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SCHOOLS

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AN EDUCATIONAL JOURNAL

This is a journal on education that is brought out annually. It is an anthology of writings by educators, teachers and thinkers exploring a new vision of education in its many dimensions—philosophy, psychology, classroom experience, curriculum, nature and environment and contemporary issues. It lays special emphasis on J Krishnamurti's principles of education. It will be of use to teachers, parents, educational administrators, teacher-educators and to any individual interested in education.

Please note: We are changing our publication schedule. Henceforth the journal will be brought out in January of each year. The Journal of the Krishnamurti Schools No.12 will be out in January 2008.

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An Excerpt from Krishnamurti

On Behaviour

One of the most difficult things in life is to find a way of behaviour that is not dictated by circumstances. Circumstances and people dictate, or force you to behave in a certain way. The way you conduct yourself, the way you eat, the way you talk, your moral, your ethical behaviour depend on where you find yourself and so your behaviour is constantly varying, constantly changing. This is so when you speak to your father, your mother or to your servant—your voice, your words, are quite different. The ways of behaviour are controlled by environmental influences, and by analysing behaviour you can almost predict what people will do or will not do.

Now, can one ask oneself if one can behave the same inwardly, whatever the circumstances? Can one's behaviour spring from within and not depend on what people think of you or how they look at you? But that is difficult because one does not know what one is within. Within, a constant change is going on also. You are not what you were yesterday. Now, can one find for oneself a way of behaviour which is not dictated by others or by society or by circumstances or by religious sanctions, a way of behaviour that does not depend on environment? I think one can find that out, if one knows what love is.

Do you know what love is? Do you know what it is to love people? To look after a tree, to brush a dog, comb it, feed it, means that you care for the tree, you feel great affection for the dog. I do not know whether you have noticed a tree in a street for which nobody cares; occasionally people look at it and pass it by. That tree is entirely different from a tree that is cared for in a garden, a tree you sit under, look at, on which you see the leaves, climb the branches. Such a tree grows with strength. When you look after a tree, when you give it water, manure; when you trim it, prune it, care for it, it has a different feeling altogether from the tree that grows by the roadside.

The feeling of care is the beginning of affection. You know, the more you look after things, the more sensitive you become. So there has to be affection, a sense of tenderness, kindness, generosity. If there is such affection, then behaviour is dictated by that affection and is not dependent on environment,

circumstances, or people. And to find that affection is one of the most difficult things—to be really affectionate whether people are kind to you or not kind to you, whether they talk to you roughly, or whether they are irritated with you. I think children have it. You all have it when you are young. You feel very friendly with one another, with people. You love to pat a dog. You look occasionally at things and you also smile easily. But as you grow older, all this disappears. And so to have affection right through life is one of the most difficult things and without it life becomes very empty. You may have children, you may have a nice house, a car and all the rest of it, but without affection life is like a flower that has no scent. And it is part of education, is it not, to come to this affection, from which there is great joy, from which alone love can come?

With most of us love is possessiveness. Where there is jealousy, envy, it breeds cruelty, it breeds hatred. Love can only exist and flower when there is no hate, no envy, no ambition. Without love, life is like the barren earth, arid, hard, brutal. But the moment there is affection it is like the earth which blossoms with water, with rain, with beauty. One has to learn all this when one is very young, not when one is old for then it is too late. Then you become prisoners of society, of environment, of husband, wife, office. Find out for yourself if you can behave with affection. Can you go to your class punctually because you feel you do not want to keep people waiting? Can you stop shouting while you are together because there are other people watching you, being with you?

When behaviour, politeness, consideration are superficial and without affection they have no meaning. But if there is affection, kindness, consideration, then, out of that, comes politeness, good manners, consideration for others, which means really that one is thinking less and less about oneself, and that is one of the most difficult things in life. When one is not concerned with oneself, then one is really a free human being. Then one can look at the skies, the mountains, the hills, the waters, the birds, the flowers, with a fresh mind, with a great sense of affection.

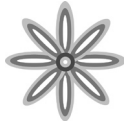
J. Krishnamurti

(*Krishnamurti on Education*, pp 63-65)

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Editorial

Escapes and Solutions



...seeing all these outward things without condemnation, without choice, you can ride on the tide of inner awareness. Then you will become aware of your own reactions...

By staying with what is, you can go beyond it.

J. Krishnamurti

*I*n the course of a talk to students in one of the schools founded by him, Krishnamurti said, 'A new world is necessary. A new culture is necessary. The old culture is dead, buried, burnt, exploded, vapourised. You have to create a new culture. A new culture cannot be built upon violence.'

The truth of what he said is laid out before us every morning in the newspapers with their bland recordings of the explosions, vapourisations and acts of despoliation of Nature taking place daily world-wide. Though war and humanly wrought destruction of Nature have been endemic in history, the modern age has seen more destruction through wars than in the entire previous period of human history.

Things fall apart, the centre cannot hold;

More anarchy is loosed upon the world,

The blood-dimmed tide is loosed and everywhere

The ceremony of innocence is drowned...

But human kind cannot bear very much reality and various escape routes and various solutions are on offer.

Krishnamurti was constantly concerned to make us aware of the insidiousness and unreality of these escape routes and the ultimate inadequacy

of the systemic solutions suggested. His teachings are a call to constantly consider and meditate on these matters.

Taking this to heart, aware of the blood-dimmed tide of Yeats' lines, and trying to ride on that other 'tide of awareness' in the Krishnamurti quotation at the beginning, the contributors of the articles in this issue reflect on the effects of these destructive forces and the more insidiously harmful effects of the knowledge and technological revolutions on young minds. They express a yearning for wider horizons, a greater plenitude of being, a reconnection of the lost bonds with Society and Nature. More than just yearning for a Brave New World, they acknowledge the responsibility of the adult generation for the present state of affairs, and also their own responsibility to protect their students from these influences.

First, the escapisms. Kartik Kalyanram's article on risk-taking by youth, describes how the IT explosion and the high levels of sophistication achieved by television, movies and other media, and the unprecedented availability of these multiple harmful choices, promote hedonism, narcissism, sexual promiscuity and drug-taking among young persons, especially urban youth. He points out that teachers and all adults have a responsibility to protect youth from these dangers by making them conscious of them.

Dr. Kalyanram's article describes the baneful effects of many 'pop' musical styles, and coincidentally (or synchronistically?) the Plato quotation at the beginning of Venkatesh Onkar's article on 'The evolving chant' contends that new musical styles could insidiously undermine a whole society's ethos. This article is a meditative one calling for non-judgemental reflection, along with students, on the great emotional energy contained by music, and its potentiality if 'passively consumed', as a carrier of that energy to prematurely form the identities of young persons, around the vital areas of sexuality, desire and relationships. Instead of escaping into passively consuming such music, the students should be invited to see the value of 'direct immersion' into music and actually creating it.

More escapisms. 'Goodness in a changing world' by the editors of the journal, describes how the severe distortion of childhood preoccupied with academic success and the consequent pressure and anxiety is driving children into the escapes of pleasure seeking and narcissistic isolation from their peers. Krishnamurti said, 'It is the educator who needs to be educated.' In this spirit the authors write about the need to examine the pattern of their own lives.

Such self-reflection alone (and not the ‘time-honoured’ practice of ‘instilling values’ into children’s minds) would help to nurture the potential for qualities such as honesty, courage, forgiveness and generosity in young people.

G. Ananthapadmanabhan’s ‘The sameness curriculum’ points out how the well-intentioned effort to respect the child’s individuality and develop his or her real interests, may be undermining the other side of Krishnamurti education, namely to see the common ground on which all human beings stand—the common ground of universal patterns of thought and feeling as formulated in Krishnamurti’s statement, ‘You are the world.’

‘Amaltash’ describes the attempt in the Valley School, KFI, to make learning a free flow for eleven and thirteen year olds by breaking up the standard ‘horizontal’ structure of grouping children of the same age group in a class, and having a ‘vertical’ structure consisting of children of all these ages, thus making it possible to keep examinations away from the immediate horizon, enabling each child to learn at his or her own pace, and making it possible for children to learn from each other.

The alienation from and assault on Nature is of course the theme of many a lament in modern discourse and many authors in this issue are concerned with how to reconnect with and immerse ourselves and young people into Nature.

Suprabha Seshan and her team’s article on ‘Meeting life’ describes the ‘Landscapes course’ which makes participants ‘live as parts of the forest landscapes’ in two camp sites in the Western Ghats and Western Himalayas. The means used include both academic studies and the physical exploration of flora and fauna. K. Ramesh’s review of Tara Gandhi’s book *Birds and Plant Regeneration* is an appreciation of the ways in which the book describes the intricate and delicate inter-relationships between birds and plants, and how this inter-relationship is part of the larger ecological cycle of earth-flora-fauna-atmosphere. Ashna Sen’s ‘On mathematics, nature and the nature of learning’ is about a more intellectual way of connecting to Nature and Cosmos by discerning the mathematical patterns embedded in them, following in the footsteps of ancient Greek and Indian mathematicians, and following through with modern studies on mathematical patterns in biological, ecological and population systems.

The excerpt from one of David Orr’s writings, entitled ‘Is environmental education an oxymoron’ describes how institutions of higher education,

instead of being places of fundamental inquiry into the premises of our present attitudes to Nature, are actually reinforcing and legitimising these premises through excessive professionalisation, specialisation and careerism. Orr's article provides a graphic illustration of Krishnamurti's statement 'Knowledge moves in the shadow of ignorance' when he points out how it is only the knowledge of CFCs and nuclear reactions, which creates our ignorance of their effects. The article calls for a serious effort to rethink the substance and process of education and research and the definition of knowledge.

Patrick Foster's 'Desperate times and a new order of education' is a fervent plea for a reevaluation of all values and to 'construct a new world view'. But the question is, can a new world view be 'constructed'? Indeed, commendable and very necessary as are all the initiatives described in the articles, including Foster's we are still left with the feeling that there is something vital missing, that try as we may, we are somehow missing that 'source' from which issues plenitude, and the new world Krishnamurti talks about.

With T.S. Eliot we can only say:

We must be still and still moving

Into another intensity

For a further union, a deeper communion...

Krishnamurti has the last word when he says, 'It is only through negation that the positive is born.' Hence the need to always move beyond whatever has been done, however necessary it may be.

O. Ramachandra Rao



Goodness in a Changing World

THE EDITORS



Our discussions in the recent past have often veered towards some troubling trends that we notice in the lives of the urban middle and upper-class students in our schools. As teachers we discovered that we share many common perceptions. For instance, pleasure seems to be the driving force behind most choices that are made. This leads to constant self-absorption, nurtured by the times. There is a sense of ‘why should I do anything unless I get something out of it?’ Pleasure, the reinforcing factor, is quicker and easier now to obtain. Easy money and the consequent consumerism render identity and happiness dependent on possessions—what I own determines what I am. Young people want to maintain or, even, exceed their parents’ lifestyle, and their single-minded aim is for economic success. This, in turn, translates into a preoccupation with academic success. The result is a severe distortion of childhood filled with pressure and anxiety.

Are these preoccupations confined to the affluent middle class? Obviously not. It seems that the aspiration for an almost one-dimensional story of success is reaching children of all sections of society.

As teachers, we have also noticed changes in the classroom in the past few years. Children are less comfortable working in groups, preferring instead to work in isolation, ‘finish and be done’ with any assigned study. Left to themselves peer conversations quickly take on a bantering tone that sometimes has a cruel edge: disparaging talk that is mostly about each other. In such interactions, the mind becomes comparative, constantly having to decide between what may be ‘cool’ or ‘not cool’. Very often, these decisions are linked to branded possessions and expensive gadgetry. Concerns around excessive television watching are now morphing into concerns about that other screen, one that gives an illusion of control through a keyboard or mouse, and allows

a twelve year old to kill imaginary enemies, or, when that gets boring, to chat endlessly with friends (or even strangers) about the vacuous content fed by films and advertising. These children are increasingly retreating or are being pushed into their own little corners, creating their own virtual worlds.

Although, in our discussions, what we pointed out related to children, it was also becoming increasingly clear that children are, after all, victims of the society created by adults. We create society, they inherit its complexities. The problem lies with us and therefore we have to take responsibility for it. Nor is this phenomenon special to this age. For centuries we may have possessed the instinct to seek pleasure and avoid pain. Our brains are addictive in the sense that we seek to perpetuate situations of pleasure, where we can 'escape' facing ourselves and run away from our insecurities. But as we know only too well, pain and insecurity do not go away; there is really no escape.

Traditionally we have looked at all this as a moral dilemma. Consequently, over the centuries people have been led to explore questions of 'values' and 'goodness'. However our responses have almost always been 'insufficient' in one way or the other. Inevitably, our responses have led us to new dilemmas, which bring forth further inadequate responses, and so the cycle goes on. To illustrate, in order to instill the right values in our children, we have identified values such as honesty, courage, forgiveness and generosity, written books describing and prescribing moral behaviour, and created a separate subject in the curriculum for their transmission. Plainly, these measures have not worked. Perhaps it is our very notion of 'instilling', of 'prescribing' and 'transmitting' values that is misguided. In the process, values have become mere academic concepts.

It is here that our study of Krishnamurti's thoughts on education has been of great significance, enabling us to look at the question of goodness and values afresh, and in a different way.

Goodness as a living thing

The key could lie in relationship—a living engagement between adult and child, where there is warmth and mutual affection. In such a relationship, through dialogue and self-reflection, it is possible for a meeting of minds. This allows for an understanding of goodness as a living thing that is reflected in behaviour, rather than as a concept.

What can we as teachers do to nurture these sensibilities in ourselves and in the young people in our care? The first 'commandment' that springs

to mind is this: do not try to impose an external set of values and rules of behaviour. This would be counterproductive and sterile for both child and adult. In our relationship with children, we might instead listen closely, be vulnerable, and pose the ‘apt’ question when necessary. There is great value in a conscious examination of the patterns we observe in our own lives, as well as in the local environment and community. Examining these as a group of affectionate friends, paying attention together, engenders a quality of self-reflection that is a vital antidote to thoughtless self-absorption. Such dialogical interaction is not about mysterious abstractions, but about our daily lives and the attention we pay to our daily activities.

Today, we live in perpetual engagement with certain ‘modern’ activities that are driving out the space for simple everyday acts that may put us in touch with the flow of life around us. Acts such as making something with our hands, going for a walk and looking around, being attentive to people, to nature, to our man-made environments, or just sitting alone, need to be encouraged in schools, in order to counter the pleasure-seeking thrust of the modern world.

There is another dimension of urgency to our lives that is becoming starkly evident in the twenty-first century. We are not only losing touch with a rooted sense of family, of friendships, the sense of community beyond our own self-defined individual identity; but the larger backdrop of the earth on which we all live looms larger than ever before. Climate change and its consequences are now the stuff of daily news, sending a message that none can afford to neglect: that apart from being accountable to each other, we are all inextricably bound to the well-being of the planet and its numerous species. The moral dimension of these issues underscores the demand for a wholly new sense of goodness that must explode across the planet, if its nurturing beauty is not to degenerate further, making all our lives ‘nasty, brutish and short’. There seems to be no further cycle that would naturally follow upon our failure to meet the present crises.

It is in this context—the self-absorption of modern living juxtaposed with the colossal demand for regeneration of goodness in the world—that the role of the school and the home becomes more relevant than ever.

Adults and children together need to develop that keen, wide intelligence that can aid them in traversing the minefields that contemporary life is littered with. The first principle here is that we need to be ‘wide awake’. And school is

the place to learn attention, to nurture understanding and develop a wakeful, responsible attitude to the world as it is. It is only when we recognize that we have as much to learn as our students about ourselves and the world around us, that a relationship of mutual listening can be established. Then, in our speaking with children we find that they in fact see the significance of our concerns. Scratch the surface, and beneath the veneer of preoccupation with many things, there is a love of learning, an intelligent, curious young mind that is willing to listen, to question, to wonder, and an eagerness to engage with wider issues. If we can build on these qualities that already reside in our children, such an approach to goodness would indeed be timeless—as powerful and possible a means of exploring the formation of values today as it ever was.

These two strands then, of learning and awareness, should allow the brain to retain pliability, tentativeness and acuteness of perception, in the face of whatever challenges each coming decade will throw up. In this way, we and our children need not feel that we are at the mercy of the forces around us, but learn to meet them with intelligence, and go on to lead more wholesome lives.



Is Environmental Education an Oxymoron?

DAVID W. ORR



For those calling themselves environmental educators, it is sobering to note that the only people who have lived sustainably in the Amazon rain forests, the desert Southwest, or anywhere else on earth could not read or write (which is not to say that they were uneducated). And those in the United States living closest to the ideal of sustainability, the Amish for example, do not make a fetish of education, seeing it as another source of deadly pride. On the other hand, those whose decisions are wreaking havoc on the planet are not infrequently well educated, armed with B.A.s, B.S.s, L.L.B.s, M.B.A.s, and Ph.Ds. Elie Wiesel has made the same point in a different context, noting that the designers and perpetrators of Auschwitz, Buchenwald and Dachau, the heirs and kin of Kant and Goethe, also possessed quite substantial academic credentials. It would seem, then, that the relationship between education and decent behaviour of any sort is not exactly straightforward. Three possibilities are worth considering.

First, perhaps education is part of the problem. Cultures capable of generating an alphabet and written language have tended to become environmentally destructive. Written language is implicated with the rise of cities, agricultural surpluses and soil erosion, fanatical belief systems, irate and well-armed pilgrims, armies, usury, institutionalised greed, notions of collective aggrandizement, and eventually progrowth hucksters—all of which take a toll on soils, forests, wildlife, and landscape. Hence Chateaubriand's observation that forests precede civilization and deserts follow it. In the larger scheme of things, education may only have made us more clever, but not ecologically wiser.

As circumstantial evidence I offer the observation that the time and expense of higher education is most often excused on the grounds that it

increases lifetime earnings, a crude but useful measure of the total amount of carbon the scholar is able to redistribute from the earth's crust to the atmosphere. It is somewhat rarer for education to be extolled on the grounds that it reduces the graduates' impact on the biosphere, or because it hones their skills in the art of living simply. Such claims are indeed sufficiently rare that we may reasonably surmise that, on average, those whose lifetime earnings are enhanced by degrees do more damage to the planet than those less encumbered.

Second, it may be that, beyond some fairly minimal level, education is just not an important determinant of behaviour, ecological or otherwise. There is a shelf of dust-laden studies about the difference education makes. And what difference does four years of higher learning make? The conclusions, given present tuition rates, are remarkably ambivalent. For the majority, peer influences seem to be a more important source of ideas and behaviour than professors or courses. Most students seem to regard education as a ticket to a high-paying job, not as a path to a richer interior life, let alone one of saving the planet. We also have reason to believe that television, the automobile, and cheap energy have had more to do with ecological behaviour than formal schooling.

Most students seem to regard education as a ticket to a high-paying job, not as a path to a richer interior life, let alone one of saving the planet.

A third possibility is that, under certain conditions, education might exert a positive influence on ecological behaviour, but that these conditions by and large do not now prevail. Higher education, particularly that in prestigious universities, is often animated by other forces including those of pecuniary advantage and prestige. 'Academic professionalism, specialism, and careerism,' in Bruce Wilshire's words, 'have taken precedence over teaching, and the education and development of both professors and students has been undermined.' The 'moral collapse' that he describes results from the separation of the professionalised intellect from the personhood of the scholar. Moreover, the university 'exists in strange detachment from crucial human realities, and perpetuates the implicit dogma that there is no truth about the human condition as a whole'.

The moral crisis of the university is perpetuated by faculty, and I suppose administrators, who can 'rationalise away and conceal [their] stunted

personalit[ies] and emotional infantilism'. Wilshire proposes to heal the 'ethical sickness' of the university by reducing its scale so that it can 'address the persons within it as beings who are immeasurably more than their professional roles' by 'leav(ing) room for listening, ruminating, and silence... for wonderment and for caring'—an interesting subject for a memo to the dean of graduate research. But whether a morally resuscitated university would turn out graduates better suited to the limits of the planet is not clear. I am inclined to think that moral revitalization is necessary but not sufficient.

