

# A Black Day in Education?

## M.P. Government Clamps Down on *Eklavya*

○ Ramakant Agnihotri

**T***his article provides an account of an innovative educational experiment started by Eklavya in Hoshangabad District of Madhya Pradesh in collaboration with the State government and how the programme fell out of favour with the government. The following article provides the viewpoint of the government.*

July 3, 2002 was a Black Day in the history of education in India. It should be observed as such for years to come. On that day the Government of Madhya Pradesh (MP) decided to close down *Eklavya's* innovative Hoshangabad Science Teaching Programme (HSTP) that was being run not only in all the middle schools of the Hoshangabad district but also in hundreds of schools in several other districts of Madhya Pradesh. Right from the beginning, the central government and the government of Madhya Pradesh had been active collaborators in the programme. Thus, in effect, the government of Madhya Pradesh closed down one of its own most innovative and constructive initiatives in education. The analysis of this paradox should give us some important insights into the future of innovative interventions in our society.

Why should a State which excels in projecting the image of a 'secular, efficient and progressive' government suddenly and summarily close down one of the most path-breaking educational experiments in the country? To those who have closely watched the impact of globalization and market economy on our education, this should come as no surprise. Spaces for innovation and experimentation are shrinking by

the day and HSTP's closure, preceded by the sudden closure of *Eklavya's* Primary Education Programme and to be followed, perhaps soon, by the closure of its Social Science Teaching Programme, is just a glaring example of that process. Briefly it means that if you have money you have access to good (read 'good for highly paid jobs that suck you back into the global market') education otherwise you can become a part of the Education Guarantee Scheme. For those who are not aware of this scheme, I may add, EGS is a 'popular' scheme of the government of Madhya Pradesh, which ensures that a school is immediately started if a few

children/parents apply for it; it is often not considered important that the school may need a building, drinking water, toilet, a trained teacher, teaching materials etc.

### Science through Discovery

Hoshangabad Science Teaching Programme (HSTP) made a modest beginning in 1972. Teachers from 16 rural schools actively collaborated with well-known scientists from Tata Institute for Fundamental Research (TIFR), All India Science Teachers' Association and the University of Delhi to create it on common platform made available by two NGOs, Friends Rural Centre, Rasulia and Kishore Bharati, Palia Pipariya. Based on the



**Class eight children busy doing an experiment on how things float**



**Class seven children studying the structure of flowers**

discovery approach in which children themselves conduct experiments and arrive at hypotheses they can test, HSTP soon attracted a large number of teachers and colleges from different universities and colleges. For the first time perhaps in the history of this country, children were conducting experiments in small groups with a locally designed kit, recording and analysing their observations through a variety of tables and graphs. The teacher was a partner in the learning process and rote-learning was relegated to the place it deserved in the acquisition of knowledge. The essential idea was to encourage children to ask questions rather than treat them as empty receptacles ready to assimilate received knowledge. The members of the HSTP group were waging a battle on several fronts: they were trying to make their ideas acceptable not only to local educationists and bureaucrats but also to children, teachers and society at large; it was no joke to convince people that the new curriculum was better than the existing one; they were also trying to keep up with the latest developments in the pedagogy of science. It was equally important to quickly set up implementation and

feedback mechanisms that would ensure that the gulf between theoretical conceptualisation and classroom transaction is minimal. Unfortunately, it was such a programme that the government of Madhya Pradesh decided to close down on extremely trivial and ill-founded grounds.

### **Legend and Reality**

A decade's work had laid a solid foundation for HSTP. The programme was taken over by *Eklavya* in 1982. *Eklavya*, a lowly tribal boy, was obsessed with the desire to acquire knowledge and skills that were the exclusive preserve of upper caste warriors. When he became a master archer on his own, Dronacharya, whom he had mentally adopted as his guru, demanded his thumb as *guru dakshina*, (tribute to guru) all so that he would not be able to emerge as a superior of Arjun, Dronacharya's favourite student.

