taken to reform the examinations in India is to make the whole process of examination transparent, so that the students have no doubts about their performance and its evaluation. Many elite schools in the country have started showing the answer scripts of all the examinations to the students. If there are any discrepancies in evaluation, they are sorted out on the spot.

At primary level many schools keep the portfolios of students. At the end of the session, these are returned to the students so that the parents can judge the performance of their children. At the Board level, if the students are not

satisfied with their evaluation, retotalling of marks is permitted. Some progressive Boards have started showing the answer scripts to students if they apply for it. Some Boards have even introduced the practice of re-checking the scripts on request. Thus, the awareness to make examinations more humane and learner friendly is gradually coming in the system.

### **Use of Computers in Examinations**

Computers are being used for the last two decades in declaration of Board results. As a result, the process has become more efficient and quick. The Boards have started using computers not only for declaring results but also in other aspects of managing the examinations like keeping the records of candidates, issuing the roll numbers etc.

Another use of computers in examinations is a new practice of providing the facility to the student to take examinations when he/she feels ready for it. This is 'on demand examination' wherein the question paper is generated on the computer from a question bank already fed in. The student then can write the answers and handover his/her script to the incharge of the testing centre. The National Institute of Open Schooling in India has started the on demand examination at some of its

centres. Another new concept of examination through computers is the 'paperless examination'. In this case, the testing is done online. The candidate answers the questions, which are all objective type, on the computer and gets his score and grade immediately. Such tests are being used for selection purposes or to test the students' proficiency in different subject areas by foreign testing services for admissions to universities etc. In our country, this type of testing is yet to come as it requires a large amount of preparation not only in terms of a question bank in each subject area but also physical infrastructure to conduct such an examination.

### **Conclusion**

All the above initiatives of reforming examinations cannot be instituted in the system unless the stakeholders are aware of them and convinced of their usefulness and practicability. The stakeholders include State Boards of Education and schools who examine and evaluate the students and also the state agencies like SCERTs and Directorate of Education who prepare guidelines for schools. The officials of these agencies and teachers need to be thoroughly trained in carrying out the examination reform measures in order to bring about a change in the system.

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# Reorienting School Children for Participation in the Natural Resource Management

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## Abstract

*Water, an indispensable natural resource, is to be judiciously used by every individual irrespective of age. Hence, a topic 'Water' has been introduced in the Science subject of 8<sup>th</sup> to 10<sup>th</sup> standards with the objectives of involving school children in gathering 1) knowledge, 2) understanding, 3) applying for the daily life situation, 4) participating in water management and 5) practicing value based approaches. In the present investigation, the performance in evaluation test for the lesson 'Water' is compared to explore the extent of achieving the objectives between the (8<sup>th</sup> to 10<sup>th</sup> standards) students from two different cities of Tamil Nadu, namely Madras facing the unpleasant condition of water scarcity and Coimbatore being free from water crisis. The results delineate that the knowledge and understanding levels about the water and its crisis are similarly above the expected status in the children of both the places, but the application of the knowledge in the daily life situation and practice of saving water is lesser in Coimbatore pupils than in Madras students. Further, the children of the cities lack value based approaches of individual participation in the water management which requires specific value dependent behaviours such as tolerance, sacrifice and preparedness for sharing the available water with neighbours and saving water for others' use. Therefore, there is a need of revising up to date environment linked educational approach to facilitate the children to apply the knowledge in daily life and practice resource conservation. This can be achieved by facilitating the pupils to acquire knowledge for taking part and practice the resource conservation for acquiring knowledge.*

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Key words: natural resource management

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Nowadays, an advancement in the scientific and technological information has been achieved and its relevance has imposed compulsorily on the tender hearted, to best adjust to the necessity of changing global scenario, to become scientifically literate, to develop scientific attitude, to observe the changing prevailing condition of environment to find and solve the emerging difficulty by adopting scientific strategies. Consequently, the contemporary classroom transaction is to cater to the need of modern-day children by providing the curiosity and diverse abilities, experiences and social attitude in sharing their ideas and in collaboration inquiry (Hofstein and Luneta, 2003).

The Goal of Environmental Actions is to improve all ecological association including the inter-relationship of humanity with nature and people with each other. Furthermore, the rationale of Environmental Education is to create world population to be aware of, be concerned about the environment, to acquire skills, attitude, motivation and to participate individually and collectively towards finding and solving the problems and preventing a new one.

Water, a natural resource, is unique when correlated to other natural resources like metals, fuels, etc. It is because, it is an inexhaustible renewable resource and useful economically as well as ecologically. As a result, its management is the need of the hour in a developing country like India and primarily is to be taken care of by each individual irrespective of age and collectively by the society. Considering

this aspect, a chapter, 'WATER' has been included in the science subjects of 8<sup>th</sup> to 10<sup>th</sup> standards by all the states of South India. This chapter has been excellently integrated with all the essential scientific content suitable to each standard to facilitate the young minds to learn the scientific knowledge, to understand the concepts very well.