Defenders of the generic university tend to justify it not on the quality of teaching or the moral refinement and ecological rectitude of its faculty and graduates, but rather on its contributions to what, with suitable gravity, is called the 'fund of human knowledge', that is research. And what can be said of this form of human activity? Historian Page Smith, for one, writes that:

The vast majority of research turned out in the modern university is essentially worthless. It does not result in any measurable benefit to anything or anybody. It does not push back those omnipresent 'frontiers of knowledge' so confidently evoked; it does not in the main result in greater health or happiness among the general populace or any particular segment of it. It is busywork on a vast, almost incomprehensible scale. It is dispiriting; it depresses the whole scholarly enterprise; and most important of all, it deprives the student of what he or she deserves—the thoughtful and considerate attention of a teacher deeply and unequivocally committed to teaching.

There is more to be said. Most research is aimed to further the project of human domination of the planet. Considerably less of it is directed at understanding the effects of domination. Less still is aimed to develop ecologically sound alternatives that enable us to live within natural limits. Ultimately our survival will depend as much on rediscovery as on research. In this category I would include knowledge of justice, appropriate scale, the synchronization of morally solvent ends and means, sufficiency, and how to live well in a place.

The university's preoccupation with research rests on the belief that ignorance is a solvable problem. Ignorance is not solvable because we simply cannot know all of the effects of our actions. As these become more extensive and varied through 'research and development', knowledge grows. But like the circumference of an expanding circle, ignorance multiplies as well. (This is not true, I think, for what is called 'wisdom', which has to do with

knowledge about the limits and proper uses of knowledge.) The relationship between ignorance and knowledge is not zero-sum. For every research victory there is a corresponding increase in ignorance. The discovery of CFCs, for example, ‘created’ the ignorance of their effects on climate and stratospheric ozone. In other words, what was until 1930 a trivial, hypothetical area of ignorance became, with the ‘advance of knowledge’, a critical and possibly life-threatening gap in human understanding of the biosphere. Likewise, our ignorance of how to safely and permanently store nuclear waste did not exist as an important category until the discovery of how to make a nuclear reactor. This is neither an argument against knowledge nor one for ignorance. It is rather a statement about the physics of knowledge and the peril of thinking ourselves smarter than we are, and smarter than we can ever become. In Wendell Berry’s words:

If we want to know and cannot help knowing, then let us learn as fully and accurately as we decently can. But let us at the same time abandon our superstitious beliefs about knowledge: that it is ever sufficient; that it can of itself solve problems; that it is intrinsically good; that it can be used objectively or disinterestedly.

On balance, I think, we are becoming more ignorant because we are losing knowledge about how to inhabit our places on the planet sustainably, while impoverishing the genetic knowledge accumulated through millions of years of evolution.

The belief that we are currently undergoing an explosion of knowledge is a piece of highly misleading and self-serving hype. The fact is that some kinds of knowledge are growing while others are in decline. Among the losses are vast amounts of genetic information from the wanton destruction of biological diversity, due in no small part to knowledge put to destructive purposes. We are losing, as David Ehrenfeld has observed, whole sections of the university curriculum in areas such as taxonomy, systematics, and natural history. We are also losing the intimate and productive knowledge of our landscape. In Barry Lopez’s words: ‘Year by year, the number of people with first-hand experience in the land dwindles... herald(ing) a society in which it is no longer necessary for human beings to know where they live except as those places are described and fixed by numbers.’ On balance, I think, we are becoming more ignorant because we are losing knowledge about how to inhabit our places on the planet sustainably, while impoverishing the genetic knowledge accumulated through millions of years of evolution. And some of the presumed knowledge we are

gaining, given our present state of social, political, and cultural evolution, is dangerous; much of it is monumentally trivial.

Conservation education need not be an oxymoron. But if it is to become a significant force for a sustainable and humane world, it must be woven throughout the entire curriculum and through all of the operations of the institution, and not confined to a few scattered courses. This will require a serious effort to rethink the substance and process of education, the purposes and use of research, the definition of knowledge, and the relationship of institutions of higher education to human survival. All of which will require courageous and visionary leadership. In the mounting battle for a habitable planet it is time for teachers, college and university presidents, faculty, and trustees to stand up and be counted.

Dr David W. Orr is the Paul Sears Distinguished Professor of Environmental Studies and Politics at Oberlin College, USA

Excerpted with permission from his book: 'Ecological Literacy: Education and the Transition to a Post-modern World', State University of New York Press



On Mathematics, Nature, and the Nature of Learning

ASHNA SEN



Have you ever taken a walk down a long winding road along the banks of a river, amidst strewn pebbles, clusters of wild grass, acorns and scattered chestnuts? Have you ever dropped a stone into that river and watched the ripples merge with the river's natural turbulence? Have you ever observed the 'fractal' branches of trees lining the river and waited for fractal-patterned snowflakes with their six-fold symmetry to arrive—the first of the season?

Nature seems to sing the song of mathematics—be it hidden within the symmetry of a sunflower or the arrangements of leaves on a stem or the patterns on an acorn. If you look carefully at the 'rows' of a pineapple they align in three different directions. The numbers of rows in the three directions are: 8, 13, and 21. These are three consecutive so-called Fibonacci numbers which form an infinite sequence 1, 2, 3, 5, 8, 13, 21, 34, 55, 89 . . . The line symmetry in seashells, crabs, starfish, the artistic ripples of angelfish scales, and the symmetry of some

insects seem to portray a mathematical precision. Even the waves on the surface of puddles, ponds or lakes are governed by mathematical relationships between the speed, wavelength and the depth of water. So there is order in chaos! There is hidden mathematical order in flocks of birds, their pattern formation as they migrate, and among crowds of people as they assemble.

The connection between nature and mathematics was detected by the earliest man. Nature, in all its myriad forms, is like the first classroom, revealing its hidden mysteries to the discerning learner. This direct communion between the teacher, nature, and the taught, the child, playing in a clearing in the woods by a stream, arises effortlessly without the baggage and stress associated with ordinary classroom learning. Nature in all its manifestations appears to nurture curiosity—dropping hints about its mysteries and urging the inquisitive mind to stretch, and further extend its boundaries and insights. Nature urges us to notice patterns, presenting

them as infinite repetitions and ordered sets. It is as though nature itself provides all the instructions. The instructions may be within our genes since DNA determine our structure, or may be within the deep physical laws embedded in our universe that determine how matter behaves or coagulates, which we have the ability to understand. The ability to make distinctions between the discrete and continuous seems to be inbuilt in most animals. One could perhaps argue the case that a lion can count—the lion would have to make a quick decision about the numerical strength of his adversaries when confronted by a pride and either fight or flee. Numbers seem central to our very existence and evolution.

The ancient Greek mathematicians and philosophers, the medieval Arab thinkers and the Indians before them had discovered the magic of numbers and patterns. In fact, Greek cults were woven around the search for prime numbers, and magical mathematical relationships such as the Theorem of Pythagoras were guarded in esoteric circles. Even the concept of zero and infinity, both philosophical constructions, were pondered upon long ago by mathematicians like Brahmagupta — the Indian mathematician and astronomer attached to the ancient Ujjain university.

Pythagoras of Samos, who lived towards the end of the sixth century B.C., was a significant figure. The tradition of ‘arithmetic theology’ developed during

his lifetime and flourished afterwards among his successors. This period saw a rapid advance in the esoteric areas of arithmetic—number classification, discovery of primes and geometrical and numerical relationships. The Pythagoreans attributed the order in the universe to the presence of numbers, which they therefore saw as having a mystical dimension. In their eyes, these numbers perhaps unravelled the mysteries of cosmic universal laws like instructions to piece together revelations. It was as though these numbers were the sacred instruments that spoke a transcendental language. The Pythagorean arithmological tradition recognized ten principles of all things described as the first cycle of ten numbers from the monad or essential unity to the decad. Numbers also had attributes; for instance the number ‘one’ present in all numbers, and effectively describing them, is the ‘Intellect, Artificer, Prometheus’. The Pythagoreans also put into perspective notions of periodicity and proportion by realizing that the ratio of numbers produced consonant intervals. These ideas were later to frame the science of harmonics and acoustics.

So nature, music, and numbers are interconnected and seem to form the very fabric of learning. Indeed, the mathematics of biological form arises not only in nature in general but even within our own bodies. It is over 400 years since Leonardo da Vinci performed the first scientific examination of the human body in Florence. His

curiosity was initially fuelled by his desire to paint the human form more accurately; a feat he thought he could best achieve through dissection. His artistic sketches were of such high calibre, not only in the accuracy of the drawings but also in their clarity of perception that they led to the introduction of cross-sectional diagrams in anatomy. Among his discoveries was the fact that the heart was a muscle, responsible for pumping blood through the arteries and then the veins, and was not, as was previously thought, the 'vital spirit' of the body. It is the arteries and veins, and the flow of blood within them, which primarily motivated my own doctoral studies on the mathematics of blood flow in the body. I was not surprised to observe, mathematically, the undulatory nature of arterial blood flow when encountering a constriction within the blood vessel. My numerical calculations were a mathematical simulation, using modern techniques, of physiological flow like that arising in blood vessels within the body encountering a constriction. The constriction modelled an arterial blockage or an aneurism. The results indicated complex 'mathematical' oscillations in the flow, with different types of periodicity, depending on the response of the visco-elastic walls that were modelled by a flexible tube containing the fluid (blood).

Recent mathematical studies of biological systems have delved into areas ranging from physiological flows

to population dynamics within groups. Collective societies, be they human or animal groups, make informed consensus decisions—how they arrive upon them has a mathematical query built into it. How do ecological interactions produce population dynamics and how does information flow within the individuals in the collective body in a continually changing environment? Mathematical models are set up to answer such questions by current researchers in mathematical biology. We have been continuously discovering the richness of our ecological system, of our environment, and the universe beyond, from ancient times to the present day.

The nature of learning itself, and the intellectual challenge provided by hidden patterns in nature propel us, like a jigsaw puzzle, to discover the larger picture and to make sense of our observations.

From time immemorial the human mind has tried to understand its connection with the cosmos. The nature of learning itself, and the intellectual challenge provided by hidden patterns in nature propel us, like a jigsaw puzzle, to discover the larger picture and to make sense of our observations. Mathematics, in its growth and evolution through the centuries has utilized the general principles of deduction, data measurement, proof and modelling which form the basis of most learning. One might extend this argument and say that,

inherently, learning, particularly learning mathematics, is a simultaneously individual and collective process, a social process.

Teaching the core-group of students in the age group 13-15 at Brockwood Park School has been a unique exercise for me in understanding better this collective process of inquiry through thinking about mathematics. In class we all turn into wide-eyed discoverers, uncovering step-by-step like our ancestors did before us, the very structure that mathematics is built upon. One of the topics that we covered in the 'core-group' class was co-ordinate geometry which most of the class had encountered in some form before.

A line is an infinite linear grouping of points, but it occupies no dimension and yet builds a higher dimension, they said. How is that possible? They continued with their probing.

During one lesson, I meant to illustrate the concept of a 'point' in space in order to clarify the idea of 'location'. The class protested at once when I outlined the nature of the point, its mere presence, and the fact that it has no volume. How do you expect us, they responded, to accept all this mathematics when the very structure you base everything on lacks physical presence? A line is an infinite linear grouping of points, but it occupies no dimension and yet builds a higher dimension, they said. How is that possible? They continued with their probing. And how can a higher dimension

encase a lower one? In fact if we were constrained to live on a surface how could we understand what three-dimensional 'volume' might be?

I was challenged by the intriguing questions raised by the class and addressed their queries on dimensionality by relating an anecdote from a long time ago. I too had been mystified by the concept of space, geometry and dimensions in school and had never quite understood the rationality behind the 'building' of geometric space. 'It finally struck me one day,' I related, 'during my freshman year as an undergraduate in the States and the pieces of the puzzle began to fit. I had just finished attending a lecture on dimensionality—on how a higher dimension is somehow "greater" and "understands" the lower one, but it is hard to go the other way, except for hints left by the higher dimension. For instance if you are stuck in a "zeroth" dimension, so imagine you were a dot, you would not have the concept of a line which is a higher dimension. And if you are a line, you won't have the ability to understand what a plane is or what flat land is. However, if you already reside at a higher level (say even in two dimensions) then you have the potential to gauge the presence of something greater than you. So if you are a plane (just a two-dimensional sheet) and a sphere passes through your world . . . you will first see a dot and then concentric circular discs as the sphere passes through the plane, cutting through the flat sheet. The circle will be the biggest at the diameter when

the sphere is half-way down the sheet. And so, someone in flat land can understand that perhaps the objects passing through are not just a sequence of concentric circles. The flat-lander will surmise that the hint is of a whole object in a higher dimension which is beyond his or her grasp.'

This illustration at once brought a smile on the faces of the core-group students; they too became philosophers seeking ways to make sense of their intricate, supposedly three-dimensional world!

Through each class, I feel I can understand better the process and nature

of learning. Personal stories, anecdotes and even story-telling can sometimes shed light on an otherwise involved and rather mathematical concept. The foundations of 'number' it seems is more natural than we might think at first. The process of re-discovery of numbers, their complex interrelationships and their connection to nature, appears to be not 'reclamation' but an uncharted voyage into virgin territory. This sense of original discovery makes us all together a community of inquirers.

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The Elegant Science of Life: Biology

Boxed in the classroom?

GEETHA IYER



Here is some recent, assorted news making headlines in the field of biology:

- It is time to stop thinking we are the pinnacle of evolutionary success—**chimpanzees are the more highly evolved species**, according to new research.
- Over the last half-century, researchers have found that mineral surfaces may have played critical roles organizing, or activating, molecules that would become essential ingredients to all life.
- One single molecule determines how stem cells in the hair follicle develop and cells that should give rise to hair can instead give rise to mammary gland cells in mice if they lack this molecule.
- The first baby rhino ever conceived by artificial fertilisation was born at Budapest Zoo on 23 January 2007.
- Bacteria in the world's oceans can efficiently exploit solar energy to grow, thanks to a unique light-capturing pigment.
- Genetic analysis of an obscure, worm-like creature retrieved from the depths of the North Atlantic has led to the discovery of a new phylum.
- From Karnal to Coimbatore, genetically modified crops are becoming a matter of great concern for Indians worried about safety as well as loss of biodiversity.
- Researchers have identified a gene that affects both a person's sensitivity to short-term (acute) pain and their risk of developing chronic pain after a kind of back surgery. (Source: www.ebiologynews.com)

A look at these statements is enough to make a person's head spin. Yet it is exciting! It is so exciting that somehow teachers want to share it all with their apprentices in school without any notion of how it might be received or what preparation is needed for receiving it. Therefore we have not only just plain old biology being taught at school, but also its new-found branches such as biotechnology. In the coming years one could well see biochemistry and bioinformatics rubbing their noses (or should I say molecules) with biology. Who is to question the relevance of such fancy information as a tool for education?

There is a quiet revolution happening in this world of biology. It is so closely entwined with life that it has not caught the attention of humanity at large. But it is there for anyone who has the time to see it. In the quiet and comprehensive unfolding of biology's new frontiers, we are seeing the beginnings of designer-organisms, driven by the force of nano-technology. And these are not just laboratory bacteria or molecular viruses and prions, but larger animals and soon humans! They are designed to be small, efficient and chemical rather than biological! We may not be able to stop scientific discoveries and inventions but surely we can empower our children to meet them. Are we equipping our children to meet this eventuality? The key lies in meaningful education and biology education will no doubt be significant in the coming years.

In this technology driven world, where there is this obsessive and compulsive longing for science education, what biology should children be learning in schools? How should they be learning it? For a child, the beginnings of scientific experience and inquiry is biological; from it follows experience of all other sciences. This is perhaps a very reductionist way of looking at science at a time when integration is what would be of greater importance. But biology education as it exists now in our schools is reductionist to the core. Examine it carefully and this is what you will find.

Fragmented organization of concepts

The diversity of this science makes the subject quite complex in composition. Traditionally the vast complexity was sorted out by dividing it into botany and zoology and then everything else was somehow or the other fitted into the two divisions. What did it do to the learning of the subject? It fragmented the concepts that otherwise unify life. A classic example of this

fragmentation lies in the way physiology is dealt with. We have plant physiology and animal physiology; and then human physiology. Ask a high school student simple questions about respiration and eight times out of ten you would get the answer that plants do not take in oxygen and that they give out carbon dioxide—it is only animals and humans that do so. They say that plants take in carbon dioxide and give out oxygen. However, you would never find the essence of this most significant process in their answers, which only reflect the confusion about breathing and respiration. Ask any adult what an insect is and you would get answers ranging from earthworm to centipede to spider. What I found even more shocking during the course of my research was that for many a student and adult, tigers and lions were the same organism! How little biology is understood or learnt!

Repetitive content

Examine the biology curriculum of any school today and be sure you would be left with confusion about its intent. Why on earth is a flowering plant, its parts and functions a topic for learning from primary to middle to secondary school? It seems as though if you were to take away the morphology of flowering plants, taxonomy, photosynthesis and transpiration, there is no botany to be learnt! This is a tremendous injustice to plant biology. It never allows a student to understand how well a plant adapts to the changing environment, to survive the harshest of situations through the simplest of means. If at all any science can teach children the basic truth that problems can be overcome when solutions are kept simple, then it is this biology of plants. There is elegance in the way organisms (be they plants or animals) solve the problems of survival, a concept understood by very few in school. For most it is effective brainwashing into believing that botany is the most boring of sciences. And indeed, why not? There appears to be nothing to learn beyond plant parts and functions! And adaptations are taught like rules learnt in an English grammar class! At the end of it all not many teachers or students learn botany that has any significance to their life.

Acontextual learning

A syllabus merely outlines the content. Some school boards give a concise scope of the content. But the life and soul has to be provided by the teachers. And for doing this teachers today turn to the only easily available source—the textbooks that give a lot of flesh but no soul to the curriculum.

The result? Students learn examples they cannot observe and therefore cannot understand. I still have vivid memories of my ecology lessons. I was taught woodland ecosystems with examples I could never relate to, since the examples were all alien! The library had books (and I have noticed that most schools still have them) that had only American or African examples; these were dutifully reproduced in Indian textbooks and teachers still rely heavily on them. Why do we have such a situation? The biology syllabus has hardly paid any attention to these simple yet important aspects—that the content should be designed to help learn biology from one's own neighbourhood. Nor does there seem to be any kind of textbook evaluation that schools could take note of, while obtaining their teaching resources.

Lack of relevance

The selection of the content leaves a lot to be desired. Most students stop studying biology after high school. Would they have learnt anything relevant for life from biology? This is doubtful. When asked to point out where the liver is located, several primary school teachers of science got it wrong! Many students opt for biology with the aspiration to study medicine. What relevance does biology have for them? Is there any continuity or purpose as a student moves from one level to another beyond an opportunity to improve memory? There are innumerable topics that are relevant for life that can be learnt; sadly we are too traditional to change.

Information overload

This aspect does not merit discussion beyond stating that the malaise is not unique to biology but to education at large, for do we not expect children to master counting before they are hardly four years old!

What should be learnt in biology

What a curriculum in biology should attempt is (a) to keep in mind the larger aim of education and (b) to cater to science education at different levels. Leaving aside the first and considering the second, ideally it would be enough if one were to start learning the specific discipline of biological science from Class 11, i.e. at the senior secondary level. Till then biology needs to be the starting point for, and an integration of, science concepts in all classes. It is well known that learning is experiential. There is hardly any concept in science that cannot be learnt with biology as a starting point.

The NCERT design for schools affiliated to the CBSE has been attempting

this. We teach only general science till Class 10. As a teacher who has taught this course since its inception way back in the mid-1980s and has since then seen various modifications its, I find that the principle of integration is yet to be achieved. Let us take a topic like Materials. At every stage it is treated merely as a topic in chemistry. Similarly, work, power and energy that can be integrated in the study of general science are treated merely in terms of laws and experiments in physics. Force, Newton's laws, gravity, friction and many more of these abstract laws can make so much sense if you had biology accompanying them. Clearly, our wish to see a new way of education simply does not match our efforts at curriculum design. We are afraid to leave the trodden path. Mere decoration cannot hide the cracks underneath.

My dream biology education

Away from classrooms and laboratories, observation should become the foundation for learning biology. Here are some radical suggestions for learning the sciences:

- Shut down the laboratories. In today's learning mode they serve no useful purpose and are mere window dressings for non-existent experimentation.
- Use those closed and boxed structures called classrooms minimally and move children outdoors for learning.
- Be careful about the standards of books chosen. Instead of textbooks for children, stock up the library, set up classroom libraries and encourage children to write their own materials. Discard textbooks altogether if possible.
- This suggestion deserves to be examined in depth: Give time for learning. It is high time the 40-minute, eight period daily regimen is examined thoroughly and replaced by a learner-friendly structure affording time for observation and experimentation.