In the case of the modern *Eklavya* group, there was no voice of real protest from the underprivileged children; it was a group of young, bright enthusiasts who felt that these children had a right to a better quality of education. In retrospect though, it is clear that these children did finally

get asked for their thumb, and not by their teachers but by those who do not have a clue to what education is all about. The core group consisted of seven to eight people: some young scientists who had just finished their doctoral programme at the University of Delhi and were making a choice between a routine university job and working in an NGO, computer scientists, biologists, botanists, science journalists and social scientists. It also had the active support of a large number of college and university teachers and several institutions in the State and at the Centre. However, it is important to understand that these young people, despite their remarkable enthusiasm, were no Dronacharyas; nor were they working in any isolated *ashrams*. They were ordinary individuals, some already married; some likely to be married soon. Madhya Pradesh would soon become their home, a place where they would rent or build houses and where their children would go to schools. They would not just be intervening in schools but become an integral part of the local rural communities, even though a substantial part of their identity and aspirations were inevitably informed by urban middle class values. The original idea, at least for some founder members, was that the core faculty of *Eklavya* would continuously renew itself and most scholars would join it from time to time only on deputation. It soon became clear that to sustain a programme of the quality and magnitude of HSTP, to be followed by primary education and middle school social science programmes, and a host of institutions and publications, would need a permanent faculty and a larger group. In addition to innovative intervention in schools, *Eklavya* soon began creating new programmes for science popularisation, health education, rural

technology and artisan development and models for participative rural development. It produced toys for children that engage their imagination and prove to be educationally useful; it also organised science activity fairs on a regular basis. In about 15 years, the strength of *Eklavya* rose from 7 to 70 or more. Having started with a single field centre in Hoshangabad in 1982, it soon had several other field centers in Harda, Pipariya, Shahpur, Dewas and Ujjain; in addition to its central office in Bhopal, it also developed a chain of sub-centres in the State. By 2000, *Eklavya* was an important presence in the field of education not only in Madhya Pradesh but also in the rest of the country. Any new effort in education looked towards *Eklavya* for guidance and help.

It was in March 1982, that the Planning Commission of India called a joint meeting of all the institutions involved and *Eklavya* was formally registered as a non-profit voluntary society on October 26, 1982. This remarkable, completely unprecedented collaboration among such diverse agencies as schools, colleges, universities, University Grants Commission, Ministry of Human Resource Development, Department of Science and Technology, etc. proved a source of great encouragement to the members of the group. There was in the group a deep-seated urge to change things. Anyone who interacted with the group could not escape being impressed and touched by its remarkable enthusiasm, commitment and hard work to slowly make a better future possible for the underprivileged children. The primary objective of the group was to make innovations in education in existing structures in collaboration with the state and central government and to disseminate them, in whatever

possible variations, as widely as possible. The group strongly believed that the existing school structures provided enough space for improvement and if new materials with new methods of teaching involving only very small additional costs were seriously implemented, there was no reason that children should not show quantum jumps in their performance and understanding. The essential idea was that children should get enough space to do things on their own and should be encouraged to reflect over what they had done. It seemed eminently possible and desirable to avoid the drudgery of rote learning and make education a meaningful experience that children would nostalgically remember for the rest of their lives. It was clear to the group right in the beginning that intervention in science alone, and that too at the middle school level, will not by itself lead to any lasting impact. It did not therefore waste any time and began involving college, university and other professionals in the areas of language, mathematics, history, geography and civics to create two additional groups, namely, *Prashika* (*Prathmik Shiksha Karykram*) which

tried to create an alternative curriculum, materials and teacher training programme for the primary school education and SSTP (Social Science Teaching Programme) which aimed at creating an alternative social science teaching package for middle school children.

### Reaching out to Teachers

Before *Eklavya* took it over, HSTP was being tried out in only 16 schools. In 2002, it was running in over 1000 schools in 15 districts of Madhya Pradesh. It involved over 2000 teachers who had undergone a series of trainings of unprecedented rigour and depth. From among the teachers, HSTP produced a group of about 200 resource teachers who constituted the foundation of extremely challenging teacher training camps HSTP organized. The number of students to which HSTP reached out directly was in the vicinity of 100,000. In addition to all this, HSTP inspired a variety of educational initiatives all over the country. An evaluation committee appointed by the Ministry of Human Resource Development in 1991 confirmed that HSTP was based on sound educational principles and





that these principles should be extended to the whole state.