In view of the underlying principal of Environmental Education, the present study has been carried out to predict to what extent the objectives of Environmental Education have been achieved at school level. Particularly, the children of 8<sup>th</sup> to 10<sup>th</sup> standards from the schools of two cities (Coimbatore and Madras) of Tamil Nadu were chosen for evaluating the status of their knowledge, understanding, observation skill, practice and participation in the water preservation with environmental ethics and value based approaches.

The objectives of the present investigation are to evaluate how best the school children understand the following aspects:

- The knowledge level about ecological and economical uses of water.

- Application of such knowledge in daily life situation.

- Ability to monitor the water related intricacy and its causes,

- Involvement in practice and participation in preventing water loss and saving water by judicious use.

- Realising the need of saving water not only for extended use but also for others' use thereby exhibiting value based approach.

Comparison of performance of school children by evaluation test for assessing change in attitude.

The impact of daily real life situation on ethics and values of Environmental Education at school level.

### The Study

*Samples:* The samples, children of 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> standards were selected from the schools of two major cities (Coimbatore and Madras) of Tamil Nadu. In the former city the water crisis is almost nil throughout the year, while in the latter city water scarcity is a daily phenomenon. The two groups of students were chosen to assess the extent to which the objectives of Environmental Education were attained through classroom transaction or the real life situation influenced the motive of Environmental Education.

*Tools:* A common evaluation test was conducted for the chapter, 'WATER' with preparation of a questionnaire. Five sets of questions, each set with five questions were framed for assessing five criteria such as 1) knowledge 2) understanding, 3) observation skill, 4) practice and participation in water saving and 5) values of water conservation. The questions are of 1) yes or no type and 2) multiple-choice type and suitable to 8<sup>th</sup> to 10<sup>th</sup> standard students of English medium (Appendix 1). The questions were administered and the answer sheets were collected with the help of class teachers. The test marks of two groups were analysed with the use of PC and SPSS software for various statistical analyses of mean, standard deviation and 't' test.

*Validity:* To eliminate the influence of external variables the time given for answering (1 hour) was maintained constant throughout the study. A jury ascertained that the test administered was relatively comparable in the degree of difficulty and suitable to the children of all the three standards of both the places and related to the chapter, 'Water'.

### Results and Discussion

The Table 1 shows the mean marks scored by the 8<sup>th</sup> to 10<sup>th</sup> standard school students of Coimbatore and Madras cities in the five sets of questions for five aspects such as 1) knowledge 2) understanding, 3) observation skill, 4) practice and participation in water saving and 5) values of water conservation. Significantly, the marks scored by the Madras students are higher than Coimbatore school students. Whereas the knowledge and understanding levels are more or less similar in both the children, the students from Madras have better skill of detecting the risk and practicing for meticulous use of water than the students of Coimbatore region. Since they experience such situations in their daily life and also share the experience with members of their family, neighbourhood and society, the real life situations implore them to get involved in such activities in their place where water scarcity is a routine incidence.

Most importantly, the results envisage that teaching strategies mainly focus on knowledge enrichment rather than imparting observation skill, practice of scientific knowledge in daily life situation, participation in finding and

TABLE 1  
**Showing the Marks Scored by the Classes 8, 9, and 10 School  
 Students from Coimbatore and Madras Cities**

<i>The Classes and the respective place of the school.</i>	<i>Response of the Classes 8, 9, 10 students for the evaluation test. (% of Marks)</i>				
	<i>Knowledge Level</i>	<i>Under-standing</i>	<i>Observation Skill</i>	<i>Practice</i>	<i>Value oriented attitude</i>
8 <sup>th</sup> Coimbatore Class	51-73 (61.2±7.4)	55-70 (63.5±5.6)	21-45 (27.5±8.2)	23-46 (32.2±8)	30-41 (35.8±3.3)
Madras	59-81 (74.3±7.7)	61-84 (71.3±7.9)	57-86 (75.1±40)*	60-82 (75.2±7)*	35-41 (37.4±2.1)
9 <sup>th</sup> Coimbatore Class	62-73 (65.9±3.9)	55-67 (60.1±4)	30-45 (36.5±4.7)	32-44 (35.9±4)	20-52 (33.6±9.2)
Madras	84-89 (86.1±2)	48-74 (65.4±9)	51-78 (64±9)*	73-90 (81.7±6)*	40-57 (46.8±5.4)
10 <sup>th</sup> Coimbatore Class	58-75 (65.7±5.6)	58-71 (64.1±4.3)	33-52 (43.7±7.6)	29-51 (41.8±7.2)	34-45 (38.7±4.3)
Madras	83-96 (89.6±4.7)*	82-94 (88.1±4.6)*	62-84 (75.5±6)*	73-92 (82.1±6.5)*	41-56 (50.4±5.2)

*The Number of sample is 50; the range for the marks (%) and mean score (%) within the bracket are given; \* indicates the significance between the students of Coimbatore and Madras cities.*

managing water connected crisis with value based approach. As a consequence, there exists a gap between classroom transaction and daily life practice of perceiving the water associated critical situation and solving the problems by participation in the conservation approaches with value based attitude.