So what would one be learning? Biology can begin from oneself, from one's home or from nature. This is nothing new, one would say. True, but the learning lies in the direction given by the curriculum. This is best explained by an example—let us take the characteristics of living beings and the differences between living and non-living beings. I chose this example because it is considered as elementary by most, but according to me it is

one that has potential for multiple levels of learning and would have great importance in the coming years. This topic certainly rears its head in Class 5, if not earlier.

Class 5

Teaching at this stage usually involves a hotch-potch of activities, of observing a host of features in a limited time span of 80 minutes, then a quick discussion and finally arriving at a list of points that would say why something is called living. This is normally followed by a couple of questions that will enumerate the differences. This topic next only appears again in Class 9. What has been learnt? Ask the teacher in Class 9 or 10 when she questions her students on whether milk and silk are living or non-living. There is no consensus, only confusion.

The characteristics of living beings are not as simple as they seem. Biologists are still grappling with a definition for the term 'life' itself. And students learn the eight to ten point differences at one go in Class 4 or 5. This should ideally be learnt step by step as the students move from Classes 5 to 9.

In Class 5, there should be experiments that allow children observe germination by using various materials from the kitchen. Children could measure heights and weights over a certain period of time, of themselves, of their younger siblings, friends and their own teachers. Other activities could be growing crystals and looking at the growth of various other things in their environment. These are a series of experiments that bring students close to a variety of sources, to their environment and to themselves. This gives them the information that would then become the basis for discussions. It could end with some understanding of the phenomenon of growth as a characteristic feature of living beings.

Class 6

At this stage movement as a characteristic of living beings can be introduced. Motion is a topic in physics too. There could be several interesting experiments that would help students learn not merely another characteristic of a living being but also other concepts in physical science. There is nothing more interesting for students than to experience an activity through their bodies. This can become a legitimate platform for discussing changes in themselves.

Class 7

One topic that can be learnt at this level is basic metabolic functions such as energy generation and utilization. Energy is a topic that is central to integrated science. It brings a certain depth to the understanding of living beings.

Class 8

The students are now in their adolescent years and this is just the time to introduce the topic of reproduction as a characteristic of living beings. It is also an interesting entry to understanding plant life as well as their own physiological and psychological changes.

Thus a topic such as characteristics of living beings can be imaginatively dealt with and taught in an integrated manner. There would be a genuine appreciation, and a glimmer of understanding, of the thin line that divides life from non-life. This topic in biology is futuristic too. Humanity is attempting to create human life artificially.

Biology is not only the science of life but has a sacredness that has evolved through eons along with the planet's energy cycle. The concept of the sacred will cease to exist if we continue to learn science in a fragmented way.

To conclude I quote Maria Montessori who puts everything I want to say most beautifully and precisely: 'The stars, stones, life of all kinds, form a whole in relation to each other and so close is this relationship that we cannot understand a stone without some understanding of the great sun.'

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The Evolving Chant

VENKATESH ONKAR



The introduction of a new kind of music must be shunned as imperiling the whole state, for styles of music are never disturbed without affecting the most important political institutions ... The new style, gradually gaining lodgment, quietly insinuates itself into manners and customs, and from these it ... goes on to attack laws and constitutions, displaying the utmost impudence, until it ends by overturning everything.

Plato, Republic

*M*orning assembly: a time for singing and gathering our energies for the day, has just ended and our campus is quiet as the day's work and classes begin. Through the window of my room, I hear a young student experimentally, cautiously, humming an ancient chant he has just learnt. Slowly the chant grows in volume and confidence. The deep, serious notes are a pleasure to listen to.

But wait! The chant is evolving, acquiring new rhythms and cadences. A drumbeat swells between the notes as he slaps his textbook with his open palm. The notes become syncopated as he simulates, variously, electric drums, guitars and other instruments I cannot identify. The chant, meanwhile, continues as a kind of rhythmic outpouring, totally different in tone and style from the manner in which it began. In one swift beat of its wings, it has left Indian shores and has returned totally transformed. The young boy hits a crescendo, wildly improvising, slipping in and out of control. He runs along the path, still chanting and drumming away furiously with the flat of his palm. The morning's music lesson is over.

It is both interesting and important to reflect on the fact that we are

musical beings, whatever our own perceptions of our individual musical abilities are. We all have the capacity to respond to the beauty of various musical forms and traditions, which in turn have tremendous power to tap into our emotional lives. In most musical cultures, the link between music and poetry is very deep, and the line between the two hard to draw; this adds a further dimension to the heady mix. Evidently, then, because music as a creative field has such a strong presence in our lives—emotionally, intellectually, culturally—it inevitably impinges upon our thoughts as educators.

While brainstorming and thinking about this essay, however, I was forcibly struck by the many assumptions that lie behind what music ‘actually is’. Even disregarding the vast body of theory that attempts to analyse the aesthetics and philosophies and cultural practices that constitute the field, I was forced to weave my way through several more commonsensical notions regarding the subject which are implicit in everyday thought. These assumptions, often conflicting, in turn threw up difficult questions. For example: Is music purely an introspective, meditative activity, as some theories of Indian classical music have it? Or can it merely be defined as a social and cultural product? Does either definition capture its essence, if any? What might be the difference between a public and a private engagement with music? In what ways is ‘popular’ music different from ‘serious classical’ music? Am I just biased if I even make a distinction between the two? Can I treat all musical expression equally? Why or why not? And so on. This long list is not just a rhetorical indulgence; I feel it vividly demonstrates some of the binds and misunderstandings we get into, both amongst ourselves as educators and with children, about culture and cultural activities. To avoid polarisation, the very meanings of the term we are discussing must be seen in all their shades and nuances, in exactly the same way that we might engage with young people and each other about the question of what constitutes ‘literature’ or ‘art’. In other words, all these terms and assumptions must be clearly laid on the table. Only then is a meaningful exploration of music (with young people) and its impact on our educational processes possible.

To my mind, there are two important sets of questions we can ask in this field. The first has to do with music and identity. In the broad ‘global’ cultural matrix that so many children (and adults) seem to participate in, what role does music play in forming young people’s sense of who they are? The second set of questions is I think more subtle and difficult to articulate and answer,

primarily because its terms seem much more subjective. It has to do with the creative power of music as art and its ability to foster a spirit of patience and self-awareness in young people and, by extension, adults as well. It covers the possibility of exploring depth and meaning in many musical fields.

In the broad ‘global’ cultural matrix that so many children (and adults) seem to participate in, what role does music play in forming young people’s sense of who they are?

To begin with the first question: what is the relationship between music and the process of identity formation? Obviously, this is part of a wider complex question of the relationship between identity and culture, the framework from which we draw our sense of self, of who we are. Equally obviously, we cannot rest content with cultural definitions. If, as Krishnamurti pointed out, learning about ourselves, our conditioning and our identity can take place, we must be sceptical about the messages we receive from society and culture about ‘who we are’. This seems particularly true in the context of adolescence and its quest for a stable permanent identity. Music, in the widest sense, because it draws together so many emotions and is tied in with deep feelings, provides an intense and concentrated space within which to explore this basic question.

Where do young people from a middle class milieu (and increasingly from other milieus as well) encounter music? Primarily through advertisements, Bollywood, records by pop, rock, hip-hop and rap artists (increasingly downloaded from the net) and FM radio channels. Some perhaps make a conscious effort to listen to classical or religious music, or encounter it through social interactions, but these are probably the exception rather than the rule.

It is obvious that the flourishing music industry provides adolescents with explicit and implicit messages, both at the melodic level—the substratum—and at the level of lyrics, which might range from the affectionately tender and humorous to the sexually explicit or violent. These messages attempt to define vital areas: sexuality, desire, power, relationship and emotional states of mind. The exact ‘message’, of course, varies from song to song and artist to artist. Typical messages might stress the emptiness of a life without love and desire; might equate success with wealth and power; or might be humorous about loss and longing. Lyrics often reinforce and emphasize an already existing mood such as loneliness or being on a ‘high’. They also seem

to, in one student's phrase, 'make you feel rebellious against someone else'. At the melodic level, too, there is an experience of a rush of either positive energy or a sense of melancholy and loss; melodies function at a very physical visceral level (they are 'happy happy' or 'sad sad' songs). Of course some songs and messages do ironically undercut stereotypes and are themselves critical of the processes they seem to participate in.

To reflect on these messages, it is crucial to break them down into their component parts and dialogue about them. This is not to say that meanings are simple or unambiguous; the music might be interpreted in a variety of ways. But rather than focussing exclusively on the meanings of the songs, students might be encouraged to observe the impact music has on the mind and body. Some other broad questions might emerge in this reflection: is the music telling us how to feel, or is it a reflection of our feelings? What does music tell us about the 'good life' and how to enjoy it? About emotion? Sex? Regret? Heartbreak? To what extent do we identify, emotionally and culturally, with the music we listen to? Why is music so intoxicating?

Particularly in the context of a residential campus, the question of a musical culture is important and raises interesting possibilities. One important question has to do with conformity. How do musical tastes and cultures get passed around? Is there a uniform culture that students feel obliged to fit into? What are the pressures created by such a situation, both on those who conform and on those who do not? Who are we, ultimately, in relation to our music?

The second important set of questions in this context has to do, I think, with subtlety, depth and meaning in music and how these are to be 'transmitted' to young people. These are necessarily subjective terms, to be discussed tentatively. At the same time, however subjective they are, we have all experienced the feeling of direct immersion and involvement that comes with being attentive to what we do, however simple or routine the task. Perhaps the basic creative ground of music is really that simple—paying deep attention to the fundamentals of sound, scale, rhythm, harmony, raga.

It is also vital to recognize that music does not exist in watertight compartments; traditions have informed each other, and influenced each other a great deal in the past, and will doubtless continue to do so.

Obviously this kind of attention cannot be tied to any particular musical tradition. Meditative traditions might facilitate this process; they cannot guarantee them. One of the polarisations I feel we get forced into, particularly with teenagers and adolescents, is between ‘classical’ and ‘modern’ music, and each side of the divide comes with powerful opinions and judgements of the other. It might be more useful, and perhaps more accurate, to recognize together a broadly unified field of musical capacity in human consciousness, which then becomes fragmented into particular traditions depending on local environments and cultures. It is also vital to recognize that music does not exist in watertight compartments; traditions have informed each other, and influenced each other a great deal in the past, and will doubtless continue to do so. In dialoguing about music with young people, it is important to stress on the fluidity and transparency of music, rather than on a monolithic, static cultural form. Such an approach could potentially create a greater space and openness among adults and children for the kind of listening I am talking about.

Alongside a sense of attention, I might emphasize the importance of actively creating music rather than passively consuming it. It is here that a practical engagement with the depth of music might be achieved with students. Playing with simple beats and scales; composing simple melodies and improvisations; even setting poetry to music—these are potentially achievable goals as long as we do not impose stringent adult criteria of perfection on them. Such an attentive creative space is perhaps an essential component of education. It encourages self-awareness and a sense of presence in our daily activities. It also militates against a mechanical consumption of culture, and forces us to be critical of our cultural environment.

I began this reflection with a private anecdote about a student. I would like to end with another anecdote, a public one, which emphasizes some of the contradictions and puzzles I have been trying to sort out. Our campus is in a rural setting, about 40 kilometres from Bangalore. Early each morning, around sunrise, the local temple springs to life and broadcasts music, mainly religious, to the village households. A perennial favourite, to my astonishment, is the Gayatri Mantra, formerly a symbol of male power and exclusivity, now flung to the winds by a woman’s voice accompanied by an orchestra, while startled birds listen in the light of dawn.

In the face of a musical flux, a kind of reordering of creative musical

forms, meanings and messages, it is important, I feel, to sustain a deep awareness of the primal energy of music and the manner in which it nourishes our emotional lives. If we can communicate some of this energy and passion to students, as well as maintain a sceptical attitude towards cultural forms and identities, we would be going a long way towards nurturing a creative space within which music assumes a vital life and energy of its own.

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Perspectives on Testing

KAMALA V. MUKUNDA



Testing is an inseparable part of the learning process. For the past few decades, there have been strong protests against the testing movement, but equally strong moves toward more and more testing and higher stakes associated with test results, especially in India. To make sense of this confusing state of affairs, it might help to examine very carefully what is meant by a ‘test’. Broadly speaking, a test measures the recall of knowledge from long-term memory, and better tests will measure the recall and application of this knowledge in new situations. By itself, thus defined, nothing could be less controversial. The problem, of course, lies in the purposes of testing, and these could raise the stakes so high that anxiety, nervous breakdown and even suicide can follow.

So it would be best to separate these two discussions—one on the purposes and uses of tests, and one on the nature and quality of tests.

Suppose a student learns about Mughal rule in a history class, or about the mean, median and mode in a mathematics class. This new knowledge is encoded in complex ways in his brain, in the pattern of interconnections among millions of neurons. As his teacher, I would naturally like to have a fairly accurate picture of what he has learned. What is a good way to go about this?

Unfortunately, there is currently no way to ‘scan’ my student’s brain to determine what is in there. Imagine how different things would be if, instead of tests and examinations, students had to submit to a painless brain scan at the end of every year! I need some other way of eliciting the stored understanding possessed by my student. One way is to give the student a context in which he needs to use those memories to perform a task, and this could be a worksheet, a homework assignment, or an academic test.

His performance on the task should allow me to infer something about his knowledge and understanding.

However, this apparently simple process is susceptible to three problems: lack of clear definition of ‘understanding’ or even ‘knowledge’, lack of validity of the measurement process and unacceptably large measurement error.

To help clarify these three closely related issues, look at an academic test simply as a measuring instrument, like a metal ruler or a weighing scale or a blood pressure monitor. In the case of a metal ruler, the aim is to measure length. People are agreed on the definition of length—a dictionary says it is the ‘extent from end to end’—and we don’t hear anyone arguing that the length of a line should be the angle it makes with the North-South axis of the earth, for example. Given this agreement, the metal ruler does a fairly good job of measuring length. The way we define length and the way we measure it are closely connected, and this makes the measuring instrument ‘valid’. Also, repeated measures using the metal ruler will give the same value for length, within a narrow band of error. An instrument like this, low on measurement error, is called ‘reliable’. Without these properties, the instrument would be virtually useless. Thus to measure length, you would not use a compass (different definition of length), a metal ruler with some centimetres marked longer than others (low validity), or a calibrated elastic band (high measurement error) . . . !

In the case of an academic test, the aim is to measure the student’s knowledge and understanding. Right away, we can see that we do not possess a measuring instrument as valid and reliable as a metal ruler. A person’s height is easy to measure, but her level of understanding of a concept is hidden, dynamic, and must be inferred from her behaviour. One of the aims of psychological research is to create better and better measures of all manner of psychological constructs, from love to self-esteem to intelligence. It is interesting that many people who would protest at the idea of measuring love would nevertheless cheerfully accept an IQ test as a measure of intelligence! Why do we think that intelligence or understanding are any more susceptible to accurate measurement than love?

Let us look at how we would create a test for academic understanding. There must first of all be agreement on how we define knowledge and understanding, just as there was for length. It is an interesting question to

stop now and ask yourself as a teacher—how would you define knowledge and understanding in your field?

Answering the question in terms of other psychological constructs does not help—to say that a student has understood when he has comprehended just extends the problem to the new words.

Quite likely, your answer goes something like: He has understood when he can do x, y or z. Thus our answer is usually in terms of the measurement process itself; we say that understanding is the ability to answer a particular set of questions correctly. This is on the right track, because in fact, an unambiguous operational definition of a psychological construct must be stated in terms of the method of measuring it. The problem however is that, unlike in the case of length, not everybody will agree on my definition, on my choice of questions. I am sure you have seen tests that you felt were not a good measure of knowledge and understanding in a particular subject. For example, multiple-choice questions have been heavily criticised for being poor measures of understanding.

This fundamental problem with definition is easy to forget, especially in a time when performance on tests has become synonymous with intelligence and understanding. It is an extremely illuminating exercise for a teacher just to step back and ask herself, ‘Is this examination or test getting at the essence of what I want my students to learn? What aspects of a subject do I want all my students to master? What are the abilities that will distinguish those who are competent from those who are excellent?’

At this point, you may say: the tests and examinations that my students take are doing quite a good job of this; good students do well and weak students do badly; is that not what the test is supposed to accomplish? But there is a flaw in this situation. What we teach is highly constrained, almost completely determined, by the tests we are aiming for. Our impression as teachers of who are the ‘good’ and ‘weak’ students is shaped by the tasks we structure, which in turn are shaped by the tests. As a crude example, suppose we want to teach cooking and we know that the final examination (for some unknown reason!) involves mainly baking. We might decide to spend most, if not all, of our classes on baking. In the end, however, the course is still called ‘Cooking’, and the certificate still says ‘Diploma in Cooking’, and we may still think of our successful students as good cooks!

Keeping this in mind, let us look now at the closely linked issue of

validity: is the test measuring what it claims to measure? One way of assessing the validity of a test is to see if the scores relate well with other tests. The problem with this kind of validity is that if all the tests are measuring the students' ability to, say, memorise certain facts, they may all correlate well with each other, but it still does not guarantee that any of them is really testing understanding. Another way of checking a test's validity is to see how it relates with performance in 'real life'. One problem with this is that real life situations are dramatically different from end-of-year test situations! Real life involves people working together over a longer period of time on open-ended problems with information available to them, but testing is typically individual, time-bound, close-ended and closed-book. So studies have found that test scores correlate well with performance in college, but beyond college the correlations seem to break down considerably (think of all the geniuses we have heard of, who did miserably in school). Thus the question of a test's validity, too, gives us plenty to think about.

Turning to reliability, what can we say about the measurement error of a test? Recall the calibrated elastic band that introduces error each time it measures. Is it possible for a test to introduce error while measuring knowledge or understanding that is present? The answer is: yes! Psychologists use a method called repeated testing to investigate this, and their research concludes that retrieval from memory is a highly variable process. On different occasions, being asked questions about what one has learned will not reliably bring out the same remembered knowledge. In between the repeated testing, of course, there is no further study of the material.

Repeated testing is the only way to estimate the measurement error of a test, and in real life we do not test repeatedly. But we can be sure that the error is at least several percentage points. For example, if a student scores 88 per cent, his true score may lie somewhere between 82 per cent and 94 per cent. It is good to keep this in mind when we use test scores to make important decisions or judgments about students. This brings me to the next section of this article.

The purposes and uses of tests

There are several possible reasons for testing students' learning, and I have listed the ones I could think of below. For each of these, one can ask whether tests really serve a useful purpose, and whether they serve it well. Here is a brief summary.

A test can tell me what my student has learned. The first section of this article has dealt with the extent to which a test can measure a student's learning, and the issues involved in improving its efficacy. It can tell me what my student has learned, provided it is valid and reliable. These two crucial qualities of a good test are all too rarely examined in children's academic tests, at least in India. I sincerely believe that it is a waste of a great deal of energy preparing students for an examination that one does not feel comfortable with. Either we in India should make efforts to change the nature of the examinations (toward which efforts are being made in some boards), or reduce the extreme emphasis on their results.

A test can tell the student what she does and does not know. True, but if the only feedback the students get from a test is a number, it cannot tell them much about what they do and do not know. Classroom tests that the teacher sets and corrects, giving necessary feedback, are more useful in this regard than the performance in the end-of-year examinations that is used to make decisions about whether the student can proceed to the next level or not.

At a broader level, the results of examinations are used to make decisions regarding admissions. This is called 'high stakes testing', and the way we make decisions about a student's future is questionable, to say the least. This is especially true in our country, where distinctions are made on the basis of a fraction of a percentage point. Test scores are simply not reliable enough to make such fine distinctions. There are other, more broad based ways to select candidates for an institution: these naturally require a greater investment of time, energy and imagination. It is so much easier to just use the number cut-offs, and anyway it appears as though institutions have bought into the notion that the numbers reflect 'real' abilities and 'real' differences.

At an even broader level, testing makes schools and teachers accountable, and can evaluate the educational system that is in place. But as an almost inevitable corollary, we fall into the trap of 'teaching to the test', and tests finally begin to shape our curricula. This insidious gravitational process trickles down right to preschool entrance examinations! Now schools that produce 'rankers' are considered to be good schools (although most of the time these ranks are maintained by 'weeding out' academically weaker students right from Class 9). But a recent survey reported in India Today (27 November 2006) indicates that all is not well with our educational system, in terms of our students' reasoning and creative problem solving abilities. This conclusion

was reached after constructing new kinds of questions and administering them to students from ‘good schools’, and finding that too many children could not answer them correctly. Whether one accepts the findings of the survey or not, it is valuable to re-examine periodically the tests and examinations we have come to put so much faith in.

