

Voices of Teachers and Teacher Educators

ISSN 2455-1376



Volume VI Issue I August 2017

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Published by:

National Council of Educational Research and Training (NCERT) on behalf of
Ministry of Human Resource Development, Government of India, New Delhi.

Preparation of the publication at NIE (NCERT), New Delhi.

Cover Design & Layout Design: Mohd. Amir and Tarkeshwar Gupta

About the Journal

The journal 'Voices of Teachers and Teacher Educators', an initiative of the Ministry of Human Resource Development (MHRD), is now being co-ordinated by the NCERT. The Journal highlights the vital role of teacher education in India, as the country is poised to provide quality education to all its children, irrespective of gender, caste, creed, religion and geography. The National Curriculum Framework (NCF)-2005, the National Curriculum Framework for Teacher Education (NCFTE)-2009 and the Right of Children to Free and Compulsory Education Act (RTE)-2009 all reflect this commitment and underline the principles that make such an effort necessary and also spell out the strategies for it. The challenge is to augment the role of teachers in shaping the social transformation that India is witnessing, have a long lasting impact on the quality of education, and making education equitable. Teachers and all those concerned with education need to recognize that their ownership and voices are important and that they can and do learn not only from their own experiences but also from each other through collective reflection and analysis. The Journal attempts to lend voice to teachers, teacher educators, researchers, administrators and policy makers in varied institutions such as schools, Cluster Resource Centres (CRCs), Block Resource Centres (BRCs), District Institutes of Education and Training (DIETs), Institutes of Advanced Studies in Education (IASEs), Colleges of Teacher Education (CTEs), State Councils of Educational Research and Training (SCERTs), etc., and make their engagement visible in accomplishing extraordinarily complex and diverse tasks that they are expected to perform. Contributions to the Journal are welcome both in English and Hindi. Voices is an e-Journal and we hope to circulate it widely. We also look forward to suggestions and comments on the articles published. The views expressed and the information given are that of the authors and may not reflect the views of the NCERT.

Call for Contributions

This biannual publication is for all of us: teachers, teacher educators, administrators, researchers and policy makers. It is to provide a platform and also to build a network for our voices, ideas and reflections. Since the idea is to make this journal reflect all our voices, it would fulfill its purpose if we contribute to it in as many ways as we can. We look forward to all of you contributing with your experiences, questions, suggestions, perspectives as well as critical comments on different aspects of teacher education and schooling. Your contributions could be in the form of articles, reports, documents, pictures, cartoons or any other forms of presentation that can be printed. This could also be through comments and reflections on the current issue for improvements of the publication to make this a participative endeavour and improve its quality. We look forward to your inputs to make this journal truly reflective of our voices. We look forward to receive your contributions for the next issue by 15th October 2017. We also look forward to comments and suggestions. The next issue would also be focused on Curriculum and its practices. The contributions can be sent to the following:

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Editorial

Curricular choices have always remained areas of deliberation and reflection. A democratic society necessarily has to empower its citizens to participate in the governance and functioning of all the processes and it is important to think about the role of education in it. Human societies educate children to understand the tradition and the culture while absorbing new knowledge, understanding and even new perspectives. Wider educational processes beyond that of the family and the community must enable one not only to appreciate what Society has but also look beyond it and examine it critically to help the community, so that Society and the nation move forward.

The curricular deliberations were set into motion many years ago even before the country became independent. The discerning discourse of the proponents of the *Nai Talim* is still relevant and needs to be taken cognisance of what we think about the way forward today. Of course the curricular questions have been taken further in the country at the instance of the Departments of Education and by many independent explorations that have sprouted in the nation during the process of thinking on this. It is not that all these have worked in the same direction or of the same depth and quality but these explorations have brought into sharp focus the questions and the challenges that confront us. A curricular document needs not only to be clear and aligned to the aspects that are relevant to us from all perspectives but also help those using it to be clear about the expectations from them. A curricular document is therefore just a framework as it would only be complete with all the supporting documents. This issue explores embedded aspects and the complexities of the exercise from the construction to the concretisation and implementation.

The first article is by Prof. Khader who has long experience and association with curricular development and concerns. In his paper, the author has argued that Curriculum in reality is a roadmap for formulating and structuring learning and is the relation that binds the learner and teacher experiences. The article identifies four ideological sources of their origin. The author argues for a shift from 'scholar roots' of curriculum such that teachers are not mere 'givers' of knowledge and include process perspective as well. He suggest that a common thread that runs across different ideologies, and in the relation between curriculum and individual and society. He elaborates the aspects that relate to the formulation of textbooks and argues that process perspective needs to be understood carefully. The perspective speaks of integration of content and pedagogy. The author argues that schools need curriculum to have a shared plan for all those involved in the functioning. The clarity and nature of ideas included in it give directions that give some coherence. The construction of the curriculum however, is a judicious process with difficult choices. The multidimensionality of the curriculum and the chosen act of purpose emanates from an understanding of what a human society ought to be.

Schools, Education and hence Curriculum are expected to fulfil complex often somewhat contradictory roles. Their foci and elaboration would be defined by perspective that may seem similar on surface but are very different when examined. A democratic polity requires space for all to be equitably educated and that too aims towards developing a complete person. The importance of inclusion of diversity requires a school programme that has multi-dimensional learning opportunities and a spectrum of expressions of various forms.

The diversity of curricular experiences is necessitated not only due to inclusion but also from principles that define education. Considered in this manner, the space for conversations and expectations widens as also the domains of experience. On the other hand functioning of the curriculum is also affected by the simultaneous desire to produce a somewhat homogeneous student out-put. This is accentuated by the keen competition and the race to be the best. The author argues that the ethical framework must function with provision of autonomy and not with an overt or even covert coercion and pressure. He suggests that an appropriate framework could be one that not only values autonomy and space for creativity but also recognizes the true working with hands. It would also ensure cooperation and comfortable learning rather than competition and pressure. The school while using the curriculum must have a spirit of listening to and learning from them.