In a period of reform and exploration in Environmental Education, a renewed interest is essential to apply the children's learning for their involvement

in the practice and participation (Nolen, 2003) in finding solution for the threat of environment along with family members, neighbours, society and nation. When related to traditional teaching style, debates (Proulx, 2004) and learning with self-constructed teaching materials (Mc Manus et al. 2003) allowed students to increase their participation and develop improved comprehension of issues at hand. Dori et al. (2003) reported that teaching through case studies improved the knowledge, perception and

higher order thinking skills of the students. Thus, in the Environmental Education a multiple teaching strategy is to be adopted for attaining the objectives.

Nagvenkar (1991) has reported that the modern sophisticated technology including slide, film, TV, VCR, etc. gives scope for observation, experimentation and promotes the active participation of all the students in the teaching learning process. In Bloom's taxonomy (1956), it appears as a type of analysis in distinguishing cause and effect relationship among other sequential connection. The recent day requirement of the teacher is to recognise students' reasoning aptitude and help to develop advanced reasoning pattern extensively (Karplus, 2003). Walczyk and Ramsey (2003) concluded that the learner-centred approaches to Science instruction assumed that only when students were active participants, learning would be deep, enduring, enjoyable and transfer to context beyond the classroom.

Therefore, it is imperative that the students are to be oriented towards learning through classroom transactions

for scientific basis of environmental conservation, practice and participation in natural resource protection and also that they are to be reoriented towards practice and participation in possessing hands on experience of natural resource conservation outside the classroom for learning scientific knowledge and value based attitudes.

### **Conclusion**

The classroom transaction must help students to identify daily life situations and to get involved in the practice of seeking remedy for the daily life hazard with scientific approaches and ethics and values.

The gap between classroom teaching and coping with the practical difficulty of real life situation must be eliminated or minimized.

The classroom activities must influence the pupils in a significant way and diminish the negative impact of real life situation on the value-based activities of students.

Ultimately it is to be aimed and practiced for completely achieving the entire objectives of Environmental Education.

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## Appendix 1

### Evaluation test for the chapter 'Water'

Dear Students, Please tick the correct answers in the following questions.

- 1 Is water a natural resource? Yes or No.
- 2 Water is used in
  - a) Agriculture b) Industries c) House d) All
- 3 Water is cycled among
  - a) Atmosphere, hydrosphere and soil
  - b) Atmosphere, soil and organisms
  - c) Atmosphere, hydrosphere, soil and organisms
  - d) Atmosphere, soil, plants and animals.
- 4 The water good for drinking is
  - a) Filtered water
  - b) Colourless water
  - c) Distilled water
  - d) Boiled and filtered water
- 5 How much water a person has to drink normally in a day?
  - a) Less than 1 litre b) 1.00 to less than 2 litres c) 2.0 to 2.5 litres
  - d) Above 2.5 litres
- 6 What is the ratio of H and O found in the water?
  - a) 1:2 b) 1:1 c) 2:1 d) 1:3
- 7 The main source of water for our use is
  - a) River b) Ground water c) Rain d) Corporation Tank water
- 8 The reason for scarcity of drinking water in summer is
  - a) More consumption by people than availability
  - b) Failure of monsoon
  - c) Both
  - d) None
- 9 When drinking water is contaminated with sewage water, the major/important contaminant is
  - a) Microbes b) Chemicals c) Solid d) None
- 10 The commonly seen water leakage in your place is
  - a) Street water tap b) Over flow from water tanker/lorry
  - c) Over flow from house water tank d) None

- 11 From where is the drinking water supplied in Coimbatore/Madras?  
a) Siruvani dam b) Veeranam dam c) Coimbatore Corporation Tank  
d) Madras Corporation Tank.
- 12 When contaminated drinking water is taken in, the disease we suffer from is  
a) Malaria b) Diarrhea c) Dysentery d) b and c
- 13 Water is much wasted because of  
a) Leakage b) Industries  
c) Agriculture d) more use than required in each utility.
- 14 Why is water chlorinated for domestic use?  
a) To add chlorine taste b) To remove dust and colour  
c) To kill microbes d) None
- 15 Rain water should be collected from house roof for use, because  
a) It is available free b) It is not allowed to go waste along with  
sewage water c) All d) None
- 16 The drainage/sewage water is recycled for  
a) Other use b) To avoid wastage c) All d) None
- 17 Industries using water must treat its waste water before releasing it  
outside to avoid  
a) Pollution b) Health hazard c) All d) None
- 18 What is the result when water is used economically?  
a) Many can share water b) Water pollution is reduced  
c) Water is available for more days d) All
- 19 When water is available more, we can use it lavishly. Yes or No.
- 20 Do you feel happy/comfortable, when water is used more? Yes or No.
- 21 How could one share water from Municipal Corporation with others?  
a) If water is available more b) During rainy season  
c) When water is used economically d) All
- 22 People using water economically are  
a) Very few b) Majority c) All d) None
- 23 Those who use water economically are  
a) Your family members b) Your relatives c) Neighbour d) None
- 24 You have known water conservation from  
a) Class study b) T.V. c) News Papers d) Radio
- 25 Do you get angry with anyone, if any one advises to use water sparingly?  
Yes or No.