What about those unfortunate side-effects of testing: comparison and competition? It is true that human beings have a ‘natural’ (a word I dislike using casually, but cannot elaborate on now) tendency to want to measure themselves, compare themselves with others, and try to outdo each other. Yet nothing latches onto that tendency and makes as much of it as the whole testing movement. Of course, by amplifying our need for one-upmanship and our fear of being left behind, tests motivate us to work harder than we otherwise might! At the end of the process, it could be argued that we will accomplish more than we otherwise might have. That is, some people will argue that testing and the whole carrot-and-stick approach that it has been reduced to, has yielded higher overall achievement and helped humans reach higher levels of excellence. I have yet to be convinced that: a) this is the truth and, b) that this achievement is worth the cost. Again, achievement is defined rather narrowly, in accordance with the goals of business and industry. As David Orr says so succinctly, ‘The relationship between education and decent behaviour of any sort is not exactly straightforward.’

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The 'Sameness' Curriculum

G. ANANTHAPADMANABHAN



We are aware of ourselves and act as individuals with distinct personalities. We see ourselves as members of a group, a kind of humans, a 'human-kind'. We also are aware of our shared humanity, a membership to the species, a 'sameness' as it were.

We invest an enormous amount of energy establishing ourselves as unique, separate from others. We develop our personalities and are emotionally attached to our personalities. We expect that others act in ways that take into account our personalities. Our friends are often those that 'know' us and are respectful of our personal attributes. We cherish people in our personal lives for their unique qualities. These are what make them lovable.

Much of our collective life is organized around group identities. Politically, the recognition of identities is very important and necessary. This is what enables societies to pursue affirmative actions, correct historical wrongs and most significantly respect the freedom of thought and

expression especially of minorities and other oppressed groups. We also recognize the dangers of 'human-kinds' as it were, especially their potential to lead to extraordinary violence. Looking around it is obvious that our 'human-kinds' are deadly serious in quite a literal way! Krishnamurti has pointed to the dangers of 'human-kind' consciousness repeatedly and evocatively—the dangers of thinking in 'us and them' terms. He has also pointed to the inner drivers of this kind of consciousness—the insecurity, fear and the need to belong. While there is wide recognition of the dangers of 'human-kinds' in the outer and inner realm as it were, the energy and passion that are invested in them prevent us from dealing with these dangers intelligently.

In contrast, our awareness of ourselves as members of humanity, our species, is not as energetic. We do not see that and rarely act from an awareness of our 'sameness'. Krishnamurti challenged us to see for ourselves and to give the children in our care the ability to see our 'sameness'.

To see that 'you are the world and the world is you'. That there really is nothing called your joy or your suffering but that your joy or your suffering is that of all human-kind. Krishnamurti points out that this is the fact; all else is a construct, an image.

Let us put aside for the moment the difficulties (much talked about, if I may add!) of 'seeing' this fact, and the fact that even the statement evokes responses in each of us which are really constructs in quite the same way as our personality. The question I want to explore then is at the level of the schools and how they would be affected if we acted with a consistent, even if only intellectual, awareness of this fact. To put it differently and more provocatively, is the pursuit of the uniqueness of each child, and putting that at the center of our efforts, actively hindering us in addressing the challenge posed by 'you are the world and the world is you'?

This question clearly has implications for both the explicit and the hidden curriculum. We could, for example, explore how the 'sameness' plays out in the content, the subjects that we teach. We could also look at what this implies for the ways we interact, which in turn collectively create the educational experience for the learner. This article focusses on the latter because it is the implied messages and learnings arising from the daily interactions that have a much stronger influence on determining how we see the world and ourselves.

The nurturing of individuality

Much progressive education emphasizes the fact that each child is unique. We claim to pay 'individual attention'. We speak of nurturing the individuality, of cultivating the special and unique capacities of each child. We rightfully detest the regimentation that comes from treating children as clay to be moulded or empty vessels to be filled.

Much of the daily life of the children in our schools is indeed an affirmation of their uniqueness. We ask them and pay a lot of attention to what interests them, we ask them what they really want to do and suggest quite strongly to them that they are different from others. This emphasis of the individuality serves a very important purpose. Pedagogically, this recognition of the individual enables us to help the individual learner learn in a manner that suits her best. It makes the educator responsive to the emotional needs of the individual student. It also socializes children and cultivates the very necessary skill of considerate behaviour towards others. It makes the young person feel valued, which is an important building block to the creation of a self-confident personality.

Talent seems to reside in the individual. It is generally accepted that one of the goals of education is the nurturing and cultivation of this talent. The conventional way of looking at this talent is to see it as

a source of pride for the individual, and by association for all those involved in cultivating and making an external 'success' of it. In our schools, as one of my colleagues at the school put it, we see the talent as an unique opportunity to look carefully at oneself, to explore as it were the nature of the self. Developing the talent often provides a joyous route to the self. Poetry, art, music, craft and even sport have this capacity.

The cultivation of the intellect is a process which, by the very nature of the intellect, individualises. Intellectual progress is very often based on difference and differentiating. The sharper the intellect, the better it is at this differentiation. In this area it is perhaps appropriate to be concerned with the particulars of each person's thinking and capacities. We see that individual tastes, interests, likes and dislikes matter a great deal. There are extraordinary capacities that need to be cultivated and talents that need to be nurtured. The need to find one's calling is, I think, an important one and it does focuss on the individual.

Perhaps, even in all these areas, which make up the unquestioned domain of the self, we are missing the 'sameness' dimension.

Discovering 'sameness'

In reality is one's talent one's own? Can my individuality be seen in isolation? My singing is a product of many things: my culture, my teachers and even my listeners.

An exploration of this could lead to an understanding that without the shared substrate of humanity, our 'sameness', individual talent would be meaningless. The same could be said for the intellect. It is obvious that all intellectual progress is a process of building on the thoughts and work of others and creativity is merely a new way of looking at and connecting existing ideas. We as teachers need to focuss our attention on the question of all the ways our individuality is really a product of 'not me'. This would, I suspect, be a very different conversation and potentially a fresh one that connects to a fundamental concern in our schools.

The realm of the emotions is more complex and interesting. Our emotions are ours and yet we share an emotional substrate with all of mankind. The energy that they release makes it difficult to develop any sense of perspective on these. Here, I think, personalising might be more than just missing the 'sameness' dimension, but in actuality it might be detrimental to living intelligently. It is perhaps far more important to understand the 'nature' of our emotions than the specifics that cause certain emotions to arise in the individual.

In my experience, the interactions about emotions at the one-on-one level between the student and the teacher are invariably focussed on the specifics. When students and teachers are sitting together in serious conversation and emotions are discussed, they tend to follow a process of

generalisation from individual experiences. This leads to thinking and abstraction, which drains the energy from the inquiry and never creates the energy to address the emotions themselves. Is there a way of pointing to the underlying substrate without doing either of the above?

If a young person came to me with a problem, carrying a sense of hurt, what would I do? I have done two kinds of things: helped the person look at the specifics of that hurt and through empathy

and perspective tried to make the person feel better, or alternatively to point to the nature of hurt itself, its connection to cultivating an image. But what if (imitating the Buddha) one asked her 'to get me a few mustard seeds from a person who has never experienced hurt?' I would like to suggest, in conclusion, that there is this whole dimension of 'sameness' that we could bring to dealing with most ordinary situations in our schools.

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Desperate Times and a New Order of Education

PATRICK FOSTER



Listening to my daughter's tenth grade history teacher at Parents' Night the other evening, I found out that California high school world history covers only modern history: the European Enlightenment, the French Revolution, world colonialism, World War I, World War II, the Cold War and so on up to the present day. Except for the Enlightenment—when Europeans actually began to question their own civilization in areas such as religion, monarchy, philosophical dualism—this is a history of the same old corrupt politics, militarism, capitalist expansion at any cost, polluting and socially abusive industrialism all of which we have become used to over the last centuries.

Why must we study the foundations of our present sick and dying worldview? What has happened to the exploration of far away times and places (such as the ancient Mediterranean, Buddhist and Jain India, Confucian and Taoist China), societies so different yet equally civilized and interesting. Their study couldn't help but force us to take a much larger view of things, including awareness of how dysfunctional our own cultures are?

Desperate times call for desperate measures, but teaching our children 500 to 2000 year old curricula (Greek math, classical literature, ancient religions, rote histories, formulaic science) completely robs the school day of time to explore more urgent matters. In the US, the government's solution to less-than-internationally-competitive test scores (and the presumed implication that we will lose our technological and hence economically competitive edge) is to take the last remnants of free—and hence creative and enriching and deepening—time and fill it up with basic skills remediation.

But this traditional curriculum has led to the status quo that we suffer with now. Besides, students don't learn or retain much of it anyhow. What

they actually learn are the prejudices of their parents, teachers, gurus, friends, television or internet reality, magazines and newspapers. So even if the traditional curriculum had inspiring messages, its presentation is lost to more passionate—even if false or biased—discourse outside of school.

I would guess that no educated, informed adult in today's world would doubt the dysfunction of our collective worldview. What we desperately need is to explore a new worldview. And this will seem overwhelming and ridiculous (individuals actually creating a worldview!) unless we go about it wisely. By wisely I mean in manageable steps and negatively.

However, this is really a rhetorical question because we all know—if we read newspapers or watch TV news—that our current worldview in fact leads to disorder, violence, injustice, and exclusion.

The first step is to acknowledge the corruption, disintegration, and failure of our values, problem-solving measures, and truth-finding behaviours. And this is done by simply asking whether or not these help lead to universal order, security, compassion, justice, freedom, sustainability, inclusion, and tolerance. However, this is really a rhetorical question because we all know—if we read newspapers or watch TV news—that our current worldview in fact leads to disorder, violence, injustice, and exclusion. Revenge, selfishness, symbolic satisfaction still rule the individual, the family, the community, the nation.

One must not refrain from this critical appraisal because there is no viable alternative in sight or because any change other than window dressing will upset the local, national, and world economic or social order. Critical examination of reality must happen in order to create psychological space for the new.

The next step is to look at our current beliefs and assumptions to see where they fail us. In my own research, the very issue of belief vs. evidential thinking is a large aspect of both traditional and modern worldviews. Humans have painstakingly worked out ways of reason to survive and prosper in their material environment, reason that should also be used to sort through their non-material superstitions and projections.

But for all the progress of the institutions of reason (science, mathematics,

logic, philosophy, engineering, democracy, the open society, the material arts, etc.), there is a parallel, interfering, and often debilitating, shadow of the irrational. A large part of this reason-undermining behaviour is our clinging to beliefs that carry no evidence for their truth.

The scientific and philosophical concept of truth—which took millennia to perfect—is of a universal and unequivocal fit with reality. An idea or perception is true (or as true as we can have it) if it conforms to structures in the real world as shown by observational, experimental, or logical evidence. With no evidential support, we really have no idea if an opinion agrees with reality or not. This is not academic theory; the way we do almost anything, from riding a bike to choosing our food, follows evidence. Traditions of religion, of mind, of spirit typically carry no evidence for their truth; they are believed in on the basis of authority (a holy book, a lineage of saints, parental indoctrination, a seemingly universal worldview, etc.).

Right now in the world, a ‘superpower’ that thinks it is rational (although its politics, economics, and militarism carry deep irrational flaws) is fighting a small nation whose entire society is based on religious tradition. On all sides we have lost the path of reason, the way to evidential truth.

Because there is no reliable evidence—past, present, or possible—supporting any religious belief system, there is no way to deem them true or false. They all assume they are uniquely true. But our most basic logic—that something cannot be all black and all white at the same time—dictates that only one of a group of contradicting beliefs (and all religions contradict each other) can be true. But with no possibility of evidence weighing in any direction, we can never know which belief tradition is true. And religious traditions go on killing, not out of pursuing truth but rather out of unreasonable blind faith.

So, for me, the significant lines of contention in the world lie between irrational traditions (that support their ‘truth’ with false history, illogical theology, inflated hagiography, and psychological projections) and rational traditions (that support their ‘truths’ with tangible evidence, logical inference, and coherence with existing realities).

Throughout history, irrational belief systems have not respected individual humans, animals, or the earth, usually because their goals are beyond this material world. For them, the physical earth is meaningless and only to be used in a struggle for salvation in another realm. Yet the earth and all its wonderful dimensions is truly meaningful: mysterious, beautiful, fecund,

familiar, and after all, our home. It is an odd creature that is so alienated from its living context.

What better curriculum for schools could there be than the honest examination of our failed paradigms and the creative exploration of a new worldview.

Furthermore, we can derive an entire human ethic from the nature of visible creation. On a planet with limited resources and innumerable species and individuals that seek personal survival (if only in order to reproduce), the reasonable course for humans is to strive for fairness—so everyone gets at least minimal needs met. And logic can then help us determine which behaviours and institutions might facilitate fairness. But this determination must be made in an open discussion amongst all of us. What better curriculum for schools could there be than the honest examination of our failed paradigms and the creative exploration of a new worldview.

Perhaps we would still need to retain some schools that teach the skills needed for economic competition—not because this violent international competition is a good thing, but because we will need transition time with some degree of economic order. But we should begin pilot schools, elementary and high school and post-secondary that focuss on the deep intellectual needs of our time.

And if schools dedicated to worldview exploration fail to teach the survival skills needed in the status-quo set up, then rather than give up on this urgent exploration we need to facilitate survival in a different way. Perhaps we should look at survival as a species problem rather than that of an isolated, alienated individual, and help students survive by not playing the corrupt social game. Collective buying or renting of property with homebuilt living quarters, homegrown food, community cottage industry, least-expensive alternative energy use, alternative health care, etc.—all these could support a community of worldview explorers. This could constitute a school or a post-school living community.

The Krishnamurti schools, of course, have committed themselves to providing an open critique of society and of individual consciousness, on the basis of his teachings in that direction. But all of his schools are still college-preparatory institutions teaching the traditional curricula of the current dysfunctional worldview. That worldview with its constituent paradigms

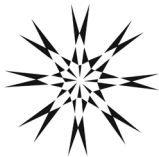
and corresponding ethos is obsolete. Its death-throes take the shape of the increased violence, corruption, and insanity extant in the world today.

Within the ashes of this civilization lie the seeds of the future worldview. Rather than standing by and lamenting the end of the civilized world (it hasn't been very civilized anyway, has it?), wouldn't it be more interesting and creative and wonderful to be a part of creating this new worldview? This should not be a sidelight but rather the essence of a school appropriate for these times. Krishnamurti's teachings are a first step in this creative act, but the next steps must come from us—students, teachers, parents, administrators, vitally interested community members.

When the ancient Greeks (and ancient Indians) began to construct their worldview—and construct they did through their epic poets, lyrical poets, architects, sculptors, politicians, mathematicians, and philosophers—it was such a time of joy and excitement and open exploration. Instead of trying to squeeze our satisfaction out of over-stimulating entertainment, we might draw real inspiration and profound accomplishment from working on a more reasonable direction for humankind.

I invite the Krishnamurti schools to truly radicalize their goals and curricula...and finally begin to fulfill the purpose of their founding and the vision of their founder.

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The Idea of Santiniketan: A Personal Understanding

PULAK DUTTA



One of our friends who comes from a nearby village reported that the first thing a new headmaster does to make his presence felt in a village, is to paint the school building and then expel a student! He told us the story when our own school building was being painted at the time of the joining of a new principal. A 'face lift' of some of the Santiniketan buildings was taking place, before the visit of some VIPs. As the word 'face lift' suggests, only the sides of the buildings that would face the VIPs were painted! For the people who live there this felt really ridiculous.

This, to my mind, reflects a structure or movement of thought which is linear or one dimensional. Linear thought process produces linear communication and necessarily ends up in a one-way communication. It does not leave any space for a dialogue.

The space arrangement, the positioning of different buildings or activity centres in Santiniketan was originally designed in such a way that incorporated dialogue, and encouraged human interaction between

the community members. Students' dormitory, kitchen and dining hall, library and research centre, auditorium and outdoor classes were all situated around the play ground. One can still see this structure of the original Ashram. It was impossible to move from one place to the other without encountering either the cooks singing as they chopped the vegetables, or see a part of a mural taking shape, or a football match between students and staff, or chance upon a Bidhushekhari Shastri or a Nandalal Bose.

This circularity of space arrangement with shifting and multiple attention centres was also applied to the individual activity centres or buildings. Rooms in the students' hostels were not placed one next to the other in a linear spatial arrangement; they were placed in a circular fashion around a courtyard. It was impossible to ignore the presence of the others. Although the individual buildings did have a front, they did not have a frontal presence. All the sides of the buildings were as welcoming, functional and beautiful as the front.

Students sat in a circle in the class and as a result the ‘frontality’ of the teacher was challenged. There was a constant flow of communication or interaction between one another. This is also one of the fundamental qualities of the early Santiniketan murals and environmental sculptures. They did not have a frontal, framed or focussed presence.

We find a parallel of this cyclical movement in Indian music in general and Indian classical music in particular. Rabindranath Tagore used the *sthayi-antara-sanchari-abhog* musical structure of Dhrupad as the foundation for his songs. Structurally it breaks the linearity of the movement, and in performance, becomes *sthayi-antara*, returning to *sthayi*, moving on to *sanchari-abhog*, and back again to *sthayi* to complete the cycle. The time cycle or *tal* system in our music is also necessarily cyclical. Smaller spans of time cycles operate within the larger *sthayi-antara-sanchari-abhog* structure, like the earth spinning and revolving around the sun at the same time.

Brahmacharyashram

Rabindranath started his residential school at Santiniketan with five children on 21 December 1901. It was founded to create a free and fearless atmosphere for children to grow up in, in close contact with nature. They were encouraged to grow as complete human beings. Gradually it became a community of students, teachers, workers, and occasional visitors. Santiniketan

eventually came to mean a particular way of life. A dynamic community—constantly changing, incorporating, discovering, searching and suffering—Santiniketan was never meant to be a fixed ideal.

Right from the beginning there was a spirit of self-governance and democracy. In 1912 Rabindranath established a unique institution called Ashram-Sammilani. It was a body of elected students—very often misunderstood as a students’ union, with teachers-in-charge, to look after the functioning of the school. Generally students’ unions are primarily concerned with student interest; they—or any other union for that matter—are formed to protect their rights against the authority’s misuse of power. In this case, however, all the teachers and students were its members and their central concern was the school or the Ashram. There were forums for academic discussions from the early years of Santiniketan. The first of its kind was probably the Sayang Sabha in 1905 where all the teachers met every evening. They discussed literature, social sciences and politics. In 1911 the Prabandha Path Sabha was born where papers were presented on literature and the sciences and discussed by specialists. Meeting for the students’ Sahitya Sabha was a regular practice from April 1910. Students read out their articles, stories, poems and sang songs.

It is well known that a lot of festivals were and are celebrated in Santiniketan throughout the year. The first was Paush

Utsav in 1890. It was a religious festival and was also called Brahmotsav. The fourth annual Paush Utsav in 1894 introduced a fair as a part of the festival. Along with the local people putting up stalls and selling their wares, there were Jatra performances and a fireworks display after the evening prayer. But the most successful festivals were those that invited and celebrated the seasons. These were totally secular in which the whole community participated in the process of seasonal changes. On 18 January 1907, Rabindranath's youngest son Shamindranath took the initiative to organize a spring festival. The following year Rabindranath asked Kshitimohan Sen to organize a monsoon festival. Rabindranath could not be present for either of these festivals; but their description enthused him so much that he immediately started writing a drama to celebrate autumn! This is probably how he started composing seasonal songs. Several autumn songs were composed that year to become part of the drama *Sharodotsav*. Two new festivals were introduced in 1928—*Briksha Ropon* (Tree Planting) and *Halakarshan* (Ploughing). Many other festivals have been added on since then. These celebrate the flow of life, nature's fertility and ever-recurring youth, and the Bangla New Year. Even the annual convocation, *Samabartan Utsav*, is a festival. On the one hand, these festivals created a platform for everyone to come out of their private spaces and meet others to do something collectively. They also created a platform for culture—be it poetry, Vedic

chanting, music, dancing or decorating—and turned the practice of culture into a part of living rather than a process of producing objects to consume.

Art and life never meant two different things for Nandalal Bose, Surendranath Kar and their students who planned the decoration of the festivals with amazing mastery and creativity. Visual elements normally create the ambience whereas music has a quality of direct emotional communication. Rabindranath himself was one the greatest composers of all time. Many of the songs he composed for this purpose were simple enough for everybody to sing and the whole community did sing together as it does even today. Those who have been in such situations know the tremendous sense of participation that it is capable of producing.