The second article titled, 'Curricula: What can the School do for the Development of a child' by Prof. Hriday K Dewan focuses on role and importance of curricula, the expectations from it so that it can guide and help the school in fulfilling its purpose. He points out the conflicting visions and perspectives of the curriculum and the influence of the rapid changes in the human situation including the technological that pushes the popular image of the school towards competition and as individual endeavour. These sensibilities drive the schools and expectations from them. He further underlines the role of education for a society in terms of carrying forward the tradition and also enabling the people in it to discover, check and validate new knowledge and understanding. For a democratic society there is an expectation of building togetherness, co-operation and sense of belonging and responsibility in all people and therefore the need for the schools to have a role in the development of students as responsible and informed citizens. A humanely developed democratic society requires education that makes students well-rounded and have multi-faceted interests. It is in these varied requirements that there are contestations and choices to be made. There are challenges and tensions in creating space for myriad, multiple views. School has to keep these in mind and strike out a path that is able to fulfil the expectations in the context that it exists. For the Indian context, it becomes essential to make the effort to develop in children an appreciation and respect for the wide diversity in knowledge and cultures. Therefore, the new approach to curriculum must seek to involve all stakeholders and as a two way process of influencing them and being simultaneously influenced by them.

The article on 'Reflections on School Science' by Professor Amitabh Bhattacharya provides a glimpse into the way science is taught in the schools and how it is different from the nature and the basic principles of science, its development and how it can become interesting for the learners. The content load is too much and the expectation is of remembering and reproducing information. In Indian Science classrooms till secondary, doing experiments and even demonstrations are vanishing now even in the assessments. The experiments in the books are not written in a manner that expects that they be done regularly and the entire treatment misses the essential elements of science namely detailed observation, framing hypothesis, collecting and organising data to drawing inferences. Professor Amitabh talks about the Hoshangabad Science Teaching Programme and argues that the effort showed that science could be taught in a manner that was interactive, interesting and with active experimentation. He points out that

the NCERT can guide the way but for the ideas to reach everywhere in the States, a strong advocacy and support is needed from the entire science community.

In the article 'Textbooks- hear our voice!', Disha Nawani talks about the journey of textbooks from the point of view of the content and usage. From no textbooks to just a few textbooks and by now we have many textbooks. The text book has gained importance as the education system has enlarged, expanded and uniformity across places and people is expected. The author points out that the subsequent journey focuses on the relationship between curriculum, syllabus and textbooks and how the approach to handle their content. This has undergone a sea change from knowledge and expecting recall to being means to develop concepts and aid teachers in that. Written as an autobiography of the textbook, the paper argues that the importance of the textbooks is sought to be made more balanced by the NCF 2005 and they need both to leave space and flexibility for the teacher and the children but also not consider themselves as the only resource!

Prof Rajaram Sharma in his paper talks about the current confusion in the direction and way of using technology and defining its role in education. He argues that the attitude to technology needs to be balanced. The current overdrive and way to use technology to monitor and tell the teacher what to do in the classroom paints the teacher in extremely negative light and puts her under tremendous pressure. By systematically mapping all chapters of all textbooks, creating digital content resources, disengages the teacher, the primary role of nurturing student abilities is no longer the role that galvanizes the teacher. As a result teachers become passive and unfortunately it also reduces students to passive consumers of packaged information distorting the very purpose of teaching learning. Making it to mere content delivery.

Prof Rajaram Sharma argues that Teacher's responsibility can not be to show and tell or just follow the protocols given. Unless the teachers have a space to be and expected to be creative and urge the students to do the same, the role of students also becomes passive and mechanical. The best use of technology is to build communication and break the isolation of the teacher in the school so that she can reach out and share her experiences and ask her confusions and questions. He further says as teachers we just need to be ourselves and not over awed, over enamoured by Information Technology (IT) or be over reactive to it denying that it can not serve any purpose

The article 'Teaching of English in India- Issues and concerns' by Kirti Kapur, is as the title suggests about teaching of English in India. The introduction of English is a matter of concern inspite of the large demand for English and its use as the medium of instruction. The article briefly presents the approaches to learning and their evolution. Discussing the goals and objectives of English teaching, it analyses the principles outlined in the NCF and points out that the NCF suggests creation of multi linguals as the purpose of teaching English. The article points out the huge gap in the availability of appropriate materials and trained teachers and argues that the teaching of English needs to be looked upon as any other language teaching. This would, therefore require creating an input rich communicational environment as a pre-requisite.

The article 'New Curriculum to New Pedagogy in Multilingual Context' by Binay Pattanayak, shares the journey of new curriculum development in the state of Jharkhand. The focus in this process was on quality, equality, harmony, mutual

respect and co-operation. They worked towards a paradigm shift in pedagogical strategies in their multilingual context based on the guiding principles of NCF-2005. In this direction, they developed 30 position papers driven by a child's rights perspective. He points out the beginning of the journey to its implementation.

The article titled 'Science Teaching: Recommendations and its Implications on Teacher Education Programme' by R.R. Koireng discusses about teaching of science as an integrated subject and its implications on teaching-learning materials, pedagogical processes and teacher preparation. Explaining briefly the format and principles of integrated science as it is pointed out in NCF 2005 through examples, how abstraction can be reduced and teaching brought closer to life, he indicates that while NCERT has made many efforts including production of textbooks with an integrated perspective there have been no reforms to enable it. The paper also raises its implications for pre-service syllabus and teacher preparation and says that teachers currently produced by the teacher education institutions are not equipped to teach integrated science. The teacher preparation programmes themselves have physical and biological science teachers. The schools generally also divide content in this manner and in many states even the syllabus, text books, etc. and time tables are also divided. The author asks why this is so. Is it due to the books that present science as a combination of segregated domains of physics, chemistry and biology? or Is it due to the teacher development programmes or is it due to the product of university education system feeder for B.Ed course and such courses.