# Supporting Private Students at Universities : A Remedial Approach

## *An Empirical Study*

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ANITA JAGRATI\*\*

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### **Abstract**

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*In the present day of advancement, globalisation and liberalisation, great value is attached to higher education. Although, everyone desires to get enrolled as a regular student, yet due to various reasons, everyone's desire does not get fulfilled and these persons have to get enrolled as private students. A good number of private students face various problems from collecting the examination form to their proper filling up, in getting information on the relevant study material, its preparation, in getting admit cards, acquiring the skill and knowledge to attempt the various questions in the examination and, finally, in getting their result/mark sheet. As university and examination centre institutions receive a sizeable amount of money from private candidates, there is an earnest need to pay careful attention in this regard. The investigators of the present study got motivated on this current issue and conducted the present study empirically on the sample of private students and on a group of teachers. The findings of the study have been discussed thoroughly and on the suggestion it has been advocated to open/establish a cell/counter in every examination centre institution to help the private students. It is hoped by adopting these remedial measures, the various problems of the private students will diminish to some extent and their outcome will improve the quality of higher education, particularly, of privately appearing students in the State of Uttaranchal.*

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Key words: private students, examination

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Education heightens a person's awareness of oneself and one's relationship with the outside world of nature, and of human beings (De, 1999). It is, therefore, a crucial factor for survival and it leads to empowerment. Education has long been recognised as an important factor in the process of development (Shah, 1986). So, among the things of vital public concern 'Education' occupies the very centre. And, everyone is convinced that spread of education is a necessity both for modernisation and for sustaining the democratic policy in the society. While considering education system as a whole, we find it is the higher education that supplies the manpower to all the other sub systems, especially to the democracy and leadership and hence these are in a position to set the temper of all the system. In modern times, societies look up to higher education to create an intellectual climate to examine all policies, plans and achievements, and to enable discernment of the direction in which society is moving. Now, in the days of advancement, globalisation and liberalisation public attaches social value to higher education, however different for the classes and the masses. The weaker section of society look upon higher education as an important means of their vertical, social and economic mobility. Acquiring of higher education by a youth is regarded as the minimum level of education for one's marriage and even in any kind of higher education. No one, below a graduate is recognised as an educated one in the society. So, everyone wants to acquire higher education.

Though, the centres of higher education provide higher education on a

regular basis to everyone but owing to certain constraints such as lack of time, long distance of institution from their homes, pre engagements in household activities, financial crisis, regular service/job or business and due to other socio-cultural obstacles or other limitations many of the aspiring youth do not get suitable opportunity for getting regular-admission and are denied entry as regular students. And, alternatively, these youths have to get themselves enrolled as private candidates. This procedure is called the external appearance wherein a university permits a student to appear in the examination as a private candidate and if he passes, he is given the degree of that course. These persons do not get the education through face to face interaction with the teachers, they are deprived of classroom interaction/learning, and also, they are not allowed to consult the books (text or/and reference books) in the institution's library like that of bonafide students. But as they have to prepare for their examination so they are compelled to buy the guide books, guess papers, or selected question-answer series and feel assured to pass the examination by reading these materials only. Some candidates prepare their notes but their notes are never checked like that of a regular student. Thus, practically, a private student faces many problems.

The first author of this article has got an experience of more than 25 years of regular teaching and of evaluating the answerbooks of regular as well as private students. The second and third authors are engaged in research work and also in regular teaching since last few years. They come in contact with many regular

and private students. It has been noticed by the authors that as and when the university notification is published in the daily newspapers regarding the issue of examination forms for privately appearing candidates, the concerned students become worried. They come from even far away places to enquire about the distribution of the examination forms to their nearby examination centres (a college of higher education/university campus) but they often, do not get proper information and are compelled to visit again which cause them great difficulties and problems. But, nobody cares about these students. It is very surprising to note that though private students are more in number than regular students and their money share is of a sizeable amount in the form of examination fees to the university and in the form of centre charges to the examination centre institution, yet they face many problems from getting/filling of examination form till receiving their results/marksheets. The authors of this article have so many times observed their plight and the difficulties in getting their form, duly filling up of their forms, roaming in search of syllabus, names and codes of the papers, name of the books, and having poor knowledge and skill to attempt the questions in examination, and often, they are treated poorly in the examination centres. These type of bitter experiences motivated the present authors to go through their miserable situations in the form of research study. Hence, they felt an earnest need to design and conduct the present research-study through empirical evidences. They have tried to make an attempt to highlight the various

problems of privately appearing students in the examination of higher education as perceived by these students and as opined by the teachers. And, they have tried to suggest some remedial measures in this regard to overcome/dilute their problems.

### **Objectives of the Study**

- i) To identify the various problems faced by private students in the university examination as perceived by them.
- ii) To analyse the opinion of the teachers regarding the problems of private students.
- iii) To suggest appropriate solutions to the various problems in the light of the finding of the study.

### **Methodology**

Present investigation has been conducted by adopting the normative survey research method. The sample of the private students as well as of teachers was selected by random technique on the basis of their availability in the university campus on week days. As such, 105 private students and 8 teachers were available and agreed for conducting this research study. It was thought that private students of BA III can be more compatible in responding to the questionnaire on the basis of their past experiences of BA II and BA I examination.