Visva Bharati

Pandit Bidhushekhari Shastri joined the school in 1905 as a Sanskrit teacher. He believed that old Sanskrit *tois* and *chatuspathis* had lost their relevance in contemporary society. Keeping our own education and knowledge as the fundamental basis, we needed to study other streams of knowledge produced by human beings everywhere in the world; if not, our education would be untrue and incomplete. By rejecting alien culture we make our weakness and poverty look ridiculous and irritating. This was against the Nationalist position which postulated a difference from, and rejection of, anything

alien. For Rabindranath the primary function of universities was the production of knowledge; distribution of it was only secondary. Thus the idea of Visva Bharati was born. The foundation of Visva Bharati (The Santiniketan University) was formally laid on 23 December 1918 and it started functioning from 3 July 1919.

Visva Bharati started functioning as a centre where scholars, artists, musicians came together and got involved in collective creative activities. They were teaching and learning at the same time. Departments of Fine Arts, Music, Literature, Religion, Language and Philosophy were established. There was no prescribed syllabus or curriculum, nor was there any degree awarded. Every teacher learned something other than his/her own subject and every student had to give lessons on his/her own subject. The university was divided into two sections. 1. Purbo Bibhag, the school section and 2. Uttor Bibhag, the research section. Visva Bharati as an institution or Santiniketan as a community were fundamentally concerned with living. Living was not about the practice of power but about the discovery of the humane. By living, therefore, one does not only earn food but more importantly earns 'truth'.

Rabindranath never thought of education in terms of rural or urban or suburban education. For him education was about exploring the full potential of the human being. Therefore the kind of education he was offering in Santiniketan

did not fulfill the expectation of the elite who were looking for an effective transfer of knowledge and information which would prepare their children to fit uncritically into the existing social order. There have been a lot of experiments done on the techniques of this 'effective transfer' all over the world, like doing away with the examination system or teaching under the trees or creating an atmosphere of so-called 'freedom'. However, the underlying concerns have remained the same. Unfortunately, this has come to be known as 'experimental education'. Santiniketan never wanted to become an employment generating institution. It aimed to create an atmosphere where children would learn to respond to the world around them without any resistance, to create a mind that is alert, questioning and creative. Therefore it did not have a fixed system which was to be followed strictly. Systems and techniques evolved, changed, or were thrown away in response to the situation and context. Clearly, this is not what the elite would want for their children and it was under their pressure that Rabindranath had to accept a few systems and techniques he was opposed to; otherwise as he put it, 'nobody would have been in my school'.

Siksha Satra, another school within Santiniketan, was established on 1 July 1924. The first six students from nearby villages started getting education through the kind of traditional knowledge and skill they were involved with or familiar with.

Traditional crafts like cooking, farming, weaving, brick making, and pottery played the central role. It was craft in the real sense of the practice—not limited to its decorative, superficial form. The emphasis was on its fundamental function, that of making living joyful and beautiful. Rabindranath himself was quite enthusiastic about the experiment and thought that what he had not been able to achieve in Brahmacharyashram (later called Patha Bhavana), was taking place here. Siksha Satra was shifted to Sriniketan—Visva Bharati’s rural reconstruction centre in 1926.

Towards a Harmonious World

Self-organization or self-reliance of society had always interested Rabindranath. He believed that in our country the *samaj*

(community) was not ruled by some outside force, it was ruled by itself. And this is what he called the *swadeshi samaj*. This was possible because the *samaj* was constituted by self-regulated individuals. It was grounded on what he called *atmashakti*. A functioning of a community of this kind was possible by exploring inner strength. Santiniketan, to my mind, attempted to create a similar kind of *samaj*. And it is necessary to remain small in size to sustain the harmony of such communities. Surely it should be possible to create a harmonious world with many such independent, yet related communities or *mandalis*, perhaps like many planets spinning and revolving around the sun at the same time.

Pulak Dutta taught Art and Music at The Valley School, Bangalore and now teaches at the Department of Graphic Art (Printmaking), Kala Bhavana, Visva Bharati, Santiniketan.



Meeting Life

A landscapes and life skills course

INTRODUCED AND COMPILED BY STEFI BARNA



This article is a description of a Landscapes course offered in 2006 and 2007, from December/January to April/May, to a group of young adults. The first three months were spent in Kerala, at and around the Gurukula Botanical Sanctuary. The final month of the course was held in Munsiri, in the high Himalayas. The descriptions below are in the different voices of the people involved in the course. - Editors

Introduction

Each of us is part of a landscape, wherever we happen to live on Earth. Not merely a landscape of shapes, colours and textures, but a living landscape, with its web of countless creatures interacting passionately with each other and with the physical environment. Nothing ever happens in isolation. There is the mineral substratum we walk on and out of which our very bodies are made. There are geological processes driven by the energy inside the earth; there are local and global climates, resulting from the interactions of earth and sun; there are the myriad creatures that, like us, grew out of star dust, and were fashioned by climate and interdependence, into those intricate, wonderful adaptations of form and function. And there is mind, omnipresent and ever elusive. All these come together to form what we call a landscape, with all its beauty, its complexity and its problems.

Each one of us has an impact on our landscape, whether we sense it or not. In our civilization we prefer to remain blind and deaf to this role, and are irresponsible in its disregard. Yet it becomes obvious, by taking a careful look at the world, that what we are creating are landscapes of sorrow. This is certainly not a result of a lack of knowledge, but a lack of relationship and care. We are a society ready to disregard life in so many ways, for mundane achievements well beyond the legitimacy of survival.

For a few years there had been talk of it between friends: of creating a field-based course in skills relating to nature and the land, developed around a hands-on study of the intertwined dimensions of the big picture and the detail in two different environments. Suprabha Seshan and the crew at the Gurukula Botanical Sanctuary were involved with plant conservation, habitat restoration and education in the Western Ghats of Kerala. Malika Viridi's team was concerned with rural development and nature conservation in the high Himalayas of Uttaranchal. Over the years both groups had come to embrace their environments and communities wholeheartedly, and to feel the inescapable responsibility for a common welfare. The Landscapes course was thus intended as an apprenticeship for young adults who have decided to steer their work and lives towards a healthier relationship with nature, and to take on a more constructive role in our living planet.

What should the course offer? It should include essential tools for understanding a landscape in its local and global aspects and for working wisely with it—tools developed by engaging thoroughly in specific landscapes, but also universally valid. While knowledge content is important, the crucial challenge remains to nurture the aptitude to be open to the living landscape that we are a part of; to engage with it and learn about it. Learning should come as an act of relationship. One attribute of the course is that all learning will happen in direct contact and participation with the creatures and things we learn with and about, and those we live with and around. In such interactions you discover facts about them, and vividly so. However, you also establish a deeper connection that sooner or later may reveal a beauty that is not reducible to knowledge and memory, yet seems to hold a deep meaning for life and action.

The places

Wayanad: The Wayanad plateau is a shoulder off the great serried ranks of the Western Ghats of southern India. With its high rainfall and varied topography ranging from 700 metres to 2100 metres, the plateau supports forest types ranging from dry deciduous bamboo brakes to tropical evergreen rainforests and the unique and endangered shola grassland system at higher elevations. Seventeen tribes have lived in these forests for millennia. The Gurukula Botanical Sanctuary, a 55-acre forest garden, is located in the wettest corner of the district, receiving over 500 centimetres of rainfall annually. The sanctuary

is a working laboratory in plant conservation and habitat restoration, bordered by a young river and the Periyar Reserve Forest. More than 2000 native plant species can be found in and around the sanctuary lands, along with an extraordinary array of animal forms. A team of gardeners and naturalists live and work here, whose central concern is to bring diversity and health back to the fragile and rapidly eroding tropical mountain environment of the Western Ghats. Life at the sanctuary introduces participants to a way of life and environmental action intimately connected to the plants, animals, people and ecosystems of this region.

Munsiari: The Gori river basin, at the junction of the Western Himalayas with the Nepal (Central) Himalayas and the Tibetan Plateau, offers altitude gradients from 560 metres above the sea to over 7400 metres, 32 glaciers, forests and grasslands that range from sub-tropical to Alpine, and an astounding diversity of plants and animals. Human habitations spread across this landscape—shared as it is with other life forms—and the land-use of the local communities form interesting mosaics that constantly set the ‘timer’ back on succession of species, revealing interesting inter-linkages. This is an opportunity to see and experience the elements and dynamics of mountain ecology at a landscape scale, to learn wilderness skills, and to live with local families.

Below are the other voices:

The experiences

The origin and evolution of everything

I was with the Landscapes course for the initial six weeks. The ‘apprentices’ arrived together on the first day to enter the sanctuary’s family. They shacked up somewhere—a tent, a tree platform, a shed—and took on their share of daily work for the place. One of the course intentions was to get our bodies more fit and awake, and so we began straight away with a daily, early routine that included yoga, jogging or strength exercises. Classes started with lying down on top of the water tower to allow us to take a comfortable look at the universe and begin figuring out our place in it. Over the following five weeks we took a big sweep at the global picture of our

planet. Its origins from cosmic dust, the formation of the continents, the origin and evolution of life on earth, the evolution of homo sapiens and the human mind, the spread of humans on the globe, the beginnings of civilization and the role of climate in all of this. We could only scratch the surface, but we made many connections and opened our eyes to the large issues affecting the natural scene. On and off in the evenings, we studied and discussed current issues affecting the global and the local, keeping an eye on our own role in the changing landscapes.

Lorenzo Castellari

A short history of human-environment relations

Over the space of a week, the students and I explored some aspects of the relationship between humans and the environment over the past millennia in the Indian subcontinent. The course emerged as a ‘patchwork history’ based on primary material from particular periods in Indian history. As we proceeded, jumping from one period to the next, we created a rough, collective understanding of themes and issues and questions that arose. For the pre-historic period we reviewed how the subcontinent became populated and looked at early archaeological evidence of tools and rock shelter paintings. We studied the stories the Indus seals tell us about the pre-Harappan and Harappan times. For the Epic and Mauryan periods we read excerpts from ancient texts and pondered over how a variety of characters positioned themselves in their surroundings. We also looked at the relations between groups of people and accounts of attempts to settle different groups of people and tame and appropriate the landscape. Then we tried to derive an understanding of the extent of forests, of description of terrains, profiles of forest-dwellers, pastoral tribes and agriculturists of the Mughal period from memoirs and travellers’ accounts. We also looked at the continuing theme of tension between cultivators and forests. In the colonial period we looked at the contexts of early exploitation of forests as well as the genesis of the Indian Forest Department and the early Indian Forest Acts. We viewed the structure, working and concerns of the forest departments through the writings of early foresters. Our discussion touched on multiple aspects of the colonial

enterprise: sedenterisation, forestry, irrigation, control of big game and varying contexts in which the landscape was understood and controlled.

Finally, having dwelt on forestry issues, I introduced the theme of the politics of water. I presented a short account of colonial irrigation to place big dams and irrigation networks in a historical perspective. The ensuing discussion was lively, placing concerns in the wider context of notions of ownership, international aid, functioning of the bureaucracy, planning and decision-making processes, and consumption. I greatly enjoyed the spirit of collective engagement that unfolded in the five days of these sessions. Students played an active role in culling themes, posing questions and giving shape to a joint understanding.

Diba Siddiqi

The forest and fauna

I had a wide and varied involvement with the Landscapes group. It included exploration of the forest, classes in natural history, independent projects, and community work.

Every week we went for walks in the forest that I have grown up in. My question to the students was: how do they relate to this earth, to nature, and is it possible to look together at how we engage with, or perceive our surroundings? There is a need to question our relationship with nature because we, as people, have lost touch with the earth and this leads to all the destruction that we see today. I wanted us to work together, find a way to get in touch with nature again and feel that we are indeed part of it, to bring about a sense of affection—to feel comfortable in the wilderness. It was likely that a sense of responsibility could arise out of this.

We started by talking about ways in which we engage with our surroundings, using the example of a birdwatcher, a hunter, or a farmer, all of whom relate to the land in different ways. Is there something basic or common to all these different ways of engaging?

Then we came to the senses. Can we use our senses to perceive our surroundings in a non-judgmental way, to question and watch our responses and patterns? For example, when we look at a bird there is a series of ideas, information and responses, which seem to place our relationship with the bird mostly in our head. Is it possible to look at the bird without thinking that it is

‘beautiful’ or giving it a name? This is a very difficult thing to do. Our listening is very shallow because of all the thoughts that go through our minds. The same is true for looking, or any other kind of perception. To watch this pattern and to give our full attention outward is the beginning of a space or a chance for us to have a deeper understanding of ourselves and the earth.

I did various exercises in using our senses intensely. We always started with guided sessions of listening or looking, as a kind of initiation, or preparation, to going into the forest. This was important as a lot of quietening down happens in this process. Later we walked together trying to be open and aware of our bodies and mind. Once in the forest we would separate for about an hour for different activities. These included walking, touching, smelling, crawling, sleeping, sitting, running—to see if one can respond to the ‘place’ through movement, art, or sounds—to act without preconceived ideas.

It was difficult at first for me to get my ideas across and I had to ensure that we did not spend too much time talking, or too little. There was a flow after the initial days and it became a process—of working, talking together and taking things deeper. There was a sense of joy and playfulness during this time but also seriousness.

In our natural history sessions we took a more knowledge-based approach to field studies of the vertebrates and invertebrates living in our area. Together with Shyamal Lakshminarayanan we spent several weeks getting a feeling for their evolutionary path, life cycles and morphology. We then went out to look at them in a range of habitats and learned how to identify various species.

Sandilya T.

Excursions: Introduction to landscape ecology and the world of plants

Ecology is a discipline that demands direct engagement with the great outdoors. Landscape ecology involves taking the ‘big picture’ into account. Each area, each community of creatures, each braided bundle of biotic and abiotic processes is better understood when you place it in the context of its larger setting. The latter consists in itself of two strands: first, the surprising intricacies of the natural world and second, human connections to those intricacies. Our excursions into the wider landscape are a fusion of the above. They are founded on a few simple principles:

1. To perceive the connections you have to traverse the land and come alive to it. There is nothing like getting out for several days, wandering around a special place, looking at it from many angles: from cliff tops, valley bottoms, sandstone caves, granite massifs, through thick trees, over the meadows, from the cool creek within as it slices a chasm through the plateau, from the perspective of a mountain goat, or a bison or a vulture wheeling high above.

2. Observations and questions spontaneously arise during this traverse. Talk about it, reflect upon it, create your own science, your own unique awareness.

3. Walking long distances together, engaging with the outdoors in communion creates a meta-awareness. You teach me about birds of prey. I show you the rocks. He reveals to us the trees. She asks: why is this all like this? The nomadic instinct reawakens in us. We wander, taste, swim, climb and explore. And then together we discover big patterns that conjoin the terrain with the wind and the ooze of water and the cloak of green. We discover that it is all ineluctably connected. And in this expanding awareness we become one being, with many sets of eyes, with multiple sensibilities, with a shared understanding. By the end it is hard to tell us all apart.

Excursions collapse the distance between theory and observation. An excursion is an intense experience, twenty-four hours together every day for several days: exploring wilderness, ecosystem ecology; watersheds and geology, climate, weather, the work of the monsoon; vegetation, flora and fauna, anthropology, forestry, conservation biology. A compendium of information is harnessed in a very short period of time. And simultaneously, unknowingly, you are fitter, more nimble; fleet of foot and sharp of ear. Even your nose becomes an indispensable guide in this new terrain. Like bears, you feast on sweet ripening berries. In fact you are led from one cornucopia to another. Landscape ecology yields edible treats like no other.

You also gather new vistas into each other, each individual rich with nuance and pattern, now hidden, now exposed. We learn much from each others' tread and speech, the things we spontaneously respond to, the things we fear.

Every place is alive with the story of human beings who have been there before you. Their values talk to you today. You follow the spoor of by gone societies as you do the spoor of porcupine and tiger. Their actions continue

to unravel their impact on the terrain and on the vegetation, on the water courses, on the things that live here. Your story today is shaped by theirs then.

And thus, walking creates its own environmental ethic. You realize your story today will undeniably shape the future to come—of humanity and wilderness. Of all life.

In the landscape ecology excursions students had the chance to explore two areas of the Western Ghats: the first as part of a bird survey organized by the Forest Department in the Siruvani Hills lining the Attapadi plateau, and the second to Mukurthi National Park at 2400 metres to explore the shola grassland ecosystem (high elevation tropical montane). We also had the privilege to be guided by Pradip Krishen, tree specialist and monsoon forest naturalist, to explore the Satpura hills in central India, a window into monsoon forests defined by a seasonal aridity more marked than in our wetter Western Ghat biome.

In addition I introduced students to the world of plants at Gurukula Botanical Sanctuary, at Mukurthi National Park, and later in the Satpura hills of Madhya Pradesh. Questions explored were: How does the structure of wet evergreen forest type differ from the montane shola grassland type? What are life forms, and how are different life forms represented in different ecosystems? What are some of the common plant species in each forest type? What is the biogeographic affinity with the Himalayas? What is the effect of altitude on vegetation type? How were the Western Ghats formed? What cycles can we perceive in new growth, maturation and senescence?

Many of these questions found their way into our Satpura excursion with Pradip Krishen. The Satpura landscape is valuable because it provides connections and contiguity over an extensive wilderness area that features dramatic tablelands, clusters of peaks with varied vegetation and wildlife typical of both tropical dry and moist deciduous forests. We were introduced to trees of the region and our knowledge of botany grew by leaps and bounds. We learned a lot more about water, and its profound impact on vegetation type. Water is the single most limiting factor in this region, but topography and altitude conspire to create perennial streams that chart their course in deep shady fern-filled gorges.

Both in Satpura and Mukurthi we had the chance to relate with forest department personnel and to look at policies regarding wildlife, tourism,

fire, exotic invasives, poaching, resettlement and encroachment, a slew of forces often in conflict with each other. We learned that the management of wilderness is a whole discipline in itself, reflecting the values of the time, of each shift in our collective understanding and perception of the natural world.

Suprabha Seshan

Himalayan Landscapes

Over a period of five weeks we studied many aspects of the Himalayan landscape. To understand the differences between alpine, temperate forest and riverine ecosystems we visited various elevations to see the changes in habitat conditions, flora, fauna, their linkages and the history of succession and climate of each place, and to gain an introduction to the trees, shrubs, herbs, animals, birds, reptiles and fish of these landscapes. We then observed the centrality of forests in the survival and subsistence of mountain communities. To learn about sustainable land use we compared forest ownership and governance by the State (Reserve Forests and Sanctuaries) with ownership by the community (van panchayat), and the pressures on land use and life forms as a result of a rapidly changing global market economy.

Living with local families in a structured home-stay arrangement facilitated an orientation to mountain cultures and livelihoods (tribal and non-tribal). We learned about working on the fields to prepare and plough the land, the seasonal agricultural activity of potato and vegetable sowing, farm animal care, and collecting produce (fuel wood, fodder, medicinal plants) from the forests. We encouraged the students to learn skills such as weaving, wool dyeing, bamboo work, drumming, wood cutting, house building. We also camped in alpine and temperate areas, learning to live off the land, and developing wilderness safety and survival skills.

Malika Viridi, K. Ramnarayan, Emmanuel Theophilus,
Bhavna Kandari, Abhijit Menon Sen

Reflections on the course—student voices

‘Over the past four months we have been exposed to a different way of looking at, interacting with and relating to nature. We have been living with

and learning from people who are not merely talking about sustainability but actually making a serious attempt to live sustainably. For example, we participated in growing the food we eat, carrying the firewood we cook with, collecting the coffee we drink. This has given us the opportunity to recognize the many processes that go into supporting our lifestyles, unlike in the cities where someone else is doing most of this work, unseen by us.’

‘While learning about plants, reptiles, birds, amphibians, or insects, we began by pooling together what we knew about them and then going out and looking at them in the field, reading about them together and sharing our questions — like friends sharing information that they care about.’

‘An important aspect of the projects we did was that they were fuelled by our own curiosity and energy and not directed by someone else. Learning this way created new interests and organically developed new skills.’

‘The course got us thinking about how and where we fit into our landscapes. We spent a week in Pachmari to study the local forests, so different from the tropical rainforest we had become familiar with.’

‘The experience made me open up and more willing to try new things and to explore new windows that I and others around me had closed. The surroundings just made you want to try out all the new things, it didn’t matter if you were good at it or not. That really does make you a happier person.’