### End of an Experiment

All this was brought to a sudden halt because of some extremely trivial reasons given by some members of the Hoshangabad District Planning Committee (DPC) and an equally superficial evaluation carried out by some *bara babus*. The real reasons for its closure must of course be far more complex. After all, *Eklavya* had been a darling of various Congress regimes in Madhya Pradesh and it is actually the pro-BJP elements that wanted it thrown out of Madhya Pradesh. In any case, the decision was widely condemned by all those who understand anything about the nature and structure of knowledge and the ways in which children learn. Some of the most eminent scientists voiced their concern in no uncertain words and approached the political and administrative authorities to reconsider their decision. The decision, said eminent scientist, M G K Menon, smacks of high-handedness. Leading educationist of India, Prof. Yash Pal said that killing HSTP would be a loss not only to Madhya Pradesh but to the entire country. Such efforts, he said, come

only once or twice in a century. A statement was signed among others by some of the most respected scientists C N R Rao, Jayant Narlikar, M G K Menon, Obaid Siddiqui, P M Bhargava, D Balasubramanian, V K Gaur and Ashok Jain on September 2, 2002, said:

'HSTP is widely acknowledged as the only macro-scale initiative in the entire country where children learn modern concepts of science through the method of inquiry, experimentation and analysis and relate their newly acquired knowledge to their own environment. Nowhere else in the country, could the children approach the entire science curriculum through the method of science, not even in the elite metropolitan public schools. Thus in HSTP, the scientific community of India saw the hope for better science education for the rest of the country. The decision of the state government has extinguished this hope.'

### The Mother Paradigm

With over two decades of struggle and experience behind it, HSTP in a sense became the mother initiative without which we cannot even conceive of the Primary Education and the Social Science Teaching

Programmes of *Eklavya* and several other pedagogical initiatives in Gujarat, Rajasthan, and a whole set of states where the World Bank supported primary education programme (DPEP) is in operation. A variety of things were done under this programme. A set of new textbooks and experimental kits were prepared. To the best of our knowledge these materials are unparalleled in their experimental approach, simplicity and child-friendliness. They take the children through a process of observation, tabulation, analysis, hypothesis formation and validation and logical inferencing; most of these activities take place in peer group interaction. Even if this alone were HSTP's contribution, it should by any academic standards be considered enough to let *Eklavya* continue, diversify and disseminate its activities. But *Eklavya* has actually done a lot more. It has trained a large number of teachers in the new approach, many of whom are now professional master trainers. It created institutions like *Swaliram*, an extremely successful forum where children could ask any question and it was treated with all possible seriousness by some of the most outstanding scientists in the country. It created grassroots level structures to collect feedback and provide on-site support to teachers. It helped several other states and institutions to start new programmes. It published magazines like *Chakmak*, *Sandarbh*, *Srote* and *Hoshangabad Vigyan*. It supported movements like Narmada Bachao Andolan and put its might behind the struggle to get to the roots of the Bhopal Gas tragedy. It was a platform on which internationally recognized scientists and academics, university and college teachers, serious publishers and administrators, young graduate students, a variety of NGOs and school teachers collectively

debated on pedagogical issues on a regular and sustained basis. In fact, *Eklavya* was its own most serious and powerful critic. The *bara babus* of this country obviously don't realize that in over 55 years of independence, they have not been able to provide a comparable platform to the people of this country.

### Methods of Evaluation

How does one make an assessment of such a programme? Certainly not the way the government of Madhya Pradesh has done. If you wish to close down a programme for political or personal reasons then you should have the courage to say so rather than hide behind naïve statistical manipulation based on inadequate and selective data. A careful assessment of HSTP would at least take a year and we would need a team of competent professionals and not a couple of bureaucrats. We would need to examine at least the following aspects:

- *Eklavya's* philosophical assumptions and their relationship to the aims of education and their curriculum;
- the relationship of the curriculum and textbooks and kit and other teaching learning material;
- a comparative study of the old with the HSTP textbooks and TLMS;
- a careful comparative study of the classroom transaction in HSTP and non-HSTP schools;
- observation of teacher training workshops and analysis of various capacity building strategies;
- in-depth interviews with master trainers, teachers and children, focusing, in particular, on conceptual clarity rather than rote learning;
- analysis of the on-site support structures created to help teachers and to collect feedback on the curriculum and classroom transactions;

→ learning outcomes of children in terms of the approach in which they have been taught;

→ network of relationship with the government, other institutions and NGOs and the community; and

→ overall development of children.