So, the sample comprised of BA III students who appeared in BA III examination as private candidates in the examination at University campus, Badshahithaul (Tehri Garhwal) and eight teachers of arts faculty of the same campus.

### Tools

- i) A Questionnaire which contained the items as under was developed by the present investigators for collecting the information from the sampled private students.

Write out the types of various problems you face while–

- a) Collecting the syllabus and relevant text books.  
 b) Preparing for the studies.  
 c) Appearing in the examination.  
 d) Collecting the admit card.  
 e) Getting the result/marks sheet
- ii) An interview schedule was prepared for seeking the opinion of the teachers on related problems of private students as realised by them and what should be done in that respect.

### Results and Discussions

The data in the form of various information given by the subjects were sorted out in common. These were counted and converted into percentage form. Similarly, the opinion of the teachers was also analysed and converted into percentage form. By applying the percentage technique the data were analysed and findings were drawn as under:

On the basis of the above table, it can be observed in general that:

- a) About 60% of the private students face the problem of not getting proper information regarding the distribution of form, in knowing the names and codes of their subject papers, in depositing the duly filled

form in the office.

- b) Nearly 65% of the private students face problems in knowing the syllabus correctly and the related books and in collecting the books.  
 c) Upto 30% of the private students are only able to meet the subject teachers and upto 65% of these students face problems in preparing their notes of study and in updating their studies.  
 d) In the denial of face to face interaction with the subject teacher and classmates, more than 60% of the private students face problems in getting to know about the requisite type/forms of questions to be asked in the examination and in writing their appropriate answer.  
 e) Upto 30% of the students face problems in getting the admit card in original. If it is lost or not received in due time, they have to collect the duplicate copy of admit card and in this respect upto 70% of the private students face problem.  
 f) Nearly 40% of the private students face problems in knowing their result in time and in collecting their marksheets.

The main reason behind the above problems might be the lesser number of visit by the private students to nearby examination centre institution owing to various reasons, such as their engagements in service, business, agriculture or in social service and so they only come to the campus first for filling examination form and then only for appearing in the examination. This category of students do not bother for reading the text books or in preparing

**TABLE 1**  
**Description of Responses of the Subjects in Percentage form**  
**on their Problems as Perceived by them**

<i>Category of problems</i>	<i>Difficulty aspects</i>	<i>Difficulty percentage</i>
a. In getting the examination form	i. In getting the form	55% to 60%
	ii. In knowing the names and codes of subject paper	60% to 61%
	iii. In depositing the duly filled up form	58% to 60%
b. While collecting the syllabus and relevant text books	i. In knowing the syllabus correctly	63% to 66%
	ii. In knowing the related books	60% to 65%
	iii. In getting those books	60% to 70%
c. While preparing for their studies	i. In meeting the subject teacher	28% to 30%
	ii. In preparing the notes	50% to 55%
	iii. In updating their studies	60% to 65%
d. For appearing in the examination	i. Current knowledge of the forms/types of questions	70% to 75%
	ii. How to write the appropriate answer	60% to 74%
e. While collecting the admit cards	i. In collecting original admit card	25% to 30%
	ii. In collecting duplicate admit card	65% to 70%
f. while getting results/ marks-sheet	i. In knowing their result	30% to 34%
	ii. In getting their marksheet	30% to 40%

their notes and instead they simply depend on guess papers, selected question answer series with the intention to simply get a pass in the examination.

On analysing the above table, we can (in general) deduce that:

- i) More than 50% of the private candidates face problems while filling the examination form and afterwards.

- ii) Upto 40% of these students do not possess the necessary requisite knowledge and skills of responding to the questions asked in the examination paper.

- iii) More than 50% of these students cannot differentiate between objective type, short answer and essay type questions.

- iv) Upto 40% of these students write a few lines in objective type of answer

TABLE 2  
**Description of Opinion of the Teachers Regarding the Problem  
 Faced by Private students**

<i>Category of Problems</i>	<i>Response Percentage</i>
i) While filling the examination form	50% to 51%
ii) Do not possess the requisite knowledge and skill for responding to the questions in the examination	35% to 40%
iii) Cannot differentiate between the essay type, short answer type and objective type questions in the examination paper	45% to 50%
iv) They attempt to respond to the question as they like instead of the required answer form	30% to 40%
v) There is a need for appropriate counselling for private students in the campus	55% to 62%
vi) Due to non-availability of guidance to private students their performance suffers	85% to 88%
vii) They face problems in getting duplicate admit cards and marks sheet	50% to 55%

and 3-4 pages in case of short answer type of questions. That is to say that they do not understand the appropriate way of answering the various types of questions.

- v) More than 60% of the teachers realise that private students need the appropriate counselling in the campus relating to their various practical problems, so these students find themselves psychologically and socially in discomfort.
- vi) about 90% of the teachers find that due to non availability of guidance in any form to private students the performance of these students suffers in the examination. Their answers do not appear upto the mark as they simply prepare from guess papers or substandard books for their examination.

- vii) More than 50% of the teachers realise that private students face problems while getting the duplicate admit cards and in knowing their results and in collecting their marks sheet.