N. Suresh Kumar in his article emphasises the importance of making the teacher think about the children, their native worlds, actions and the words they use. He analysed that teacher thinking and her attitude is extremely critical for effective teacher-student exchange. He argues that teacher thinking is at the root of the way they work and their degree of professionalism.

The article on 'Curriculum Development and Implementation' by Utpal Chakraborty is a discussion based on the experience of teaching, the paper on Curriculum included in the syllabus of teacher education for pre-service preparation of teachers (B. Ed.) in Chhattisgarh was introduced after the NCTE 2014 regulations. He points out the difficulties in dealing with the course due the lack of sufficient quality material on this. He argues that the notion of curriculum is described and understood in diverse ways but unlike in English, there are no materials that bring out the nuances and distinctions in these notions around this in Hindi. He also points out that the way the paper is taught and assessed reflects the understanding that the teacher has no role in the defining of the curriculum or help the student teacher learn to do anything better in her school. He suggests that the paper needs to be taught and assessed in a way, it must help the teacher understand curriculum as something that she has a role in constructing and delivering. He opined that teacher must be able to understand, its sources and the underlying principles so that she is able to see it differently from hidden or unintended curriculum. He suggests that understanding curriculum would help realise the actual intended curriculum reducing the practice of finding excuses and blaming everyone else.

In the article Digital Story Telling and ICT based method of constructing curriculum, Sree Ranjini and Gurumurthy argue with examples that teachers can have a role in co-constructing the curriculum and its implementation for their school. Curriculum and teaching are crucial parts of education. And hence

the teacher is critical as the curriculum can not teach itself. Since the needs of children are diverse, it is not possible for a single text book to fulfil the needs of all, implying a need for contextual resources and teacher development. In all this ICT can have a role and the authors describe an experience of co-constructing such resources with teachers for their class-rooms. The authors emphasise many times that all this is to empower and strengthen the teacher not to weaken her role or to totally replace her.

The article entitled, 'Teaching with Technology' by Vineeta Garg discusses the need to incorporate ICT into school curriculum to maximize educational outcomes.

The article 'Stories and Mathematics Come Together' by Pooja makes an attempt to demonstrate story telling as a pedagogic tool for teaching algebra to elementary stage children. During story telling, students show their high level of curiosity and logical reasoning . The article is presented in a diagnostic form discussing a real case of a teacher.

This issue of VTTE carries two reports on workshopes/seminars. One on a workshop held in Raipur which discussed School Curriculum- Emerging Issues. The idea was to reflect on the State Curriculum Framework (SCF)-2007 which was developed on the principles of NCF-2005. The workshop reflected on the issues that were not adequately spelt out in SCF-2007 and /or had not been sufficiently or effectively carried forward in the field resulting in a gap. The three day workshop came up with some key points of agreements and some concern that needed more deliberations as very strong counter views were presented. The workshop was exciting and led to a fresh round of thinking. The second report is a seminar on a path breaking effort in educational discourse. This seminar was organised by Azim Premji University (APU) and Ambedkar University Delhi (AUD) focussed on the Teachers and their work. The seminar had over 100 participants' writing papers out of which 82 were accepted. The Seminar held 18 discussions over 3 days. The seminar focussed on the broad themes associated with the teacher. The sessions on notion and identity of the teacher including the construction of the notion of a teacher by and in the community saw many passionate but well argued presentations. The fact that the language of the papers was Hindi, made it possible for them to distill their learning and extract principles that were worth sharing.

This issue also carries a review of the book 'Nai Talim' written by Marjorie Sykes who spent many years as a part of the large movement thinking about the way to educate the Indian children, namely the Nai Talim. The review by Nidhi Gaur underscores the relevance of the book in today's time of violence, both internal and external, and disconnect of education from the life of the people. She says that Sykes has shown Nai Talim as a continuous dialogue with the society and the temporal reality. She also points out that Marjorie presents the 50 year journey of an idea starting from a nebulous idea of ideal education to a way of transforming the lives of the people. She says Sykes has brought out the challenges of Nai Talim from within and has shared her dream of its purpose in todays' world.

This issue of VOICES covers only a few of the aspects of curriculum and its practices. We intend to carry more reflections on this in the next issue of Voices as well. We look forward to responses on the views expressed in this and also bringing forth other fresh aspects. We would want to bring out the next issue

early and therefore would request you to send in your reflections on papers in this issue as well as the new contributions.

Editorial Committee

Lessons Emerging from Curriculum Practices

Abstract

This article rests on the premise that activities form the source of learning experience. It outlines the key ideas gained by the author during his participation in the formulation and implementation of National Curriculum Framework(2005) and Kerala Curriculum Framework(2007). The ideas centering on the connectivity of curriculum and, individual and society, and the different meanings of process perspective are outlined here. Illustration of theorising of specific instances observed during curriculum implementation, as well is another feature. This speaks of the meaning of experience and adds on to the richness of curriculum.

My involvement¹ with the process of curriculum management; formulation of curriculum and its implementation tells that it provides a variety of professional experiences. Curriculum, in reality, is a roadmap for formulating and structuring learning experiences. The content and methodology, and the way these two are woven together to generate activities and experiences for engaging the learner mark the professional approach followed by the teacher. The entire process has wider and deeper implications for the fact that it binds both the teacher and the learner together on a specific relation. The relation between the two is defined in terms of learning and the relation is mediated through curriculum. The strength of relations formed depends on the nature of activities formulated by the teacher for providing experiences. Experiences are closely linked to the variety of activities that are created. When I reflect on the idea of such experiences, I find four ideological² sources of their origin. They consist of scholar academic ideology, social efficiency ideology, learner centred ideology and social reconstruction ideology. Reflections on these ideologies

would help us in capturing the meaning of curriculum in the life of people and society.