The essential feature of HSTP is to make children autonomous learners; the idea is to equip them with a method by which they can start exploring new problems and ideas on their own. The assessment of the learners should be made from this point of view. There is ample evidence to prove that whenever such an attempt was sincerely made, HSTP children were found to be far ahead of other children.

Instead of trying to put together a team of professionals to undertake this task seriously, bureaucrats set out to do the task themselves. After all IAS officers should be able to do everything! And what did they do? A brief report is put together by the bureaucrats to justify the closure of HSTP. In order to assess the HSTP Class 6 to 8 curriculum, they take the Class X examination results of 2001-2002 and show that in terms of scoring marks above 60 per cent in science, Hoshangabad ranks 16th out of a total

of 45 districts. They would of course be very happy if it ranked 45th. What a mockery of 30 years of hard work put in by scores of committed scientists not just from *Eklavya* but from across the country, from places such as TIFR, IITs, University of Delhi and a variety of other universities and colleges. Even if we accept their assessment for a moment, the difference from one district to another is often less than 2 per cent; for all you know it may not at all be statistically significant. But to find that out we need all the data for all the children for all the districts and to arrive at meaningful statement we should examine it across the years. We will also first need to hypothesize what kind of impact a *middle* school HSTP input should have on a *high* school examination, particularly when the high school curriculum and examination system are predicated on assumptions significantly different from those of HSTP. And that exercise can unfortunately be done only by professionals.

### Where Angels Fear to Tread

The government of Madhya Pradesh does not stop there. It shows no hesitation in rushing in where angels fear to tread. Perhaps on the



basis of a fairly well-established, though perhaps not so well understood by the administrators, positive correlation between achievement levels in different areas of knowledge at the school level, an attempt is made to show that it is not only in science that the HSTP children do not perform well but also no specific benefit has accrued to these children even in other areas of knowledge because of HSTP. And the report does show that Betul, which was at the top in the case of science, remains at the top in other subjects also. Thus, those who do well in science also do well in other subjects.

We feel for a moment that here is another study that supports a well-attested conclusion in school education that is, levels of achievement in different subjects are highly intercorrelated. But the authors of the report do not find it necessary to examine the tables displaying the relevant data beyond the point on the basis of which they could dump HSTP. It does not seem to worry them that Chindwara which is at the second place now does not even appear in the previous table dealing with science. This should put a question mark either on all previous studies or on the present one.

But who cares about academic discourse if a decision has *already* been taken? And Bhopal which is at number three in the case of science is at number 16 in other subjects! Indore, Damoh, Balaghat, Barwani and Sidhi of the first Table are missing from the latter Table and Gwalior, Chattarpur, Ujjain, Seoni and Sagar of the latter Table are missing from the former. How does the government explain these anomalies? What according to the government is then the relationship between achievement in science and other subjects. Once again we need lot



**Teachers doing experiment themselves**

more data and a far more careful and sophisticated analysis to arrive at any sensible result. In fact, it has never been HSTP's objective to prepare children for the kind of examinations that are normally conducted by our boards. These examinations rarely test the conceptual clarity of children, an area which is at the heart of the HSTP curriculum.