### **What should be done**

In this reference, the investigators made an effort to go through the other research studies. They found 'A report of the seminar on examination reforms at various levels' compiled by Dr. Bhagoliwal (1986) and 'Outdated Examination System — A study of opinion' by Dr. Budhori (1986) and 'Examinations' by Shridhar Patankar (1999) and 'Issues and Problems in Higher Education' by Dr. Gupta (2003). But in none of these studies, the problems of private students were even discussed. As such, the investigators

tried to discuss this matter with the teachers and principals and also thought on the problems with their own experiences. After discussions and deep thinking the following remedies are being suggested:

- i) *For the University:* The university authorities should act in this context, by directing the incharge of the examination centres (principal/suptd.) to open a special counter/cell for providing the necessary guidance to privately appearing students. In this cell/counter a copy of the syllabus for every class and subject code should be made available and at least someone should be there to help these students regarding their problems and queries on various aspects. This person (Teacher/senior clerk) available in the cell/counter be given some remuneration too. Yet, from time to time, the university authorities should survey and examine to resolve the problems of private students.
- ii) *For the teacher in the campus/institution:* The regular student goes through a three tier system whereas a private student goes through a two tier system as mentioned below:

Sometimes, we find that a privately appearing student scores better marks than a regular student and the credit goes to that examination centre too, so, at least one teacher should be directed to provide the needful guidance to private students. Since the private students give centre charges to the exam centre institution, it should be made obligatory for every private students' centre, to give some type of remuneration to that teacher to take interest in this job.

After going through the above discussion, the authors of this paper suggest that the private examination be changed to correspondence form of education. Under this change to correspondence education, every privately appearing student be registered and every student should get the necessary guidance regarding filling up of the examination form, relevant content material, home assignment (for exam. practice) etc. He should also be given tips on skills of attempting the objective/short answer type of questions in the examination. Through correspondence education the level of knowledge imparted is upgraded and the quality of students' performance in the examination improves.

Further, as there is no correspondence cell/dept/directorate

Regular student			Private student	
1	→ 2	→ 3	1	→ 2
Admission & filling up of the exam form	Interaction with teachers and classmates	Appear in the exam.	Filling up of the exam form	Appear in the exam

functioning in Garhwal or Kumaon University in the State of Uttaranchal, there is an urgent need for it. This will also generate money (in the form of registration fees, assignment evaluation fees, cost of content material, booklets, etc.) and it may provide some type of employment too. Thus, the shift from private appearance to correspondence education will be a boon to many of the universities. By enrolling themselves in the correspondence form of education, the privately appearing students will get rid of various sorts of problems. It will certainly strengthen their self confidence and more persons will be attracted towards higher education. It is interesting that individuals living in Uttaranchal prefer to obtain their degree from Garhwal or Kumaon University, because of easy access to these universities and due to local affinity, instead of getting a degree from IGNOU or any other university centres functioning in the state. So, the UGC and state government should come forward in this regard.

### Conclusions

In the light of the findings of the study and the above discussions it can be concluded that:

- a. the private students face many problems starting from obtaining the examination form, to filling up in preparing for studies, appearing in the examination till they get their marksheet/result.
- b. The teachers also realise that

private students face many problems in the existing examination system.

- c. The teachers suggest setting up of a cell/counter in the examination centre institution to provide necessary and relevant guidance to the private students particularly at the time of filling up the examination form or regarding information on the pattern of question paper.
- d. The university authorities should take initiative in this respect as a sizeable amount of the private students examination fees is deposited in the university account.
- e. In order to overcome the various problems of the private students, it would be desirable if the university converts the private examination system into a correspondence form of education.

It is hoped that the findings of this study will be useful not only to Kumaon/ Garhwal Universities but also to various other universities following the private examination system. It is also expected that in general the teachers and other concerned authorities in higher education examination centres will realise the difficulties faced by the private students and help them to a greater extent. The investigators hope, the present empirical study will certainly contribute something to uplift the status of the private examination system, particularly in higher education in Uttaranchal state.

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## Book Reviews

### ***Reservation and Private Sector : Quest for Equal Opportunity and Growth.***

Sukhadeo Thorat, Aryama, Prashant Negi (Eds.), Rawat Publications, 4858/24, Ansari Road, Daryaganj, New Delhi, 2005, Price Rs. 775/-, Pages 424.

Reservation, at all levels of education, has been a unique constitutional device to provide opportunities to the traditionally deprived communities, specially the Scheduled Castes, Scheduled Tribes, Other Backward Classes and Women and to integrate them with the 'mainstream society'. It is also equally involved in the case of public employment and political position. However, Indian society is characterised by hierarchical social order based on the principle of purity and pollution. Due to these characteristics Indians, those who are deprived in the name, caste and ritual status, have been suffering at the various stages of life. In that sense, reservation policies have been playing a major role for the upliftment of these sections of society.