Stefi Barna has worked at Brockwood Park School, UK and The Valley School, Bangalore. She works now at the Gurukula Botanical Sanctuary, Wayanad, Kerala. For information: Suprabha Seshan—gbsanctuary@vsnl.net, Malika Viridi—malika.virdi@gmail.com



Teaching Creative Writing

GEETA VARMA



When I began my career as a teacher, my students were middle and senior school children. I taught them English. I also had a weekly class with the Kindergarten children—story time. I had no idea how to speak to them. I imagined myself playing with them, petting them or listening to them, but not addressing an entire class of little ones. The first day when I entered, they were all playing in the classroom. Some of them came to me when I smiled and asked me if they could sit on my lap. When I said ‘Yes’, they were happy. Everybody wanted to sit on my lap. I was a little worried as I was not sure of the consequences. But there was no choice. Soon the bell rang and that was it.

The next week, I thought of telling them a story, but only ended up imagining I had, as there was no appropriate response. Most of them were all over the place and immersed in their own worlds. Their questions were not in the least related to my story. It was a relief when the bell rang.

The next week, I went with a definite plan. When I began the story session, I started including their names. This made a difference, though it meant including everyone’s name. Part of my problem was solved. The story required a situation that could include them or their loved ones, especially their parents and grandparents. They liked birds, animals, the moon, little incidents that included their anxieties and happiness, beautiful things, toys, a little bit of fantasy... I had to include their suggestions as well to make them happy. It became a delightful time for me. They were full of love, easily satisfied, very sweet, besides giving me a beautiful exercise for my brain. We enjoyed the time together.

That was the beginning. I applied this while teaching the older children as well. I had to find topics close to their heart, give them a lot of freedom,

be non-judgmental and encouraging and, at the same time, teach them. Most children are frightened of red ink, especially if there's too much of it. They like comments or remarks. They are extremely conscious of language rules. All these form a mental block, leading to what can be called a writer's block. Therefore, my remarks encouraged and highlighted their creative ideas; I corrected using a pencil, asking them to rewrite if they wished, and read out or display their writing on the soft-board with coloured illustrations. They had to feel the freedom to express their ideas fearlessly, understand the space that allowed them to explore while learning, and that the quality of the content was not entirely based on language rules. This way creativity gets focussed, children find adults more approachable, besides being satisfied with their own work. The challenge again was to find activities and ideas that would interest them. This became, and continues to be, a fascinating aspect of my work. There is always a challenge, adventure, learning, enjoyment, in the journey through every class. The outcome remains a mystery till the end. It could be amazingly beautiful, incomplete or chaotic as plans very often don't work, but never unfulfilling in the long run. Besides, children find their own pace, there is no syllabus or time-bound restrictions, no immediate target or expectations to trouble their minds. The teacher has to remain flexible, ready to change plans as required, sensitive and accommodating.

Once, I planned an exercise out of sheer curiosity to know how they would analyse a picture. It depicted the underlying theme of the Mahabharata in modern art. I was early for the class and in the library, I found another scene from the epic painted realistically on the back cover of a magazine. It was a coincidence. I picked it up. In class, each child commented on what they felt or understood about the first picture. I gave no inputs, but they came up with all the ideas the epic offers. It was surprising because it was way beyond my expectation. I passed the second picture around. They articulated every character's emotion — again, amazingly exact. They almost had the theme of the story without being told, and understood the feelings so well! After this exercise they wrote stories, poems or drew pictures as they wished.

Generally, I tell them a story followed by an exercise or activity, which includes writing, drawing, painting, creating a theme collage, wall magazine, and maintaining a scrap book. After an exercise to make them sensitive to their surroundings, I once asked them to complete the question — Did you...? The class poem that emerged was this:

Did you see/ hear –
A book without a cover?
A leaf fall quietly in the afternoon sun?
A dragon pass by?
My lost pencil box?
A mysterious camera?
The stars yesterday night?
My brother and my puppy?
A man with green hair wearing a pink jacket and purple trousers?
A wolf howl in the moonlight?
My pet snake Jake?
Mademoiselle Lallob blast her head off at the poor kids?
My parents somewhere?
A flower nodding in the breeze?
A sparrow fly into her nest and turn her neck?
A pup lost in the mist wagging its tail?
My grandma day-dreaming with a cup of tea in her hand?
My friend as pale as a moon in daylight looking for me?
A butterfly, light-winged, carrying a bag of stones?

It was a rainy day just after lunch. As I entered the class, I could sense the excitement. The sky was overcast, the gathering thick clouds darkening the otherwise bright landscape, and the violently shaking treetops sprinkling showers of raindrops from the leaves, lush and dark. I was looking forward to a lovely poetry time. But the class wasn't in tune with my mood. The classroom was in a mess. The floor was wet and muddy. Obviously they had been running out into the rain. Books were scattered. So were the chowkies. They were full of requests—'Akka, a spooky story...', 'Let's play', 'We'll close all the doors and windows...' etc. As I tried to quieten them, I was thinking of a story I could tell. I wrote down on the blackboard—Quiet. I'll wait outside till you are ready for a story. I went and stood just outside the door, watching them settle. Some of them wanted to write limericks. Some were gesturing

to me to enter. By the time they settled down, I had lost what I had in mind. Anyway, most of them wanted a ghost story. So I began, despite exhausting my collection of original ones. Losing even a second would mean chaos! Scarcely had I built up the atmosphere, when it struck me that they could try completing the story. Just then there was a flash, followed by ear-splitting thunder, stunning us. I said, 'Why don't you write now?' That was it. It started all over again. I heard myself saying that I was leaving the class.

It was pouring outside. I could hear them calling me back. They were concerned and apologetic. But I didn't stop; we had lost out on time, there was no point in continuing. Besides, I didn't want to spoil their fun. I had walked quite a bit when I heard voices. Two of them had followed me. 'Akka, come back. See, we've written a poem.' They were holding out a paper. 'Join us under this umbrella. Please...' I would have to bend quite a bit if I had to join them. I said it was alright and took the piece of paper. The poem:

Deep clear blue sea
Cool rivers too
The world is so beautiful,
Unless the cyclone comes with force
Destroys everything
Dirty, dust everywhere
Tree's bending branches
All by the cyclone
In the mountain, hills, valleys
Now at last comes the...
(Rain – only the picture is drawn for me to guess the word)
This is when I realize how limiting I can be.

There is one exercise that works well with children of all ages. Darken the classroom by closing doors and windows. Children can be blindfolded, adding a dramatic element. They are requested to remain silent and follow instructions. They have to hold their questions. Now a lighted candle is placed in the centre, a few flowers placed next to it. A folded newspaper is lit. The children open their eyes and watch silently. This is an experience almost everyone instantly

relates to. They can choose to write, draw or paint. All the materials they want are placed in the classroom—water colours, brushes, paper, gum. The result is tremendous. As they settle into a world of their thoughts and I get immersed in mine, work happens in silence. Watching them, I know their silence speaks volumes. And that somewhere we are sharing our thoughts.

It's a beautiful silence.

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Nature Journal and Circle Time

Two activities for the junior school

SUSEELA KUMARAVEL



Over my years of working with little children in different settings, I have developed a few activities that I feel go well with this stage of growth. I share here two such activities.

Nature Journal

Being with nature is wonderful indeed for me. How can I convey this feeling to the children under my care? A child growing up in an urban environment often has very little contact with nature and can get lost in the ways of consumerism, television, computer games or cell phone games. At the place where I teach, nature manifests itself in its utmost splendour. This rocky land terrain with its tree clusters, the many birds, all kinds of insects and wild flowering plants is indeed a treat to one's senses. We have realized that just making this space available to the children is not enough. Conscious efforts are needed to get the children in touch with nature. This contact we feel is absolutely necessary for human beings to grow up with humane qualities. Fortunately the young children respond very well to these efforts of ours. As Krishnamurti said, 'If you have no relationship with nature you have no relationship with man. Nature is the meadows, the groves, the rivers, all the marvellous earth, the trees and the beauty of the earth. If we have no relationship with that, we shall have no relationship with each other.' Through these words Krishnamurti has poignantly conveyed the importance of a relationship between mankind and nature. I find that these words ring true and are penetrating.

On our campus, we get to experience a range of colours in nature—the different greens of new leaves in spring, the array of all hues of bright colours in the wildflowers, the iridescent colours in butterflies, birds and insects and the changing colours of a veiled chameleon. The spectacular sunsets

and sunrises, colours of the rainbow, the water droplets shining like jewels on grass blade tips in the early mornings, the changing patterns of clouds in the sky looked at while lying flat on the rocks, a dry leaf floating down to the earth in a gentle breeze, a snake devouring a frog, a slender loris moving up a tree, munias tirelessly flying back and forth with one blade of grass in their beaks at a time to build their nests, and many more such wonderful experiences, await us each day.

The myriad ways in which the outer world can manifest itself are a special treat to our senses. The fragrance of the Indian Cork tree flowers, the wonderful smell of the first rain on earth and many other rich aromas of nature are experienced with our sense of smell. The wind whistling its way through, the dry leaves rustled by a mongoose, babblers or a crow pheasant, the slender lorises calling to each other in the night, the sound of children playing or a child crying, all these tell us what an intricate web nature is. Walking on the ground covered by leaves after the rains, working on the soil in the garden with our hands, feeling the texture of new leaves, soft petals of the wild flowers, or the rocks and stones are all joyous experiences made possible because of our senses. If we are to allow our senses to respond to the varied stimuli offered by the natural world, then we need to make spaces for this within our timetables.

K T Margaret in her book *The Open Classroom* says, ‘The function of education is to correlate the inner self of the child with the outer world. Children should be given the time and space for their senses to experience and appreciate the outer world, so that their imagination is stimulated. They should be helped to use their sensory experiences to nourish their minds and hearts. Only then does education truly take place.’

I completely resonate with her words. Walks and treks, making entries in a nature journal, having a nature table with all the natural treasures collected, and doing nature related projects, are all activities that provide children the opportunity to get in touch with nature. When all the sensory stimuli can be accessed in nature I find that artificially contrived sensorial experiences are not necessary to keep the senses alive. What better way is there to stimulate the sense of hearing than listening to the birdcalls and learning to identify birds without even seeing them? Nature is a patient and wonderful educator: all we need is the time to be with it.

Now coming to maintaining a nature journal—it seems the right kind of

activity for the very young. Despite growing up in a city with all its distractions, children seem to have a fascination for the natural world — both the flora and the fauna. Often I find a child absorbed in observing a lizard, a spider, a butterfly, a bird, a wild flower or an ant. Thus in this activity they do what they naturally enjoy, i.e., observe, but of course while observing they make a record of their observations through a sketch and writing. While occupied in this manner their senses are alive and they quieten down completely. Obviously questions follow their observations. They look for answers to their questions and in this manner make sense of the world around them. In short they learn about all the creatures and the plants and the trees that share their environment. It's amazing how they capture the form of what they observe so well in words and in drawing.

Usually, we go out to observe, but occasionally opportunities come knocking at our door. Once a leaf insect came into the Junior School, and settled down very comfortably so we merrily abandoned everything else to observe, draw and write about it. After all, it came to be with us, and its visit had to be honoured. On the occasion when we found that a wolf snake was sharing our room we were not bold enough to go near it, even after realizing its non-poisonous nature. I wonder why now.

A few samples from the children's journals follow.

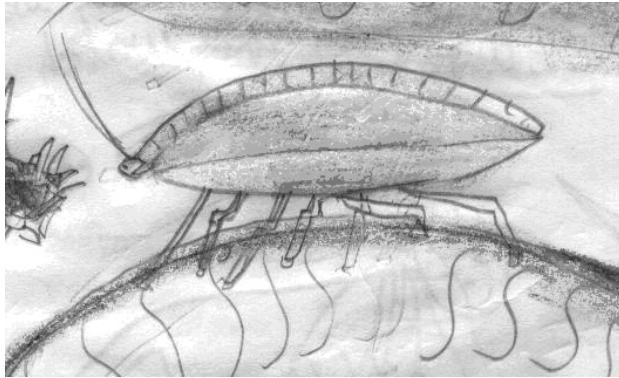
The Rock Lizards (Shika 7 years)

We saw four lizards. There were two adults and two babies. One baby was limping and one was the size of a peanut. The lizards had four legs and five fingers each. The lizards were black and orange in colour. The lizard's tail was long and curled up. Their eyes were small. One of the lizards was popping its head now and then. If anyone shouted it would run away. It would think she/he is going to harm it.



The Leaf Insect (Aranya 6 years)

The leaf insect was like a leaf. It can get camouflaged in the neem leaf. And this is the first time that I saw a leaf insect. The leaf insect flew to the tiles on the thatch when Vimal uncle was teaching us football. Before that we were in the Junior School and that time I saw the leaf insect. The leaf insect had small legs at the front and long legs at the back. The leaf insect was two inches long. Shreeshha came close to the leaf insect and that is why it flew away.



Circle Time

A circle is the best shape that people can gather in as it allows for eye contact with everyone around. People come together in a circle to discuss matters, to eat, to sing or to dance. In circle time in the Junior School we get together to sing songs and recite poems with movement and gestures, and to do story telling.

Anyone teaching in the pre-primary or primary sections knows without a shadow of doubt that songs, poems, movement, finger play and stories are enjoyed tremendously by children. I have no hesitation in adding that songs, stories and poems nourish their souls in ways that we cannot fathom. One visible effect that these have on the children is to calm them down. In fact the only time children can become completely quiet and still is when they listen to a story that engages them.

Children need to build up the vocabulary of a language through listening and speaking before they begin to read and write. It happens in a natural sort of way with the mother tongue. For a child to learn a new language what better way than singing, reciting and listening to stories? Even when a

child can speak a language, stories, songs and poems help enhance their vocabulary.

In order to sing and recite with gestures the teacher needs to shed her inhibitions; for instance be able to leap like a frog or scamper like a rabbit with the children—we cannot do this unless there is joy in doing it. One doesn't have to be a great singer (I am not one, but I enjoy singing and listening to music). Simple tunes that are easy and repetitive can be chosen. Most of the songs and poems in my repertoire are not the usual nursery rhymes but are quite unusual. Many are related to nature and the seasons. It is indeed fun to do circle time because it is one of those rare opportunities when a teacher can easily shed the didactic mode and switch over to a participatory mode.

Now coming to the actual circle time, I do two sessions a week. I try and have a theme for a month or so that coincides with what is happening in nature (it could be wind, rain, gardening). There would be some poems and songs that are connected to the theme. I make sure that there is a balance between poems that can be said loudly and those that need to be recited in a whisper. Children love and respond beautifully to variations of this nature, as they do for speeding up and slowing down. I like those poems that we do which help us stand or sit without the children being given instructions. One might say that we allow the poems to instruct us.

Once we have finished with all the jumping about, we settle down to story telling. The story is often chosen to go with the theme and is initially told by me in parts. In subsequent sessions the children recall the story and I make sure through gentle prodding that they incorporate the new words learnt. When they really know the story well they either illustrate a part of it in their picture storybook or act it out during circle time itself, or use puppets to tell the story. All the new nouns they learn are entered in their 'pictionary' with pictures and sentences. They are encouraged to maintain their own word bank.

Over the years we have discovered many other possibilities. I have noticed that the children are extremely alert after circle time, so I happily capitalize on it and do a quick math and spelling revision. Teaching spelling and grammar through these poems and stories is being undertaken, but this is still work in progress for me.

After they moved out of the Junior School, two of my students brought

to me some poems they had composed for CircleTime. The poems have been a hit, and I include two of them below.

Beware

You are beautiful
Little flowers
Beware of
Walking people

You have a
Smell that's wonderful
Your petals
Are delicate

Flowers! Beware of walking people.

Elephants, Tigers and Peacocks

Elephants are big and heavy
They don't have a care in the world
Their tusks are made of ivory
And they live to be very very old

Elephants! Elephants!
Have you ever seen an elephant?

Tigers are fierce and scary
They kill their prey with a blow
They're fierce but they are merry
And their favourite food is a doe

Tigers! Tigers!

Have you ever seen a tiger?

Peacocks have very heavy tails

They can't fly very high

When they feel like dancing

They open their tails and dance

Peacocks! Peacocks!

Have you ever seen a peacock?

Have you? (2)

Have you ever seen an elephant?

Have you? (2)

Have you ever seen a tiger?

Have you? (2)

Have you ever seen a peacock?

I bet you have.

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Amaltash

Individualised learning in a vertical group

VIJU JAITHIRTHA
WITH ROOPA DEVADASAN AND KABIR JAITHIRTHA



The Amaltash programme started as a pilot project to study the problems and possibilities of individualised and group learning in a mixed age group in the middle school. The Valley School, Bangalore has worked with mixed age groups in the junior school for many years. This programme was offered to all parents of students entering Classes 6, 7 and 8 with a cut off of 20 students.

What did Amaltash offer initially?

1. Students would work at the level that was appropriate to them, irrespective of the 'classes' they came from.
2. Students would work as individual learners so that each one could learn the basic skills, at the pace that was right for them.
3. Group activities had objectives that were not the same as the objectives for learning basic skills.
4. Students would be given training for examinations only when the basic skills

were in place and the students had the necessary stamina and maturity.

While some parents opted for the Amaltash programme because their children had learning difficulties in the horizontal groups, the majority had very well developed learning skills. Though almost all the students were those entering Classes 6, 7 and 8 of the horizontal groups, we had one boy from Class 9. Amaltash envisaged taking the students to the Class 10 examination and beyond, if necessary, thus challenging the assumption that mixed age groups were not practical, or suitable for the higher classes.

An overview

Amaltash tried to operate free from the constraints of a day-school routine. There was yoga several times a week, weekend cycling trips around nearby villages, a lot of encouragement to be quiet and on one's own, to play team games well in a non-competitive manner, opportunities to look after animals and trees and to be responsible for the care and cleanliness of

the classroom. The culture classes were intense—the adults were demanding and relationships had to be established.

An attempt was made to create a strong academic programme that emphasized skill building in the areas of Mathematics, English and the sciences. (In addition, the flexibility of the programme allowed for several subjects of the students' choice. For the IGCSE we have been able to offer a total of sixteen.) Content, per se, was not an important aspect at this level—except where it formed the basis of the skills programme. For example, History was not taught 'formally' as accumulation of information about certain periods in time, whether by doing projects or reading a textbook. In our view, the skills of History were, more significantly, critical reading and attention to prejudice and points of view (including the teacher's!). Travelling to historical sites and to have some contact with different cultures within the country seemed far more necessary and rewarding. Content, when necessary, as for an examination, could be acquired later.

There was no attempt by the teacher to create individualised material. This would have been difficult and unsatisfactory. A series of text books were identified—one for the younger students up to the secondary level and another for the secondary examination itself. These texts were not meant for particular classes such as Mathematics for Class 7 or English for

Class 8, but as a series for the age range of 11 to 14. Even the exam texts were meant for the years 14 to 16, and not for Classes 9 or 10. This may seem a minor matter but is a strong reminder to both teachers and students not to carry the horizontal mindset into the vertical group. It reinforces the fact that students will be at different levels in the 11-14 and even the 14-16 range of years. Despite taking this into account there would be some in the vertical group who would not fit even these flexible, convenient slots. All the texts were chosen for being student friendly, designed for independent work and incorporating practice, review, testing and activities.

Mathematics

Students normally worked individually though they interacted with the teacher and with each other in the learning process. Most of the students found the material adequate and challenging. A few needed extra practice and in the case of one student (who had serious difficulties with the subject), simplified work was designed for that particular need. This was not difficult since such students need repetitive work to take them through a concept in smaller steps. One can design such work in a few minutes which would be challenging enough to keep the student occupied for 20 to 25 minutes. In the correction as well, a great deal of interaction took place between the teacher and the learner. Concepts were further developed or clarified and mistakes

were a starting point for discussion. The older students did the initial correction of their work before submitting it to the teacher. The next step was to try to get the older students to correct the work of the younger ones. This facilitated contact between different age groups (always a challenge when the move is from horizontal to vertical), reinforced the learning of the older student and, most importantly, the teacher could gently move from being a figure of authority to a facilitator.

Some students moved very fast and others rather slowly. But this is to be expected in the learning of Mathematics where there is such a connectedness and building upon, that each student has the right to take as much time as she needs to understand concepts, particularly the basics. Those for whom this subject continued to be difficult would drop it naturally, after a point, but none need to bear the scars of the terror of learning and taking exams in Mathematics.