As a matter of record, *Eklavya* has been collecting data for several years and several comparative tables may be seen in Volume 4 of the documents HSTP has put together. They clearly show that there is no significant difference between the examination results of HSTP and non-HSTP children. This simply suggests that whereas HSTP children gain substantially in conceptual clarity and a new approach to knowledge, they also manage to do as well as other children on routine examinations. In his M. Ed. dissertation called *Maadhyamik star par Hoshangabad baal vigyaan evam paramparaagat vigyaan vishyay ke muulaavdhaarnaon ki samajh kaa tulnayaatmak adhyayan*, Sharma (1998, Devi Ahilya University, Indore) found that, as compared to other children,

children who had been studying under the Hoshangabad Science Teaching Programme were highly motivated; they took keen interest in their environment, their levels of awareness of the plants and animals around them was very high; and their conceptual clarity about basic scientific concepts was remarkable. Dube, 1994, in his *A Comparative study of the HSTP and non- HSTP strategies of teaching science at middle school level with respect to scientific creativity, problem solving ability and achievement in science* (Ph D thesis, Barkatullah University, Bhopal), also showed that HSTP children were way ahead of non-HSTP children in scientific creativity and problem-solving. Similar findings may be seen in *Aadiivaasii kshetron mai paramparaagat vigyaan evam Hoshangabad vigyaan shikshan kaaryakram se kakshaa aathaviin ke chaataron ki uplabdhi staron kaa tulnayaatmak adhyayan* (Nandi, 1997, MEd dissertation, Vikaram University, Ujjain), *Hoshangabad vigyaan shikshan karyakram kii prabhaavshiiltaa kaa adhyayan* (Alexander, 1997, Ph. D. thesis, Rani Durgavati Vishvavidyalay, Jabalpur) and. *New Trends in Science*

*Curriculum* (Masih, 1998, New Manak Publications, Delhi). These studies may also have their limitations but what the MP government has done is indeed questionable.

The Madhya Pradesh government's report also attempts to measure the general academic and social impact of HSTP in terms of the medical entrance examination, literacy rate and gender empowerment. If these parameters were used to assess any programme, public or private, not only in India but across the world, then all efforts towards any innovative intervention would have to be stopped forthwith. But the MP government could close only HSTP and that's what it did. The social impact of HSTP can be assessed only by the kind of study we have suggested above.

We may now turn to a brief discourse analysis of the MP government Report and try to read what is written in the margins and between the lines. Language unfortunately has this potential of betraying your inner motives. What could obviously not be sustained on the basis of inadequate and selective data and tables can often be pushed with the help of language. The 'Summary of Review Findings' opens with a short paragraph of three lines. These lines contain at least five morphological and syntactic negatives. The data the authors feel shows 'incontrovertibly' the 'inefficacy' of *Eklavya*, 'the only remaining' argument in its favour now being that the children enjoy it which, according to him, is an 'intangible' and 'inadequate' criterion. This is indeed an index of remarkable control on the use of morphological negatives made with the help of the prefix *in-*. Notice that *Eklavya* has actually never jumped onto the bandwagon of 'joyful learning' which largely involves

considerable song and dance; joy in learning for *Eklavya* has always meant hard work and conceptual clarity. That joy seems unknown to the authors of the MP report on *Eklavya*. What is most shocking is that the report treats *Eklavya* as a tenant in the State, a tenant that has violated its contract!