Curricula Roots

Scholar academic ideology is constructed on the idea that our cultures over the centuries have accumulated knowledge that has been organised into academic disciplines. The purpose of education is to help children learn the accumulated knowledge. The primary focus is on initiating children into the knowledge base of the discipline. It means acculturating students into a discipline. Each discipline has distinct traditions of knowledge and thinking, and the students move from lower to higher level of knowledge hierarchy. Teacher is seen as the transmitter of knowledge and the learner becomes the receiver of disciplinary knowledge. When I turn to the social efficiency model what I find is the thrust placed on the productive functions of the society. The model holds the idea that young members of the society need to be prepared to perform the productive functions of the society. The purpose of schooling is to prepare the young to become the contributing members

of the society. This ideology, rooted on utilitarian perspective, outlines functional education. Vocational or technical education, for example, reflects the utilitarian principles and provides for gaining functional connectivity between education and society. This ideology seeks to provide learners with job training skills that allow them to function constructively in a society.

Departing from these, child centred ideology places focus on meeting the children's learning needs and interests. School becomes a place of activities where experience forms the medium for children to learn and develop. The ideology rests on the premise of developmental stages where the child grows through a sequence of distinct developmental stages. Each stage has its own behavioural and thought patterns. The focus here is not on the content but on the child, his or her development. Education is meant for stimulating and nurturing growth among learners. Learning is seen from the constructivist perspective and recognises three conditions as essentialities for learning to occur. They consist of the learner, the environment and the learners act of involvement in the process of learning. Teachers are not the givers of knowledge, instead, they are the facilitators of knowledge construction. On the other hand, social reconstructionists believe that our society is crisis ridden. They are conscious of the injustice originating from religious, racial, caste, gender, social and economic inequalities heaped on to the members. They consider education from a social perspective and hold the view that education is the pathway for addressing the social issues. The key assumption is that since the society is ridden with crisis it follows that good person, good education, truth and knowledge are also undergoing

crisis. The implication is that we need to decentre our focus from traditional ways of viewing and conceptualising the world to critical reflection. Critical theory assumes that dominant social groups use political, economic, cultural and educational decisions affecting the lives of those who are less powerful or less privileged in the society. The less powerful becomes powerless and dependent. Their emancipation from the prevailing political, economic, cultural and psychological practices is a major concern. Using a value system based on social justice and equity, social reconstructionists think of actions to transform individual and society through education. For them critical pedagogy is an effective tool for transforming the individual and society. Such a pedagogic shift allows people from diverse situations recognise how social crisis affect their lives. Marginalised children, for example, feel that they are discriminated on getting access to quality education. Further, the National Curriculum Framework (2005) and Kerala Curriculum Framework (2007) sense the meaning of human problems that occur in our society. Recognising this reality, both these documents provide space for covering a range of problems related to inequalities based on religion, caste, class and gender. The issues stemming from adolescent sex, public health, environment and economic productive capacity of the individuals as well are recognised. Social reconstructionists view learning from the perspective of constructivism. Constructivism aided by critical pedagogy provides the pathway for the transformation of individual and society. Teacher needs to think and act, and provides a facilitating role. Obviously, we need thinking teachers, if our concern is on the transformation of individual and society.

My reflections on these ideologies suggest a common thread that runs across them and it is the relations between curriculum, and individual and society. When we centre our attention on our society's effort to accumulate knowledge (scholar academic) or productive functions of the society (social efficiency) or children's learning needs and interests (child centred) or transformation of individual and society (social reconstruction), what we find is that the curriculum stems from individual and society, and also, in-turn, contributes to the enrichment and transformation of individual and society. It means that there is connectivity between curriculum and, individual and society. The connectivity speaks of reciprocal relations between the two. Though the relations can be interpreted in many ways, it is a field reality. This reality is a lesson that can be easily felt and is quite visible. It cannot be ignored.

Process Perspective

One may think that these ideologies stand as separate islands from each other. But in reality, they are not. The underpinnings of these ideologies are such that connectivity among them is quite natural. Reality tells that teachers hold more than one ideology at a time and also shift from one to another depending on their professional interests. It means that there are instances where teachers free-float on these ideologies. It can also be seen that a composite of ideologies, though the magnitude of each may differ, influences the teacher during his or her professional practices. As the teacher becomes familiar with these ideologies he or she sharpens his or her professionalism. However, the concern for content and pedagogy drives the teacher to scholar academic, child centred and social reconstruction

ideologies. As the teacher moves to child centred and social reconstruction ideologies he or she starts sensing the meaning of constructivism. This naturally entails the teacher to turn to the process perspective of learning. The process perspective provides for active engagement of the learner in the process of construction of meaning. Active engagement opens up the path for the involvement of learner thinking. Infact, the process perspective is rooted on the conditions of formulation of activities, active involvement of learner, learner thinking, learning experience and construction of meaning or learning. When I reflect on curriculum framework, what I sense is that it is a document of policy statements on curriculum. National Curriculum Framework (NCF-2005) and Kerala Curriculum Framework (KCF-2007) are specific examples. Both these documents articulate their ideas centring on the process perspective of learning. In a democratic society, the key concern of a system of governance is that all children learn and develop. When the attention is on all, without any discrimination, it is a logical essentialism to choose a pathway that would provide for learning and development. The pathway is process perspective of learning and it is rooted on constructivism.