Economic liberalisation and globalisation processes have made a shift of debate from the public sector to the private sector. It is because the policy of liberalisation and privatisation reduced the number of employment opportunities in the public sector, which in turn reduced the job opportunities for SCs, STs and OBCs in government administration and government owned enterprises (2005 : 287). According to the report of the working group on the empowering SCs, appointed by the

National Commission on Scheduled Castes and Scheduled Tribes, about 1,13,430 job opportunities were lost by the SCs in the central government during the period 1992-97, constituting a decline of 10.07 per cent (2005 : 287-88). This fact makes us think that the reservation policy should be extended to the private sector. The book under review, discusses on the various aspects of reservation policies in the educational institutions, whether public or private, employment opportunities in both the sectors and so on.

Divided into six parts including a chapter on 'Debate on Reservation in Private Sector' and three appendices, the book covers 43 chapters on various critical issues that appeared in the current debate on reservation. The papers open a larger debate on reservation : Are the concerns about discrimination related only to equity or they also involve economy and political costs? How sound are the arguments against anti-discriminatory policies for private sector? Does reservation adversely affect economic merit? Or it ensures equality of opportunity for the discriminated groups and also creates economic performance? In other words, are the principle of equity and canon of efficiency always at odds with each other? And, what are the possible remedies against market discrimination?

The book brings together different issues and views in one platform by the prominent academicians Thorat to Dipankar Gupta, opinions makers in the media right from Chandrabhan Prasad

to Swaminathan Ankksaria Aiyar, doyens of corporate world to politician Amit Mitra to T.S. Papola and so on. This book reflects contemporary thinking of Indian society on a vital and contentious issue of private sector reservation.

In the introductory chapter, 'Debate on Reservation in Private Sector' by Subhadeo Thorat, Aryama and Prashant Negi discusses the issues related to structured inequality, deprivation and discrimination in education, employment and political and civil spheres. However, the authors point out the reservation 'policy remained confined to a tiny government and public sector and vast private sector comprising agriculture, industry and service sector, in which more than 90 per cent of SCs/STs are employed, remained outside the purview of the reservation policy. While in other countries, such policy has been put into practice both for the public and the private sectors' (2005 : 1). The authors, therefore, advocate the implementation of reservation of policy in both the sectors. However, a number of states have passed specific acts regarding reservation in private sector. The first such initiative was the Madhya Pradesh government's decision in 2002 and thereafter by Maharashtra government for reservation in private sector employment. More importantly, the private sector reservation finds an approval in Common Minimum Programme (CMP) of the present United Progressive Alliance (UPA) government.

In contrary to that, Swaminathan Aiyar argues against introducing reservation in the private sector : "job reservation in government service and educational institutions are subject to

minimum cut-off marks. If a *dalit* candidate does not get the minimum marks needed to qualify for admission for the civil service or an engineering college, he will be rejected even if the reserved quota is unfilled." (p. 144). Sunil Kumar Munjal, the President of CII argues by supporting Swaminathan views : "we cannot be forced to take individuals who do not have the required skills. We cannot afford to compromise on efficiency. That would affect our competitiveness. We cannot compromise on merit corporate sector does not go by colour of skin, caste or the last name." (p. 145). Corporates, therefore, seem to be against reservation in private sector. But on the other hand, social scientists and academicians are in favour of affirmative action in private sector for the weaker sections because they suffer multiple discrimination.

The book provides a larger framework on reservation in various perspectives and aspects. The authors have discussed entire issues related to reservation on different aspects, such as, caste and market discrimination, reservation and equal opportunity perspective, reservation, merit and efficiency, globalisation, liberalisation and reservation, reservation and politics of caste, remedies against discrimination and so on. In the last chapter 'Some aspects of Reservation in Higher Education', Thomas E. Wisskopf has discussed the issue of positive discrimination policies in SC and ST enrolments in Higher education. Wisskopf argues that after independence from 1950 to the year 2000, the proportionate representation of Scheduled Caste (SC) and Scheduled

Tribe (ST) students in total higher educational enrolment has been slowly rising (p. 390). However, the enrolment of other privileged sections in higher educational institutions in India has been increasing rapidly. This fact seems to be supportive in reservation of weaker sections of the society in educational institutions. He also goes on to discuss about the issue of the 'creamy layer' and the group formation among the SCs and STs due to existing social background of these people.

In sum, we must say that the authors try to cover entire issue of reservation. This book will definitely be helpful to academics, government, NGOs as well as researchers and students.

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***Case Studies in Classrooms: An Insight into Issues and Concerns***

G. Balasubramanian, Published by Frank Brothers & Co. Ltd, New Delhi, 2004, Price Rs.250/-, Pages 135.

It is a well-known fact that the role a teacher plays in a classroom situation can make or mar the life of a child. It is for this reason that lot of emphasis has always been given on how the teachers handle certain situations in the classrooms. There have been instances when a small gesture by a teacher has brought hundred-degree turn in the life

of the child. So much so that a non-performer and a non-achiever once identified by the teacher and helped has become a world-class citizen.

This book under review brings several cases where the crucial role played by the teacher has helped the child. The book begins with a confession that, the author having worked as a teacher and educational administrator, a teacher trainer and a curriculum designer has learned from students in the classroom situation all along. He further stated that he tries to share his experiences from while he was visiting classrooms during his long association with schools and children. The first few chapters of the book have talked about the school, the classroom, the teacher, the parents and above all the learner. While talking about the schools, the author has given a brief account of earlier Indian schools and compared the same with the modern schools. Keeping in view the contrast of the past and the present, he has raised some issues, which need consideration by the authorities managing schools.