Over the two years, in Amaltash, we have seen the interaction in the learning process grow very naturally among the students. The older students have enjoyed working with the younger ones. After a while competition among the students seemed to have taken a back seat. This was partly due to the structure of individualised learning as well as regular dialogue about comparison and competition whenever it surfaced in class, even in a so-called 'fun' situation. To us who were closely involved with Amaltash the point where

competitiveness was not the driving energy for learning was tangible. It is not an endemic force that cannot be eradicated.

English

The language programme sought to strengthen the basic and essential skills of speaking, listening, reading and writing. There were some units in the material chosen for Amaltash that were new, for example: 'Evaluating presentation', 'Investigating the media' and 'Focussing on audience and purpose'. Since students had not encountered these topics earlier, everybody in this group of 11 to 14 year olds began with Book 1 of the chosen text and Level A of the Vocabulary Workshop. In the following weeks it became possible for the teacher to observe the natural rhythms and the academic capacities of various children. While most raced ahead with the work because they were older or more capable, there were a few for whom this first level became extraordinarily difficult. For a while assignments were simplified and teacher support increased. The greatest challenge was to find appropriate material for this minority, which enabled them to be challenged while working at their own pace.

For the group as a whole the reading comprehension skills were individualised. But there were possibilities for group work as well, especially in activities relating to spelling, grammar and vocabulary. When a certain error was observed across the group (for e.g. the confusion between the

plural and the apostrophe or the 'of/off' or 'lose/loose' usage) correction became a class activity. Then there was the reading together of *A Midsummer Night's Dream* and listening to an audio recording of the James Herriot stories, the Mahabharata or articles on science. Students reading on their own (fiction/non-fiction) or reading out to each other, just outside, under the tree, after working within the confines of the classroom, was strongly encouraged.

The Sciences

The children were introduced to different levels of text and, quite naturally, fell into the self-study mode at the level where they could work independently, yet be challenged by the material. After every unit, there was a set of revision questions that helped as self-assessment. It also helped the teacher to keep track of where each student's problems lay. Wherever possible, the children worked with more than one textbook/reference material on the same chapter. This consolidated key points, deepened understanding and kept interest alive. One of the most difficult challenges was the planning of age-appropriate laboratory work, given the constraints of timetabling and the fact that students were invariably working on different topics simultaneously. Easier to organize was the science learned outside the 'classroom', while doing yoga, on a nature walk, planting trees or viewing a series of films on birds by David Attenborough. One such rather interesting exercise was the

students presenting the story of the life of a scientist of their choice. This brought some understanding of scientists as people, as well as the history of Science, while honing their research and presentation skills.

The movement of learning within the group was interesting to watch as well, with the original 'horizontal classes' reorganizing into different learning levels, with minimum fuss and heartache as they accepted each other. It was also evident that some children learn best by 'doing' first and then repeating for consolidation, while for others 'reading' is the quickest route to conceptualization. These styles of learning Science revealed themselves naturally in a mixed age group of 12 to 15 children and without the anxiety of comparison.

Assessment

There is perhaps an implicit assumption that assessment and evaluation need tests. Tests become a way of controlling and motivating the student. And in the exam classes one cannot fail to observe the subtle power dynamics played out between students and teachers. What we tried in Amaltash was to find out at which level of the subject the student was working at by simple record keeping, an absolute imperative for a vertical group. Secondly, material chosen, if good, will have self-assessment built into it. These include review exercises, tests and practice sheets at the end of every unit. For the student, self-assessment becomes part of the act of learning—to be taken after proper study,

to be taken more than once if necessary and not an act imposed by the teacher.

Amaltash and certification

In our schools, one of the major concerns of parents is whether adequate training to take exams at the end of the 10th and 12th year of school is possible, without the students experiencing the pressure of examinations at regular intervals. A compromise strategy is to have exams only from Class 8 and above. A different approach would be for the student to take the exam only when he is ready. Then time can be set aside, exclusively, for preparation.

A year into Amaltash and some of the students were ready to begin preparation for an examination. We were looking for both academic and emotional readiness. Therefore, not all who were above 14 years started on the examination syllabus. Some needed more time and, after discussion, parental support was forthcoming. For those taking an exam the texts changed, naturally, but work continued in the self-study mode. There were now different time schedules for completion of work, keeping in mind the varied rhythms and capacities of the students as well as the demand of an examination. In the run up to the exam, students are likely to 'complete' the portions at different points but all will have more than enough time for revision. The IGCSE, the examination we chose, is available twice a year and a student can

indeed take the exam when he is ready and take it without any fuss. The whole process then happens without the attendant hype and hysteria that is such a disturbing aspect of tests and examinations.

Problems

Difficulties that surfaced with the programme have been several and enormous but all related to the interface between the accepted and the experimental. It began with the attempt to create a flexible programme in the context of a day school; Amaltash did not fit in seamlessly with the rest of the school. Further, there were difficulties of attempting to bring together a programme whose goals and approaches were different from the approach of the rest of the school. Though almost all the children were happy with the space and leisure and responded to the challenges of the culture classes and the learning space of the classroom, they were unsettled by their own comparison of what was seen as an experimental approach vs. the mainstream. Finally parental insecurities and confusions, especially as students moved closer to examinations compounded matters. Very quickly, self-study, at one's own pace, which was not what the children of friends and relatives were doing, seemed very alarming. Also, once the novelty of Amaltash wore off, there were demands that some students should take the exam concurrently with their erstwhile classmates in the horizontal groups.

Challenges

The challenge of Amaltash is to find ways to retain the freedom of learning till the very end while keeping a continuous, ongoing dialogue with parents. Then, one needs to communicate to both parents and children that examinations, if they need to be taken, are only one part of the educational process. Naturally, this brings us to those children who are not academically

inclined. There is an urgent need to create opportunities for such children, help them develop skills which will ensure livelihood and all this should become a creative movement in the context of our society. To ensure that this can happen we need more teachers to understand and be comfortable with the objectives, approach and structure of the learning process in a vertical group.

Dr Viju Jaithirtha, Dr Roopa Devadasan and Kabir Jaithirtha are co-ordinators of the Amaltash programme at TheValley School, Bangalore.



Knowledge and Dialogue in Education

JAVIER GÓMEZ RODRÍGUEZ



Education and dialogue have gone together from the beginning. If we take a look at the history of both eastern and western civilizations, we see that their most formative periods were characterized by the sense of eager questioning that is at the heart of the dialogical process. Dialogue, which in principle is a conversation between two or more people, begins with a sense of probing and sharing. Dialogue cannot be separated from the search for truth, just as truth cannot be divorced from the sense of order and beauty. Dialogue is a process of communication whose essence is the unfolding and sharing of meaning. This meaning may be part of an accepted body of knowledge or it may be something undiscovered or in the making. Being heuristic in nature, the dialogue process involves an active participation in learning. Since this kind of participatory learning can only take place in freedom, dialogue is not a process that can be dominated by authority. Its practice is guided by a universal concern with the totality of learning, which is the whole of existence, and it is not aimed at achieving any kind of conformity. Such an approach requires not only a measure of objectivity and clarity in thinking but a quality of sensitivity to the whole movement of communication as it reveals both the facts concerning the matter under discussion and the inner responses of the participating individuals. Such a broad scope and open-ended structure imbue the dialogue process with a high creative potential.

Education, which currently is mostly in the hands of the State, has been entrusted with the formation of capable and responsible citizens who can then take on the different functions needed to sustain and improve the general welfare of society. Such an aim, which is now fast becoming universal, might be defined as a process of socialization, with its pragmatic emphasis on efficiency and progress along scientific, technological and economic lines.

Such progress depends on the cultivation of capacity and the accumulation of knowledge, both of which, it is hoped, will be guided by an overall ethical concern. While socialization essentially involves a measure of conformity to the given collective setting, the individual is nonetheless given pride of place in terms of his contribution and achievement. Not only is such an approach driven by the ingrained evolutionary will to survive but also by the search for social status and personal success. These psychobiological elements infuse the whole process with the sense of an overwhelming necessity, both in physical terms as well as in the pursuit of the socially approved ego-ideal.

Knowledge has come to be seen as the key to the overall development of the so-called modern world and the mainstay of its living standards. As a result, education has been turned into the primary channel for the transmission and cultivation of knowledge. In the educational context knowledge generally refers to the field of information that constitutes the wide scope of graded academic studies as well as the value systems involved in the given cultural context. Human society seems to have evolved in the belief that the greater our knowledge the better equipped we will be to deal with both the practical matters of survival as well as the ethical implications of living. The drive for knowledge has not only been motivated by these aims of material and moral order but by the curiosity to ascertain the nature of things independently of their being of any use to us. The importance of this knowledge cannot be underestimated, as without such a gathering of facts there is no ground for objective thinking. It has also been assumed, not without reason that the logical order of thought is akin to the natural causation of phenomena, thought being the abstract reflection of a deeper universal intelligence which is at the source both of nature and of consciousness. In this view the logic of thought would be a mental reflection of the Logos at the very origin of creation. This kind of assumption was at least implicit in the whole Hellenistic stream of culture that informs the development of Western civilization to this day. Thus in this stream, thought and intelligence have been closely identified, the intellect being the faculty of factual, sane and rational thought whose very precision is not only capable of establishing internally consistent epistemological systems but also of opening the way to insight by way of dialectical inquiry.

It is interesting to note that dialectical inquiry, which is at the heart of Socratic or Platonic dialogue, proceeds by means of challenging one assumption after another. Most thinking, whether in science or in the mundane

business of daily life, proceeds from assumptions, which are the hypothetical foundations on which all subsequent thinking is based. These tend to be of the nature of universal statements, i.e. pertaining to the whole of a given set of phenomena whose relevant character is thus encapsulated and made to serve the deductive process that deals with its concretely identifiable instances. Every general system of thought is structured along these lines, from classical Euclidean geometry to modern constitutional governments, from economic systems to religious creeds. The premises, considered either self-evident or else sanctioned by a superior and unquestionable authority, become the determining factors of the necessary consequences, be they constructive or destructive. But this is what we generally mean by thinking, which is therefore essentially a conditional system whose unexamined foundations can lead to dangerous states of sustained incoherence, as in the whole field of religious and nationalistic ideation and belief. This blind operation of thought is what would make an unexamined life not worth living, bound as it is in fragmentation and sorrow. This other view of dialogue, therefore, constitutes the needful examination of the assumptions on which our current collective and individual thinking, with its feelings, is based.

This process of creative learning and insight, which is unfolded in dialogue, is also at the heart of all holistic education.

When carried to a sufficient depth and with due intensity, this process of questioning the suppositional ground of thinking leads to an eventual impasse, when the known can no longer answer. It is at this point that the whole movement of dialogue becomes truly alive and creative. Then the answer can come only from the question itself as it is unfolded in the dialogical process. This opens the way for direct perception or insight to take place, a perception not dependent on what has been previously known, though it may be capable of translation into knowledge. Such perception can be said to be the proper realm of intelligence and such intelligence can be said to be the very essence of the learning process, therefore of the truly mathematical. This is the implicit journey of inward freedom away from the shadow play in the cave of knowledge to the light of direct seeing. This process of creative learning and insight, which is unfolded in dialogue, is also at the heart of all holistic education.

Insight might be defined as the active principle of intelligence in any

sphere of life. It may involve some degree of recognition, but in essence it goes beyond the operation of the known. Science itself has moved on to deeper levels of understanding by means of insight into its own specific fields. Art and religion have done likewise. It is in the quality of insight that the infinite freedom and wholeness of learning finds its concrete manifestation. This is what, in my view, leads someone like K to deny the connection between learning and the gathering of knowledge, be it through book reading or direct experience.

Both Einstein and K were unanimous and definite in their diagnosis that knowledge is dead. Such an apodictic statement represents a tremendous challenge not only for the emphasis on knowledge in education but for the whole psychological structure of human consciousness as currently grounded in identification. Knowledge has its own place and validity, of course, as is daily demonstrated in the most common of tasks. Without a proper background of information and training, we would find it hard to manage in our predominantly cognitive world. But in this view living in knowledge, by knowledge and for knowledge is tantamount to living on the ashes of what has been and, therefore, not living at all. If to the inherent death of knowledge we add the binding of the psychological self to particular provinces of the known and its survivalist strategies of the search for pleasure, security and becoming, then we can hardly be surprised that our individual and collective aims should prove to be even deadlier. For knowledge is power, both in the practical sense of enabling us to do things as well as in the cruel intent of lording it over others. This view of knowledge that includes not only the aspect of received information, opinion and belief but also constitutes the very reality of our psychological identity necessarily involves the dialogical self-inquiry that opens the way to insight into the nature of the psyche; it is on this understanding that the creative wholeness and integrity of humanity depends.

It has been known since antiquity that there will be no peace in the world unless human beings become truly wise, which means until we understand ourselves and the proper place of knowledge and awaken the insight into the very nature of the good. The good is the whole and the whole is greater than the sum of its parts. Knowledge and the thinking-feeling derived from it are essentially parts. In fact, they belong to the level of the material process, which in principle would make them subject to the laws of causality. This can be readily verified in an examination of the reflex nature of thought-feeling,

whose Pavlovian conditioning operates along deterministic behavioural lines. Such conditioning is essentially a blind identification between an ideational construct (associated stimulus) and an instinctual drive. As dialogue springs from the abiding search for meaning, this structure of conditioning, however natural otherwise, is one essential area of examination, as it affects human wholeness at all levels. Reflex structures may be indispensable in certain areas of functioning but they prove fatal in other areas, where the quality of self-awareness is absolutely necessary. The reflex process, grounded on the blind operation of deeply held assumptions instilled by thought in response to experience, operates on what is essentially an unconscious process of recognition. Psychologically, which means in relationship, this process represents the highest possible danger, as can be readily verified in all the current instances of human conflict. Any responsible form of education has to tackle this issue of persistent and widespread conflict among human beings, which means delving into the nature and structure of conditioning, thus awakening the needful intelligence that can then stand as the true guide of thought-feeling.

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The dialogical process represents the essence of an inquiring mind whose area of concern is the whole, therefore including the reality of nature and the social and psychological dimensions of man, with their epistemological, ethical and ontological implications. Dialogue is not necessarily a panacea but it opens the way for the free flow of meaning in what is currently a fragmented and destructive field of unexamined assumptions and conditioned identifications. Dialogue shares the same central concern with wholeness as education and that is why it is at the heart of it. Education is a deepening conversation of human consciousness with itself in its abiding search for truth and its responsible freedom. All knowledge can come into it but its holistic intent necessitates the awakening and operation of a quality of self-awareness and intelligence that alone can serve as the needful light in an otherwise dangerous reflex process.

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The process of dialogue is necessarily fluid and unpredictable, making it perhaps more akin to art than to exact science. It can tread common ground and yet serve to turn old knowledge into a new discovery by virtue of its heuristic approach. This makes all the difference in the quality of the acquisition of knowledge, as it is then something endowed with vitality rather than the more usual practice of rote learning or outright indoctrination. Such a dialogical approach to the acquisition of knowledge is a necessary aspect of teaching for understanding. But dialogue does not stop there. It then opens the way to insight by drawing on the awareness of perceived contradictions or incoherence and putting the given subject into question. Furthermore, as it leans on the native quality of human sensitivity, it moves naturally and spontaneously into areas of difference that give learning a quality of inherent newness. As its field is not specialized but is open to all learning, the whole inner dimension of self and consciousness comes necessarily into its purview, turning the eye from the outer to the inner, from natural science to self-knowledge, and back again. This fluid movement from the inner to the outer and from the outer to the inner makes for the dissolution of this traditional division in the field of reality and undermines the separation between individual and society, as they are seen to be complementary aspects of a single process. In this way dialogue serves to dismantle the ingrained structure of fragmentation between man and nature and between man and man.

The proposal in this very general reflection is that dialogue has a central role to play in the process of human liberation and enlightenment. The question then remains as to whether such a dialogue can be implemented in the educational context and whether an education really exists that can take such a holistic vision on board and bring it to fruition. Much more would need to be said on all the aspects touched upon and on many others that have been left out of account due to the limitations of time and space, but one thing is clear, namely the unavoidable intent of wholeness implicit in the educational and dialogical endeavours. It is the writer's view that such an approach is a

necessary contributing factor to overall order and creativity not just in the field of education but in life generally.

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Note: The writer would like to recommend the following relevant works to the interested reader: On Dialogue, On Creativity, Thought as a System and Unfolding Meaning, all four by David Bohm; and Pedagogy of the Oppressed, by Paulo Freire.



Contemporary Culture and Adolescent Risk

KARTIK KALYANRAM



Adolescence is often described as a period of increased impulsive and risk-taking behaviour. Binge drinking, rash driving, doing ‘macho stuff’ for a dare and unsafe sex are contemporary forms of such behaviour. This behaviour can lead to fatal outcomes—accidents, suicide, HIV. To this disquieting list we could add less dangerous but equally morbid behaviour such as tattooing, self harm, and an almost narcissistic or even neurotic view of one’s own body.

In this article, I seek to review the nature of adolescent risk-taking behaviour. I will attempt to trace the cultural context in which this behaviour is encouraged, and then briefly suggest what we as educators in schools can do.

Nineteen eighty-three could be taken as a watershed year for the purposes of looking at adolescent risk behaviour. Why 1983 and not any other year? Well, that was the year the world woke up to HIV / AIDS, a couple of years after the first such case was diagnosed in Los Angeles. Since then the HIV/AIDS epidemic has

spread far and wide, borne on the wings of casual unprotected sex, multiple sexual partners, intravenous drug use and unsafe blood transfusions. In a way the epidemic is reflective of the times we live in, the lifestyles that are espoused for young people, the extreme preoccupation with material benefits and self-gratification, the lack of cultural rootedness, the lack of stable relationships and so on.

I will confine myself here to substance abuse and sex, which seem to be the most indicative of adolescent risk-taking behaviour. I will draw upon anecdotal as well as researched findings that indicate alarming shifts in teen behaviour, which pose a grave social and educational challenge.

Some indicators of adolescent risk

Substance Abuse

Soma rasa was probably the first ever recorded use of plant alkaloids by man. Alcohol use, at times profligate, has been documented in most ancient civilizations. Over the years some of these drugs were

used not just for their presumed therapeutic effects, but also for recreational purposes, to enhance pleasure and relieve stress. What we find today is that alcohol is no more considered a drug or dangerous substance. Adolescence is typically when the first initiation into substance use takes place. For adolescents today, 'hanging out' often involves beer drinking in a pub listening to rock music. Some adolescents may move on to sharing a joint. New and often more harmful drugs and patterns of use are replacing traditional practices and initiation rites. In recent years the consumption of licit (tobacco, alcohol) as well as illicit substances has increased greatly throughout the world. The trends indicate a tendency to take to these substances at an earlier age.

Studies in India show that substance use is significantly more among urban students as compared to rural students. Students are particularly susceptible due to, in part, increasing academic pressures. The encouragement by peer groups, the need to be seen as 'cool' or 'hep', easy availability of many such substances like alcohol, tobacco (cigarettes and gutkha) and other drugs, as well as aggressive advertising, make urban teenagers an easy prey. Males seem to be more prone to substance abuse. What has emerged is that living away from parents is often a significant factor in this.

Sex

Unsafe sex seems to be the single most important indicator of adolescent risk-taking behaviour, the world over.

Adolescence is the period when attractions and sexual experimentation begins. In the past few decades sex has become more casual, with the onset of sexual activity occurring at an earlier age, leading to more sexual partners, less consistent use of condoms, and more sexually transmitted diseases (STDs). In India, studies have documented a rising number of teen pregnancies and STIs (Sexually Transmitted Infections). Most of this evidence is anecdotal and has not been scientifically validated. It is only in the recent past that a few institutions have taken up studying this aspect amongst urban youth. Not surprisingly, substance abusing youth reported an earlier age of first intercourse, multiple sexual partners as well as higher rates of STIs, and more substance-abusing females reported pregnancies than other females who did not indulge in substance abuse. Substance involvement continued to be associated with high-risk sexual behaviour throughout the transition into young adulthood.

What makes adolescents take risks?

We may all agree that youth in general indulge in the sort of behaviour which mature adults do not. This has been the lament of the older generation since the time of Socrates and Plato.

But have we ever stopped to consider why this has come to assume such heightened proportions today?

At one level, we need to be aware

that chemical and neuronal changes in the adolescent brain make them prone to taking risks. There is an individual propensity, which acts in conjunction with the reward centres in the brain and makes an adolescent unmindful of the risks involved in a decision he or she makes. However, parental as well as peer influences also seem to play an important part in shaping teen minds. But is that all there is to the propensity to indulge in risk-taking behaviour? Is there something we are missing here? I think there is. And to uncover this we need to take a hard look at the 'cultural' influences children and youth of today are increasingly subject to.