Thus, the process perspective means the learner's active engagement in the process of finding meaning or learning. It involves manipulation of materials or activities that are designed for learning the content. Let me cite an example based on a textbook developed as part of the curricula reform initiated following KCF (2007) in Kerala. Tea-Shops in Malayalam Cinema, is a lesson in Class X, English textbook. The text reflects the socio-economic and cultural life in Kerala and its role in the narrative of Malayalam films. Kerala was a caste- ridden society

in early twentieth century. Caste dominance and discrimination were quite visible. Sensing the prevailing social practices, social reformers initiated 'panthibhojanam'- dining together by people of different castes or communities- to reduce caste differences and dominance of one caste over another. Village tea-shop is set on this background and seen as public space for freedom of the people. Tea-shop never discriminates people by caste or religion. Anybody can get into the shop and get tea and eatables by paying money. It is a secular space where the entry criterion is possession of money. It is the meeting point for all. A wide range of people including hawkers, fishmongers and local postman are regular visitors. Some of them do their business in the vicinity. It also becomes centre for reading newspaper, discussing politics and also gossiping. Tea-shop is also a source of information about people and families of the village or the neighbourhood area. The meeting point has a meaning in the sense that anyone can enter the tea-shop without the caste or religious label. At times, it gives the image of a reading centre or a club. It also becomes a venue for airing the conflict that erupts within the family or between families or people. Its history is the history of our culture and also depicts our way of life. With such significant features of tea-shops the text shifts its focus to the role of tea-shops in Malayalam movies. The narratives depict the scenes of tea-shop in different Malayalam movies and specify the roles of different characters. Its recurring presence in contemporary Malayalam films indicates the role of cinema in the life of people and society. It is significant to state that the text is closely linked to certain activities the learners need to perform while learning each passage. Some of these activities consist of learners' reflections on their image of tea-shops in their locality,

connecting the meaning of tea-shop with panthibhojanam, reflections on the central theme in each passage, finding the meaning of freedom in public space, elaborating the idea of tea-shop as secular space, searching the relevance of tea-shop's continuing role in Malayalam films and outlining a tea-shop scene from a film that the learner has seen. These are a few though the list contains a variety of activities which can be performed individually or in group situations. Learners are required to do and also express their ideas. Infact, the structured activities open the pathway for the learner to find the meaning of the text on tea-shop. Obviously, each activity seeks involvement of the learner, particularly his or her thinking. It implies that the process perspective covers both the activities provided for the engagement of the learner and the process of manipulation of such activities. Manipulation naturally requires the engagement of thinking process of the learner. In short, the process of manipulation of activities and the thinking process involved are the critical components of the process perspective of learning.

Apart from the meaning related to learning, the process perspective has another meaning. The second meaning that depicts the process of generating ideas indicates the other side of process perspective. Curriculum material can be developed by one or two individuals as was the practice in the past. However, the process perspective does not subscribe such a practice and, instead, it focuses on the process of generating ideas. Our efforts in the formulation of curriculum framework or the design of textbooks and the related learning materials in the recent past were done through a well designed process. Such formulations are done through forming groups consisting of teachers and experts where the members generate ideas through discussion, reflection

and review. Well, the group did consult various stakeholders from the public. For instance, in the formulation of National Curriculum Framework-2005, a national steering committee and 21 focus groups consisting of experts drawn from various parts of the country were formed. Focus groups generated ideas through wide ranging discussions and also held consultations with various levels of stakeholders. Besides the ideas generated through internal discussions, the inputs from focus groups and also from stakeholders, helped the steering committee in the formulation of NCF (2005). Later, the document was circulated in all States and UTs for discussions and gathering ideas. With these inputs the document was finalised. Obviously, the framework comprises of shared ideas, shared by experts, teachers, and stakeholders including parents through discussions, critical reflections, consultations, letters and e-mails. Likewise, textbooks were also developed by forming groups consisting of experts and teachers, and they formulated the ideas through discussion, reflection and review process. With regard to KCF (2007) too, the ideas were formulated through the process perspective. There were only 14 focus groups in this situation and a core group was set up for the formulation of curriculum framework. Ideas generated by the core group along with the ideas from the focus groups helped in shaping KCF (2007). Subsequently, textbooks and related materials were developed following the group process. What is significant here is the point that whether it is curriculum framework or textbook or related materials, the ideas related to all these are generated through the process perspective. It means that the process perspective has two meanings where one implies the process of finding meaning or learning, and the other denotes the process of generating ideas for the formulation of

curricula policies and materials. This is a lesson derived from field reality and it has wider implications for ensuring curricula quality, and strengthening teacher professionalism.

However, the process perspective has yet another dimension that is closely connected to textbook formulation. The conventional notion is that content alone (scholar academic ideology) is adequate enough for the development of text lessons. When we turn to child centred and social reconstruction ideologies what is strikingly visible is the point that the relations between content and pedagogy define the text lessons. Such an understanding naturally seeks integration of content and pedagogy while developing the text of a lesson. If we return to the lesson; Tea-Shops in Malayalam Films, discussed earlier such an integration can be observed. Pedagogy is woven around the content. While traversing through each passage the learner needs to engage with the pedagogic tools to find the meaning of content. The questions learners pose or the discussions they hold or the reflections they engage are directed to seek the meaning of the content. It speaks of the learner's engagement with the process of thinking. It means that how the content is structured by linking with the pedagogy is a critical condition for the formulation of text lessons that has greater consequences for learning and development of all, and certainly not, for a few. Thus, besides the process of finding meaning or learning and the process of generating ideas, the process perspective has, yet, another meaning that speaks of the integration of content and pedagogy. These three meanings of process perspective that can be observed in field situations have wider implications for curriculum management. It is a major lesson and also is a field reality.