Some issues have also been raised in the following chapters on the teacher and the classroom. The issues concern the role of the teachers as counsellors, judgment made by teachers and the avenues provided by the teachers for providing creativity in the classroom. The author has very aptly pointed out that the reach of the present day teacher in the classroom has been reduced to a minimal due to over crowded classes, consumerist nature of the society, knowledge exposure, material concerns and conflicting value perspectives.

The role of the parents and the impact of their types. While placing the parent types in different categories, he has talked about over enthusiastic parents and their impact on the personality of the learners. Author feels that this category of parents induces a sense of nervousness, anxiety and stress in the minds of the learners.

The low profile parents jeopardise the interest of their wards, while the ignorant parents have no knowledge about what is happening to the learner. Guidelines to parents have been given in this chapter and the author has suggested that the parents should avoid judging their children, nagging them, discouraging them and creating an atmosphere of fear.

The book talks about the learner in detail and gives a brief description of the qualities of a learner. The qualities of the learner as given by Vivekachoodamani have also been written in this book. These qualities as stated in the book are: *Vivek* (the power of discrimination), *Vairagya* (the power of detachment), *Sama* (the quality of calmness), *Dama* (self-control), *Uparati* (self-withdrawal), *Titiksha* (capacity to endure) and *Shraddha* (power of concentration).

The best part of the book is the case studies. All the cases, it appears, have been drawn from real life experiences. The case of a rejected child Badri has been very beautifully brought out in a dialogue form. How a little concern and care of the teacher can makes so much difference in a student's life, who was a failure, has been written very well. Another incident of Arun and his lost

battle in life has been given as a good example. It talks about this boy *Arun* who is not sure of what he wants in life and ignores the advice given by his teachers. The teacher helps him when he is in distress and shows him the right path. There are a couple of cases discussed very well dealing with the problems of adolescents. These problems are of common nature and it is important for every teacher, specially those dealing with senior secondary students, to know how adolescents behave and how the teachers should help and guide them without being vindictive.

Yet another case that has been very beautifully narrated is that of boy named Anand. How Anand preferred to look after his old and aged parents to earn the joy and satisfaction of life even though it was at the cost of high paying job abroad. The last few pages of this book have some events to remember. Such incidents occur in every teacher's life and leave a mark on their psyche forever. There are several such incidents like, What would you do in Kargil, I want to see your books Rajesh, I want to know how they are, Who knows what is happening, Teaching mathematics is not all that easy, etc. which form interesting reading.

Towards the end, the book talks about adolescents and how essential it is for every teacher to understand them. The author has raised some important issues related to the adolescent period. He has pointed some behavioral patterns of adolescents like, refusal to except authorities, craving for self-identify, understanding sex, looking for fun, urge for building an image and a sense of self esteem.

This book has been written in lucid narrative in a language that could be understood by all and the incidents quoted in the book are supposedly real. The situations are commonly faced by the teachers and learners and has quotes drawn from *The Mother* and *Khalil Gibran*. The book could be of much use for

teachers and parents to understand children well.

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### **THE VILLAGE OF MY DREAMS**

“The village of my dreams is still in my mind. After all, every man lives in the world of his dreams. My ideal village will contain intelligent human beings. They will not live in dirt and darkness as animals. Men and women will be free and able to hold their own against anyone in the world. There will be neither plague, nor cholera, nor smallpox; no one will be idle, no one will wallow in luxury. Everyone will have to contribute his quota of manual labour.

“When our villages are fully developed, there will be no dearth in them of men with a high degree of skill and artistic talent. There will be village poets, village artists, village architects, linguists and research workers. In short, there will be nothing in life worth having which will not be had in the villages.

“Today, the villages are dung-heaps. Tomorrow, they will be like tiny gardens of Eden where dwell highly intelligent folk whom no one can deceive or exploit.

“The reconstruction of the villages along these lines should begin right now.”

*M. K. Gandhi*

### **MASS ILLITERACY**

Mass illiteracy is India's sin and shame and must be liquidated. Of course, the literacy campaign must not begin and end with a knowledge of the alphabet. It must go hand in hand with the spread of useful knowledge. The dry knowledge of the three R's is not even now, it can never be, a permanent part of the villagers' life. They must have knowledge given to them which they must use daily. It must not be thrust upon them. They should have the appetite for it. What they have today is something they neither want nor appreciate. Give the villagers village Arithmetic, village Geography, village History, and the literary knowledge that they must use daily, i.e., reading and writing letters, etc. They will treasure such knowledge and pass on to the other stage. They have no use for books, which give them nothing of daily use.

*Harjan: -22 June 1940*

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I, Puran Chand, hereby declare that the particulars given above are true to the best of my knowledge and belief.

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# CONSTITUTION OF INDIA

## Part IV A (Article 51 A)

### Fundamental Duties

Fundamental Duties – It shall be the duty of every citizen of India —

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- (k) who is a parent or guardian, to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.



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