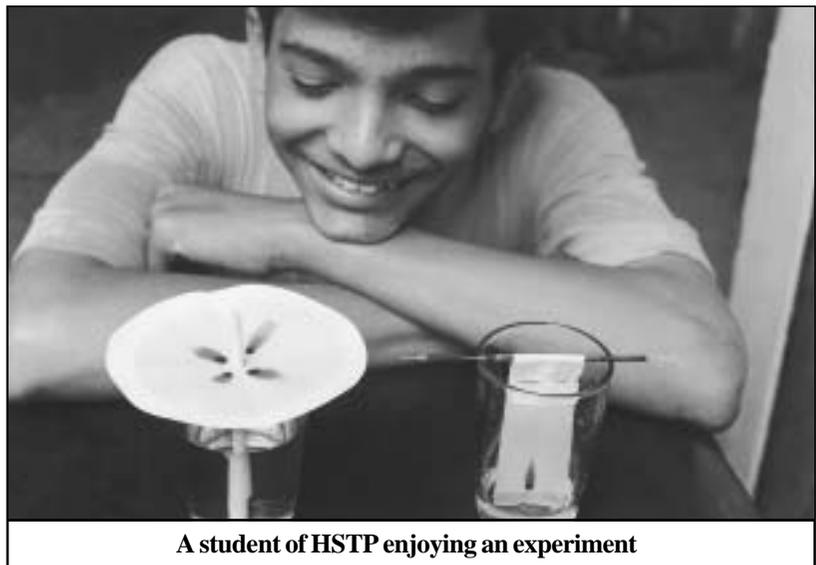
### The Balance Sheet

What is it that made a Congress government accomplish the BJP agenda in such a hurry? The whole programme was wound up in just a few days; governments rarely function with such a single-minded objective and at such rapid speed. Why was the government in such a hurry that it did not even follow its own procedural norms to close down such a programme? It did not even consult its own State Advisory Board of Education (SABE). At least four of its distinguished members, namely, Profs. Romila Thapar, Gopal Guru, Mushirul Hasan and Krishna Kumar were easily accessible when the government decided to close down the programme. In fact, The campaign against HSTP started with some members of the District Planning Committee (DPC) suggesting that HSTP should be closed down

because in this programme children are asked to collect leaves and experiment with live current. Who will explain to these honourable members that collecting leaves and classifying them into different categories to analyze their specific properties is not a waste of time? Who will tell them that the most scientific way of learning about electricity is not to read something about it in books but actually to conduct experiments with battery cells and small bulbs?

The real motives of some of the DPC members were of course different. The kind of space *Eklavya* had created for itself and the spirit of rational enquiry it had initiated among children and teachers were incompatible with BJP's philosophy of Hindutva. Perhaps children started asking uncomfortable questions at home; perhaps children from low castes raised issues that were not palatable to the higher castes. In any case, the role of the local authorities is far more comprehensible than that of the highly educated and well-informed bureaucrats, cabinet ministers and the chief minister.

What was really at stake for the state government? It could of course not afford to displease local



A student of HSTP enjoying an experiment

sentiments, given in particular the delicate balance of power at the state and national levels. Moreover *Eklavya*'s consistent anti-establishment stance not only in education but also in relationship to such events as the Bhopal Gas tragedy, literacy issues, Narmada Dam, Ram Janambhoomi, etc. may not always have endeared it to the State authorities. The pressures of supporters of globalisation and an open market ideology perhaps constitute another important dimension; increasingly, a definite correlation is being established between money and 'quality education'. Is there a strong lobby of traders that sustains the increasingly multiplying 'public' schools? Is it possible that *Eklavya*'s SSTP was persuading school children to explore social issues rationally treating history not as an already given linear sequence of events or as a celebration of certain individuals and beliefs that would blindly support certain ideological positions? For the first time perhaps, children were trying to understand the life-style of ancient man or of Aryans on the basis of

available evidence. The origin, migration and life-style of the Aryans for example could no longer be taken for granted. Why not then kill SSTP itself? SSTP runs in a very few schools; the backbone of *Eklavya* is really HSTP.

Is it possible that in this multi-dimensional space of its rejection, *Eklavya* also failed on certain counts? Did it get carried away with its initial momentum and eventually lose touch with contemporary issues in science and learning? Is it the case that it multiplied its activities far too fast and spread itself thin in the process turning some of its central activities into relatively pointless routines? For *Eklavya*, it is a moment of grave reflection. It needs to plan its future in a way that no future government would dare do what the present MP government has done.

So far as the present MP government is concerned, the least it can do is to restore the status quo and let *Eklavya* continue its experiment at least in some schools. It should realize that such spaces are important for the growth of education. If the language and the environment

of children and sustained academic enrichment are serious considerations for the education of children, continuous experimentation will be necessary in small pockets such as the MP government was so generous to provide. For an organization like *Eklavya*, it is not easy to open its own schools. Nor is it desirable to do so. In a country with India's levels of poverty and neglect, education must continue to be a state responsibility and if we even remotely wish to reach quality education to the poor, experiments such as HSTP must be allowed to flourish. In case the MP government refuses to listen to reason, July 3 should always be remembered as a Black Day in education.

The State is of course free to have a careful assessment of *Eklavya* done by professional experts and should it find *Eklavya* deficient on some major grounds, it should invite some other NGO to take its place. □

**Dr. R. K. Agnihotri is a professor in the Department of Linguistics, University of Delhi. All photographs accompanying this article have been sent by R. K. Sharma.**

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