Theorising

We may follow the principles of process perspective and construct a well structured curriculum. But the success depends on how well the curriculum is practised. The curriculum practice is naturally linked to the professionalism of teacher and it is a significant component of school quality. When we reflect on school quality, we find that it is spread across curriculum, learning materials, teacher professionalism, classroom transaction process, activities learners engage, forms of evaluation including assessment and the facilities available in the school. However, school authorities, sizeable number of teachers and even the members of public quite often look to outcome measures or achievement marks as the indicator of quality. For instance, while I was engaged with the curriculum management process in Kerala, one of my friends who was relocated due to transfer told me, "I am in search of a school for my daughter who is in class IX. I could find one and it is a good school. I did ask him, why do you call it a good school? My friend had a quick response saying, people tell that the school secures 100 percent result in board examination. No student falls below 70 percent in overall marks". My friend's words gave me a jolt for his view that the result or the product (achievement marks) is the lone indicator of quality. Unfortunately, we value the achievement marks or the product, instead of recognising the value of genuine productive processes that generate the marks or the products. In another occasion as part of my interactions with teachers, I did ask a group of teachers, why do students fail, say, in mathematics? The group had a range of responses covering, lack of student motivation, low intelligence, lack of study habits, irregular attendance and social origin

background. All these are student related factors. It is quite depressing to find that teachers attribute reasons or factors of failure to students alone. The implication is that teachers view school failure as individual deficiencies on the part of students. McLaren³ (2007) points out that the tendency to mark failure as individual deficiencies is the teachers' effort to psychologise student failure. Psychologising student failure amounts to blaming it on individual trait or series of traits of students. Teachers' failure to see their role in students' failure did surprise me. Seeing the response patterns of teachers, I changed the question and asked them, why does the school fail children in mathematics? Suddenly, I could see a glow in their face indicating that they could sense the role of teacher in students' failure. This indicates that when the teachers are given situations to critique their role, they decentre their focus and recognise the reality. Infact, this attitude of psychologising student failure has compounding effect because the teachers are unaware of their capacity in its debilitating effects. Psychologising student failure is part of hidden curriculum that keeps teachers free from engaging in any serious critique of their professional role within school. However, we need to consider the psychologising tendency from another angle. This tendency need not be confined to students' psychological traits alone. It may include student's social origin backgrounds too for the reason that social origin exerts its influence on individual behaviour. Infact, teachers' tendency to psychologise students' failure may also be seen as a human nature. Man does not like to accept failure because failure implies pain. In other words, failure inflicts pain to self and no person likes to inflict pain to the self, and he or she attributes failure to others. What it means is that

the teachers' tendency to psychologise student failure can be meaningfully interpreted when we consider the human nature of teacher as well. The idea of human nature provides a broader frame for the objective treatment of teachers' tendency to psychologise student failures. It is important to note that critical pedagogy may help to decentre the teachers' focus and sense the reality. What I consider critical from the domain of curriculum management is the point that whenever we come across certain specific events (eg. Student failure, incongruence between curriculum reform ideas and classroom practices) during curriculum implementation or practice, we need to reflect it with a theoretical lens so that we may clothe such events by giving theoretical frames. Theoretical frames add on to the richness of curriculum.

Summing up: The ideas outlined here are based on the field experiences gained from the process of curriculum implementation. Though the experiences are personal, certain

emerging patterns from the field situations seek reflections. In my view, we must reflect on the emerging lessons; connectivity between curriculum and, individual and society, meaning of process perspective in terms of process of learning, process of generating ideas and process of integration of content and pedagogy, and theorising. It is significant to note that curriculum is not neutral and has ideological roots. Curricula reform efforts in Kerala, for example, witnessed opposition from certain groups. They along with a few political parties initiated a protest movement, saying that critical pedagogy is for questioning the religious belief and God. Likewise, the story of ideas of Copernicus and Galileo too faced stiff opposition from certain groups. This paper neither intends nor makes an effort to cover the ideological roots and explanations of curriculum; probably that can be done separately. What is significant here is the idea that lessons emerging from field situations add on to the richness of curriculum.

Notes

1. Ideas articulated here are based on my participation in the formulation and implementation of NCF (2005) and KCF (2007).
2. For details of various ideologies, please see Schiro, M.S. Curriculum theory: conflicting visions enduring concerns. SAGE Publications: Los Angeles, 2008.
3. For theorising of experiences and critical pedagogy, please see McLaren, P. Life In Schools: An introduction to critical pedagogy in the foundations of education. Allyn and Bacon: Boston, 2007.

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Curricula: What can the School do for the Development of a Child

Abstract

Schools have a multiplicity of roles and are influenced by a diverse set of stakeholders. The interests of these stakeholders and their perspectives are not always aligned. Besides since the school only offers a part of the education experience and claims to fulfill only some of the purposes that the society had from the education of its children, the role of the school and the curriculum that drives it becomes important to interrogate. To what extent it should further the ideas prevalent in that community and that particular society and to what extent must it bring in new ideas and induce change even in that society. The rapid pace of technological changes and the pressures has led to a direction of interaction where lot of people are thrown together and mixed but yet they remain in their boundaries. We point out that the direction of development and construction of the market forces the preferences, desires and aspirations in a direction that is competitive, individualistic and narrow.

In contrast to this popular notion of school, democratic polity requires a curricular process that is inclusive and brings in the diversity of the experiences the children need to develop holistically and also ensure all children can participate and engage with others from different backgrounds. The school needs to make children learn to engage with each other, co-operate and learn with, about and from each other. The other important expectation from the school is to help children become curious, confident learners and know how to judge what they come across in their life for its worth and relationship to reality. In the current times we need to rediscover the philosophy that built a democratic human society and draw implications for education from that.