Music, media, movies, and maggi: The four 'M's of today's pop culture

It has been widely recognized that influences of popular culture, propagated by the media, are probably the strongest in shaping adolescent minds—even more than the peer driven behaviour norm. After all, the peer group also gets its messages from somewhere! Let us take a look at four factors that might influence the urban teenager's world view and choices.

Music

Popular music is increasingly the staple auditory diet for young people. I took the liberty of asking some of my students for the lyrics of the songs that they listen to. I must thank the students of Classes 11 and 12 who unknowingly and unwittingly gave me the lyrics of the songs. These are

teenage boys and girls—most of them urban, upper-middle class—in a co-educational residential school. I was certainly shocked. Blatant sexuality, sadomasochism and the portrayal of girls as sex figures, are all there in these lyrics. There are absolutely no positive messages in such songs. There is nothing to be found about the more subtle dimensions of a relationship, about developing a sense of responsibility; none about planned sex, responsible use of a condom etc. It is estimated that between 40 per cent and 60 per cent of the songs listened to by teens have explicit sexual content.

What could be the state of mind of a teenager who is constantly exposed to such lyrics? Moreover, Music Television portrays these songs live and music videos leave nothing to the imagination of the adolescent viewer. Studies have shown that teens constantly exposed to such 'degrading' music quickly move up the ladder from hand holding to advanced non-coital sexual intimacy to coitus itself. Much of this sex is unprotected and frequently involves multiple partners as well. In contrast those teens that grew up also listening to 'non-degrading' music—classical music, folk songs, hymns, choral singing—were less, definitely less, likely to indulge in promiscuous behaviour.

Media

The average youth spends about a third of each day exposed to audio-visual and print media in the form of

television, internet and teen magazines. The majority of this exposure occurs outside of the parental domain, some of it illicitly, some of it in groups (both same sex as well as mixed sex) and some to the accompaniment of alcohol or other mood enhancing substances. The influence of the mass media on a broad range of behaviours and attitudes including violence, eating disorders, tobacco and alcohol use is well known. There have been surprisingly few studies that have examined the effects of mass media on adolescent sexual attitudes and behaviours. A seminal work on this aspect is referred to in this article (by S Liliana Ecobar Chaves et al).

Let us look at the impact of each of the three kinds of media listed above, and the manner in which they reinforce each other.

Television

There have been several studies on the impact of television viewing on children and adolescents. Television is ubiquitous and it is not uncommon to find teenagers watching television in the privacy of their own rooms. To begin with seemingly the most innocuous of these effects, obesity is positively linked to the number of hours a teen spends in front of the television. Obviously prolonged inactivity as well as greater access to junk food causes this. A strong positive correlation also exists between violence on television and aggression among youth. Young people, it is estimated, are exposed to more than

10,000 episodes of violence in a year. Of greater concern is that attractive role models are the aggressors in more than 80 per cent of music videos. In much of violent television programming, there is a tendency to strongly reinforce and justify violence (Hey, the 'good guys' are beating up the 'bad guys'!). When it comes to tobacco or alcohol use, again a very strong positive correlation with television viewing emerges. In more than 80 per cent of cases the first encounter with alcohol or tobacco was by age 15 and advertising on television was a strong influence. (Reference: Strasburger et al from their study).

With regard to sexual attitudes and behaviour, recent studies have reinforced the anecdotal evidence that indicated the impact of television. The most favoured channels like MTV, Channel V, and even movie channels have explicit sexual content (about 83 per cent of such programming has sexual content and about 20 per cent have explicit sexual content). When we look at 'family soaps', the situation is even worse. Infidelity, extra and pre-marital sex are frequently portrayed (with no negative consequences shown). So what are the effects of such television viewing? Broadly, adolescents become more permissive to sexual relations, precautions are not even considered, and in most cases there is early initiation to sex.

Internet

Personal computers with the internet

have found their way into many a home; and even those without personal access to this medium are able to browse freely in the mushrooming internet 'cafes'. In many ways, this medium is even more pernicious than television. Whereas the interested parent can at least view the content of television along with his child, the internet tends to remain a secluded private experience for the teen user. Very little is known about the effects of the net on young minds and how it has shaped their development. In a study in the US, 14 per cent of teens reported that they had accessed material that they would not like their parents to see. In many cases it was inadvertent, following a link, which popped up as they were chatting or surfing. Type in 'sex pictures' in Google and you will get access to more than a million sites. Of greater concern is the fact that 20 per cent of teens were exposed to unwanted sexual solicitation while on the net. Internet chat rooms and virtual meeting places provide access to the sharks that are always hungrily sniffing for their prey. Added to this is the fact that many alcohol companies advertise through the internet, which in many cases remains unsupervised by parents.

Fashion and Teen Magazines

Eating disorders such as anorexia (a serious and potentially fatal condition characterized by a disturbed body image and self imposed severe dietary limitation usually resulting in serious malnutrition) and bulimia (episodic, uncontrolled,

compulsive and rapid ingestion of large amounts of food over a short period of time or binge eating followed by self-induced vomiting, use of laxatives and diuretics, fasting or vigorous exercise in order to prevent weight gain) are often linked to a high consumption of fashion magazines along with television viewing. For those who had successfully come out of anorexia, there was a decrease in the amount of time spent either with television or with magazines. The need to look like the models in the magazines seems to be the driving need behind adolescents with anorexia. Teen 'girlie' magazines also devote a fair amount of space to sex and related issues. 'Ten ways to hook your guy', 'Make him think you are sexy' and such titles are favourites on the covers. Also avidly read are the agony aunt/ uncle columns and those with regard to fashions and outfits. The message which goes out to the girls is that they need to be attractive and sexy to get their man. Today there are a number of similar magazines to cater to the metro-sexual groovy male. They tell young males precisely how to look, dress, what to say, how to be attractive to girls.

So where does all this lead us to? It is not uncommon to find teens hooked to all the above media; in fact, some of them can be found doing three or four different things at the same time. Do we have any idea what happens to typical teenagers with cumulative exposure to multiple sensory inputs from the television, internet and

magazines? Does it not lead to altered behaviour, shifting sexual mores, increasing risk-taking tendencies? Anecdotal evidence certainly seems to point that way. What is needed is further scientific research.

Movies

Hasantha Gunasekhara and his colleagues (from the Institute of Child Health Research, Children's Hospital at Westmead, Australia) analysed the portrayal of sex and drugs in the top 200 movies from 1983 onwards. The source of their study was the Internet Movie Database (www.imdb.com). The exclusion criteria for their study included those rated G (general)/ PG (parental guidance), animated movies and movies set in the pre-HIV era (pre-1983). They studied 87 movies (for example: Pulp Fiction, V for Vendetta etc.) and came up with the following observations. There were 53 sex episodes in 28 (32%) of the 87 movies reviewed. There was only one suggestion of condom use, which was the only reference to any form of birth control. There were no depictions of important consequences of unprotected sex such as unwanted pregnancies, HIV or other STDs. Movies showing cannabis (8%) and other non-injected illicit drugs (7%) were less common than those with alcohol intoxication (32%) and tobacco use (68%), but tended to portray their use positively and without negative consequences. There were no episodes of injected drug use.

The evidence is damning. However, the entertainment industry refuses to

accept the causal relationship between what it portrays and increasing teen risk-taking behaviour; much like the tobacco industry refusing to accept causal relationship between cigarette smoking and ill-health. Ostrich like, it continues churning out movies that can have an adverse impact on young viewers.

Maggi

I have used the word Maggi to epitomize the needs and aspirations of today's teens. Maggi noodles are easily made: just boil some water, dump the stuff in it and voilà you have 'food'. It serves to instantly gratify the adolescent taste buds as well as fill the stomach. One may ask how an adolescent can eat Maggi, which by its uniform tastelessness, might make any self-respecting gourmand retch? Ask an adolescent or more importantly ask the copywriter who conceived the advertisement that makes Maggi so appealing to the youth. One can stretch this allegory to cover almost any form of instant self-gratification, which for today's youth-in-a-hurry means that there is much more time to do other stuff. After all you do not have to think when you are munching junk food, reading a magazine, surfing the net and listening to music a good part of the same time.

After this survey of popular culture, we return to our original question: What makes adolescents take risks?

We know that many factors may make teens prone to risk-taking behaviour. Some

of the most important risk factors are related to race, poverty, peer influences, parental influence (or lack of it) and last but not the least the influence of the media, which in many ways acts as a 'super peer'.

There is also evidence that there is a large variability amongst the teen cohort in respect to why some adolescents take risks and why others do not. These findings suggest that, rather than attribute risk-taking to simple changes in impulsivity during adolescence, some individuals may be especially prone to engage in risky behaviours. This is due to developmental changes in concert with variability in a given individual's predisposition to engage in risky behaviour. Studies have also shown that impulse behaviour decreases with age (probably this is why exasperated parents suddenly round on their children telling them, 'Why don't you grow up/ act your age!'). But in many cases, the damage, alluded to at the beginning of the article, may have already been done.

One might point back to that obvious factor, peer pressure, as the most important determinant of risk-taking in adolescents. Peer pressure that is nourished in the crucible of popular culture. But then what drives peer pressure? Does it start from one teen, or a group of them who come together, or is it in fact a well-orchestrated campaign by adults? Here, I would like to underline my own viewpoint.

Who are the culprits?

Who writes for the movies? Who are

the editors of fashion magazines? Who puts up sexual content on the internet? Who promotes conspicuous consumption? Who markets lifestyles? These are the questions that come to mind when I read about risk-taking behaviour amongst teens. It is easy to believe that there is some crazed nerdy teen churning out programming for television, music videos or the movies, but is that a fact? When I reflect on these questions the finger points squarely back to me. By that I mean adults of my generation, in their 40s, who, as parents, teachers, managers, copywriters, script writers and movie producers have allowed, nay encouraged, the youth of today to become their worst enemies.

It seems to me that the worst offenders might include those well-meaning adults who say that children should be brought up in 'freedom' and allowed to make their own choices. It includes those working parents who trust their teens' maturity to sort the 'wheat from the chaff'. In permissive societies that are burgeoning the world over, there is invariably no one at home or in school to guide children through their growing up years. So young people of the world fall back on what they read, see or hear, to form a sense of who they are in the world. And what do they encounter? It is a world that has been created by their own parents' generation.

So in a sense when we say that today's youth are degenerate, materialistic or use any such term, I think the finger points

back to us. It is we who have failed to instill in the youth of today a value system that would help them grow up to be responsible human beings.

What to do

Tough question! Do we impose bans, do we have net and television nannies, do we ban advertising, and do we keep children at home? None of this seems possible in any way.

The answer probably lies in a re-thinking of our priorities and a coherent strategy. It needs to start at home, the first place where stable, nurturing relationships can be formed and sustained. It must include risk education and sex education, made available appropriately to the growing child. Most importantly parents and teachers, the two most important stakeholders in the growth of any child, must together take responsibility to help the next generation grow with a sense of ease and well being.

Going back to the HIV question, it is more than 25 years since the recognition of this dread disease. It takes about ten years for an HIV positive person to develop AIDS. So those who have developed or who are suffering from AIDS in their 40s must have contracted the infection when they were in the teens. Could education at that point have made a difference? Possibly yes.

Conclusion

Never before in the history of humankind have youth had access to so many choices, many of which are potentially harmful. We adults have to take our share of the responsibility and stop blaming the youth for their hedonistic lifestyles. It behoves us—parents, teachers, educators and all adults—to work together to help young adolescents make intelligent choices about the life they are going to lead and the world they are going to create.

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Book Reviews



A FLAME OF LEARNING
BY J. KRISHNAMURTI
PUBLISHED BY
KRISHNAMURTI FOUNDATION INDIA
REVIEWED BY GURVEEN KAUR

A Flame of Learning is not an easy book to read—but then few worthwhile things are easy. It is not a difficult book if one wants to merely understand it verbally or intellectually, but if one wants to really, truly understand what it is about, one needs to read it with great attentiveness.

One can learn much about teacher-training from this book. It is a record of some of J. Krishnamurti's conversations with teachers. It gives a glimpse of an out-of-the-ordinary (to say the least) educator and philosopher training his teachers. Krishnamurti asks in the beginning of the book, 'If we all think these teachings are important, how shall we transmit them to the student so that we have a different kind of human being leaving these schools who is not just like everybody else? ... Now, how shall we do it?' One can relate to

this immediately for it is the question that we are all seeking an answer to as teacher educators and as teachers.

As one reads further, one realizes that this training is very different from most of the teacher training sessions conducted today. Most training today focusses on the means while remaining silent about the aims of education. Krishnamurti gets to the heart of what, at the end of the day, makes education an intrinsically worthwhile activity. Throughout the book, he pursues this question: how are we to light the flame of learning that will result in the transformation of the student? *A Flame of Learning* is not merely about how we should teach History, Math or Science, but about how to transform the student while also teaching these subjects.

In sharp contrast to the trend in modern training sessions that attempt to upgrade quality by focussing almost exclusively upon technique and technological factors, Krishnamurti focusses on the human and the psychological aspects of the transaction.

This serves to draw teacher-educators' attention back to the centrality of the human interaction that lies at the heart of education, and makes us recognize that even the most sophisticated methodological considerations can assist in the teaching-learning process only up to a point.

One of the first few things that strike the reader is the way in which Krishnamurti relates to teachers. He does not talk to them but with them. Unfortunately, at most teacher-training programmes these days, the trainer talks down to teachers, but not with them, and the teachers in turn do the same with their students. Krishnamurti rightly points out that it is essential for the teacher to get off his pedestal of authority; for, it is only possible to light a flame of learning if the teachers and students explore issues together. One of the highlights of this book is to learn how this can be done without abdicating the responsibility that lies with the teacher.

It is interesting to note here that while Krishnamurti asks the question, 'How shall we do it?' he is not looking for a method. He is interested in laying bare the general form or structure of teaching that would serve as a guide, but cannot be mechanically followed. Too often in teacher-training sessions, a precise lesson-plan with the method is detailed and teachers are expected to follow. Such a detailed outline calls for nothing from the teacher. It is not internalized and not meaningful to

the teacher. Therefore it is mechanically taught and, in turn, leads to indifferent, superficial, and mechanical memorising. Krishnamurti walks his teachers through the teaching, thus giving importance to process, which is essential not just for the teachers to internalize the lesson, but also to understand the importance of process in any learning.

There is another (unintended) lesson for us in this book. One realizes that at times even Krishnamurti is a bit impatient with some answers and the very genuine doubts that teachers express in the course of the conversation. As a result, at times one finds that some teachers try to give 'correct' answers rather than really say what they think. This happens whenever the teacher gives more importance to what needs to be taught and forgets that it can only be taught if one travels at the pace of the student. This should alert us even more to that ever-present danger in teaching and make us careful and determined to avoid the same pitfall.

Finally, the book has great relevance to teachers even outside the Krishnamurti schools. Building attention and intelligence, self-awareness, order, freedom, discipline and uncovering the sources of our conditioning, prejudices, fears and jealousy must be the concerns of all teachers. Whether one is interested in simply improving the ability to learn through sharpening attentiveness or with the more

challenging task of bringing about a deep, radical change within a person, this book should be of interest to teacher educators, teachers and parents alike.

BIRDS AND PLANT REGENERATION
BY TARA GANDHI
PUBLISHER: RAVI DAYAL, DELHI.
REVIEWED BY K. RAMESH

Remember a conversation I had with a young bird watcher in Sahayadri School. It was at dinnertime, and I was telling him about my trip to the peacock hill, not far from the campus. I had been there to look for peacocks. There was not a single bird around, but I came upon a feather. It was long and beautiful. I couldn't identify the bird from whose wings the feather would have drifted down. I showed what I found to the bird watcher. It was a treat to see the sense of wonder spread on his face.

Children love birds. For a boy or a girl, there is nothing quite like climbing a tree and peeping into a nest full of spotted eggs, on a fine summer morning. It is not uncommon these days for students to do projects on trees or birds. Unfortunately they tend to look for all the information they need from the websites. The irony is the trees and birds about which they have to study may be found just outside the classroom. Watching a banyan tree and the birds that nest in the branches, one can

learn so much about the inter-relationship that exists between flora and fauna. If students are asked to read a book on birds, however good it is, not many will relate to the content with interest. At most, they will look at the colourful pictures. But if a teacher asks the students to observe the birds on the campus, and share what they have seen, they will find the activity interesting. An outdoor activity of this kind will probably make them visit the school library to look for details in books or journals.

Inter-relationship between plants and birds

Birds and Plant Regeneration by Tara Gandhi, has an abundance of facts relating to birds, their habitats, and mainly their role in regeneration. The book is an outcome of an assignment to document different aspects of natural regeneration, in which birds have a vital role. The author has included tables of data and drawings related to the topic. The information is a good resource for anyone who is involved in the study of the inter-relationship between plants and birds. There are also colourful photographs of forests, islands, wetlands and birds such as the spot-billed duck, jungle mynah, and the koel, to name a few.

In the introduction the author refers to Dr Salim Ali's concern over the loss of flora and fauna, and she says that the book 'attempts to draw attention to the role that birds play in this process of natural

regeneration'. She speaks of the inter-relationship between plants and birds by citing the example of the Calvaria Major, in other words, the dodo tree. We learn how the tree could reproduce only when the dodo ate the fruit and excreted the seed. The tree and the bird were found in Mauritius 300 years ago when the Portuguese invaded the island. The dodo became extinct a short while after. As a result the trees couldn't reproduce, and now there are only thirteen of them in the island. This information gives us an idea of the significance of the symbiotic relationship between birds and plants in general.

Classification of birds

Reading the first chapter of the book, we get an idea of how birds are classified. There are frugivores, omnivores, grainivores, insectivores and nectarinivores, based on the food they eat. If we have ever wondered what babblers or mynahs that are so common, eat, then this classification provides us with the details. The author points out how birds of each category help in germination and enrichment of soil nutrients, the role they play in reproduction and distribution, and in protection from insects and pests. After defining what an ecosystem is, she goes on to write about seed dispersal and regeneration caused by birds in different ecosystems such as forest, wetlands and islands. She vividly describes the process of fertilization of water by water fowls. Her

reference to painted storks, open billed storks, spoon bills, herons, pelicans, ibis, cormorants and various types of egrets building their nests on bushes in and around water bodies, and her mention of all other activities associated with rearing of nestlings, bring to our mind a picture of a bird sanctuary like Vedanthangal near Chennai.

The roles the birds play in regeneration

We often see an egret or a heron standing very close to cattle in the fields. In the book, there is an account of how people in the village Kokhaarbelur in Karnataka, protect the water fowls like painted storks and spotted pelicans. This reveals the fact that birds and animals can relate to us without fear; but this mutual understanding depends a lot on our interest in taking care of them. In dealing with island ecosystems the author cites a number of examples to explain soil fertilization for which the birds are the cause. As we read the book, our knowledge on ecology gets broadened; the author refers to many environmental truths. In the chapter assigned to mechanisms for natural regeneration by birds, Tara Gandhi with suitable examples writes about the role of different kinds of birds in promoting the regeneration process.

In the final chapter the author describes birds that belong to different categories, giving useful information about the nests they build, the food they eat and also their zoological names. Conservationists as well

as bird watchers will benefit from reading this chapter.

Care for nature

Except man, all other life forms seem to be conscious of the significance of interdependence. Tara Gandhi's book is mainly about this inter-relationship. It brings to our mind an excerpt from the book, *All The Marvellous Earth* by J. Krishnamurti. 'If we could, and we must, establish a deep, long abiding relationship with nature—with the actual trees, the bushes, the flowers, the grass and the fast moving clouds—then we would never slaughter another human being for any reason whatsoever.'

Tara Gandhi shows us how birds contribute to the well being of Mother Earth. Although the book is full of facts,

the author has used simple language to present them, and also to explain concepts related to ecology in a lucid style, which a lay person can easily understand. Since we have not been giving importance to the ecological truth that for sustenance inter-relationship is important, we have become solely responsible for the degradation of the planet. Our so-called development will no longer be meaningful, if the concern for nature is not in our agenda. In the introduction the author begins with Salim Ali's lines: 'But for the trees, the insects would perish; but for the birds, the trees would perish, and following this inexorable law of nature to its conclusion...but for the trees, the world would perish'. This concern is the essence of the book.

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