Curricula are designed to help schools function. They not only guide the teachers and students, but also lay the over all framework for the functioning of all aspects of the school and its system. All curricula have to navigate terrain and domains that are constantly transforming, changing and evolving. The schools have been part of the human society's effort to educate its young and have evolved in nature, purpose, structure and all other aspects overtime. The expectation from the school is that it would consolidate human society and help its progress. The schools are expected to carry

forward tradition and 'school' children to be a responsible part of the society and amalgamate in it. They are also expected to help students develop the ability to learn to explore knowledge and eventually lead the community, the society and the human race to a newer understanding and greater control and capability. The conformity and the change that education seeks to instill remains a constant source of tension. This is one of the points of contention in acrimonious debates on curriculum. The idea of the modern school and its link to the larger educational and knowledge structure has enabled

learners to cross the boundaries of the knowledge of their own communities and has led to infusion of ideas constructed and consolidated across the world into old and young Societies. While the fast pace of change and exchange of ideas has extended borders and brought people across the world closer, it has also challenged the societies to absorb the new knowledge and accept what has emerged during the last century of rapid explorations. The increased technological products and their transportation has on the one hand thrown more diverse people together for more time in closer proximities as ever before and on the other hand increased aspirations and consumerist expectations.

The list someone can choose from is complex and contains often contradictory points. The list in a democratic country is also influenced by the people in Governance and the executive as well as due the changing expectations of people. Just to give one example the list can have a strongly articulated need to develop a sense of total respect for elders and what they say: a feeling of nationalism and willingness to die and kill for the nation: to quickly come up with answers to questions and be conversant with the current trends in the society: be a global citizen: be sensitive to the pain and feelings of others: and so on. In addition to these we can illustrate with some trite examples also, the current trends may also include the use of tie, suit etc at the primary and elementary level or the choice could lie at the other end of conventionality and tradition etc. These objectives need to be read in conjunction with the other possible points in the list like thinking for oneself, developing logical ability, not accepting anything without adequate evidence and reasons, etc. The list also has feeling of brotherhood for all human

beings (and also in fact for nature), resolving confrontation by dialogue, belief in peace, being a part of the community, etc. It is difficult for school to make a basket that would satisfy these contradictory expectations.

The difficulty of the curriculum for the school does not end with choosing from these kinds of areas of development. As one of the examples illustrates it extends to academic area as well. For example, we need to think if the purpose of the school is to develop a highly examination competent competitive individual OR it is to develop a person who understands the subjects and their concepts OR is it to have someone who is a good problem solver and can apply the knowledge elsewhere too. The expectation could also be that not only does the child understand the concepts, but is also able to relate them to his/her life and apply them in some useful manner. We may want that the process is not of competition based learning, but rather it is cooperation and supporting each other that is being promoted. There is an increasing realization that academically and technically capable individuals are finding it increasingly difficult to work with each other as a team. They are often highly individualistic, competitive and have tremendous clashes of personality and ego; it is, therefore, difficult to decide what kind of emphasis should be placed on what aspect.

Given all this, it is not surprising that there are many new challenges societies face and having no other mechanisms, therefore, expect education to help overcome them in some way. The changes across the world in the circumstances has been so rapid and so dynamic that we are yet in the process of adjusting to it and accommodating ourselves to it. There are different views on which of these changes can be considered to be

progress in the sense of an evolution for the better of our societies and which need to be countered and slowed down. This clearly leads to many perspectives on what lies ahead and what must be done implying simultaneously a view on education and what shape it should have. The perspectives on the world and societies are not often sharp and clear and given the complexities of our lives our ideas too are muddled, given their attempt to work within the contradictions among the realities around. Since, education is a shaper and a product of the society it belongs to this myriad of muddled world views that make multiple lenses from multiple perspectives possible for constructing the nature, the purpose of education and the idea of the school.

All these influence and construct the views on the need of schooling and education. It results in a spectrum of perspectives on education, its relationship to the children and the community and the State as well. The democratic governance model should create in the stake-holders a sense of itself and of their role in it too. The hope and the expectation is that this would reflect in the school and curriculum. Both these need to reflect the broad principles and understanding reflected in the constituting documents of the Democracy. So while in the absence of such a documented understanding notions of what a school should be would emerge largely from the notions about education, schools and their purposes carried in the society. These notions would be prone to greater influences from the immediate hegemonic reality in spite of their being varied and sometimes even divergent. A nation with an aspirational framework spelt out in detail needs a longer continuity in its educational processes. It is this that brings out the need for an inclusive curricular statement.

The curricular framework document thus emerges from the need to place some guidelines for different schools and align the notions about school and education in some ways. It is aimed at helping everyone to consider the implications of the Constitutional principles to the education and the construction of the school and its programs. The Indian constitution in turn reflects the new understanding about equity, participation, justice and governance that enlightened humanity seems to have reached. And keeping the Indian context in mind aligns this to the consensus at the time of independence reflecting the basic ethos of the country.

The constitutional document also reflects the consensus will of the people and therefore the need to carry that forward to next generations in a manner as close as possible to what is enshrined in the document becomes important. The complexity of the document and the aspirations it sets out indicate the wide scope needed for the curricular document and the challenges. The directions and implications of the Constitutional principles have to be concretised in the immediate context of education at different levels and the possibilities ahead. This analysis and what is considered important by different people is always under discussion and debate. Any curricular document must therefore reflect these conceptions, the confusions, the choices and implications therein conjure many balances. Some of the important points have already been mentioned. For example, tradition and new ideas, the relationship of the citizen to the nation and vice-versa, understanding the 'other' sets or groups, respecting the role, right, responsibility of oneself and of others.

One role that education must perform is directed by the need for all

human societies to be learning societies. We need to discover better explanations, better ways of doing things, increasing happiness for all, discovering our abilities and just exploring the world and opportunities. In all these sharing and learning from the widest sources is the best strategy for any society. In the absence of interaction and exposure, the understanding and the explanations of phenomena available to a human community gets restricted as no one society can aspire to construct knowledge in all areas. One of the key areas for any society is thus to help her children develop the sense and the ability to sift out meaningful and appropriate knowledge from what flows in from all around and also from the sometime unsubstantiated folk-lore and knowledge that is based on a different kind of input subject to a different analysis. This would expect them to develop a sense of criteria that can be used to check if certain knowledge can be considered as acceptable or not. These would require in each citizen the ability to know, understand and believe, but also judge and assess situations. That gives education the very important task of developing reason and criteria of judging and analysing reality and information presented.

For a sustained democratic polity the school needs to develop in children a balanced all around personality and that the schools should have a culture where all kinds of children are interacting with each other and sharing each other's life. School must have children from different backgrounds with a culture where plural ideas are exchanged and children learn to understand each other. The school must build reasonable aspirations in each child and construct the opportunity and the understanding of the effort required. It is difficult at the same time ensure that there is no excessive

pressure and competition. The schools need to build a desire to excel, do more and better and have some contentment, a sense of co-operation and empathy as well. It must respect the knowledge, culture and way of life each of them brings to the school and help them build on it without exterminating all of it by suffocation through the imposition of the dominant hegemony.

In other words school needs to build a complete person who aspires and makes an effort to be the best, but does not end frustrated about what he/she has achieved and cynical about the life ahead. In short, there is an expectation that the school will build a balanced person who is academically excellent, interested in other dimensions including sports, fine arts, craft, etc. and who enjoys being with people and doing things with them. The school needs to give them confidence and desire for further learning and judgement to make choices that benefit most people rather than only look for individual benefit. We also want that the schools instill in children a feeling of value for work with hands and an appreciation of the effort, it requires and enjoy the creativity that such an endeavor offers. All these are reasonable expectations in one way but what do they mean in practice?

For example, take the last one of respect for manual work and building a culture of doing such work. Our society has a view on working with hands. It looks with disdain at those who have to do manual work. Salaries and respect for these are low and so is their power. We know manual work is a part of the development of the human being and essential and hence learning to work in school is not only to generate a respect for people who do manual work, but also to develop the ability to use the mind. Does the school struggle with such issues or just goes with what the

community 'appears' to want? Should it try to educate parents about the value of all round development and of doing things with hands and for others. How would it do this dialogue? Are the teachers or the other functionaries themselves convinced of this? Similarly, does the school give the image of a culture of upward mobility and reflects norms of 'high' society, elitism and even an alien culture as that is what is apparently considered aspirational. And a related question, should it make the parent welcome, feel at home and find a resonating atmosphere OR should it put parents in awe?

Given the attempt to appreciate diversity and include every child the norms of behaviour and the value system can not merely be defined by the notions of the hegemonic groups and the upper middle classes. The rational and fair norms reflected in Indian Constitution being extremely valuable for democracy must reflect in the curricular document too requiring that the curriculum documents for all schools need a common value frame. Such an inclusive value frame may result in opening doors to children, activities and appearances that to many may seem somewhat uncouth and ill mannered straightaway. This is what would strike someone first as it lies on the surface itself. The natural bustle and the culture endowed behaviour patterns of students may not reflect the values and expectations of middle class adults. If schools encourage as they should, freedom and spontaneous self regulated behaviour, the corridors and playgrounds could be noisy with children bustling around here and there. An alternative curriculum would not want classrooms that have pin-drop silence and that may also be difficult to accept. The implementation of a new idea curriculum thus, needs a dialogue with the parents not just the

teachers. Their acceptance of the ideas of education is essential for them to help the school choose appropriate things to promote and recognise that surface behaviour pattern may not reflect ethical framework. The curriculum also needs to spell out whether an ethical framework can be workable when developed by control and prohibitive restrictions or it is better developed through an organic process of reason and understanding. This understanding of temperate appropriateness could often conflict with the general parental view that hard discipline, firmness and some punishment is necessary for children. Idea of promoting a sense of self-discipline and engaging children in processes that will help develop their own sense of discipline and sense of ethics can thus be unpopular. Expectation of unquestioning respect for teachers and adults and that children should do as told also pervades consciousness.

The curriculum implementation and acceptance has another important concern and that is about influential parents putting a huge premium on marks and their implications. They promote the culture of keenness to force children towards excellence in competitive examinations and impose aspirations like getting high-percentages for academics on the curriculum. Besides this, the other aspects of curriculum like sports, music, dance, drama, etc. are also not seen ways to develop an appreciation and interest, but to compete and excel, expects curricular pressure on children. The image of the school leaving child that emerges is thus stereotypically homogenised. The image of a well dressed (perhaps with neck-tie, formal shoes with tied strings complete with clean socks and a belt), keenly aspiring to be a public servant or a white-collared professional, etc. Of course, with the changing nature of economy

the flavour of these aspirations would change somewhat. The expectation of merely academic excellence aspiration may get modified to include sports and some other things as well. Similarly, the preferred subject choices may vary, but the image does not change very much. It is important to consider how elitist and hegemonic and hence exclusionary this image tends to become. We also must consider how this may help in consolidating existing hierarchies. The success and failure being overwhelmingly determined by the backgrounds of children.

The popular image for a good school considers individual academic excellence and competition as key. The desire of the majority is that the school get their children to do better than the rest. Aspects like care, co-operation, empathy, thinking of and with others, ability to think independently, decide for one-self, take leadership, ask questions, feel autonomous, empathise plurally and co-operate with others are not the driving concerns. In fact the desire is to take children in the opposite direction in most of the areas. The dominating effect of the middle class parents makes this the normative expectation for and of the school. It is not surprising that this puts pressure on the school and forces it to take these hegemonic aspirations of society and parents into account. The question then is how does the school choose its curriculum. To what extent it follows what the directions of documents like the NCF are and to what extent go according to wishes of the parents and the society? How much does it try to resist them? Does the school need to have a philosophy or the effort towards satisfying the parents and the students is sufficient? These are particularly a concern when we expect parents to be given options of schools to choose from.

Implications for the Curriculum and its Implementation:

The perceptions and the views prevalent in the society around do affect schools. They constrict constructions of their own philosophies. While the school may make an attempt to keep abreast of the curricular thinking and the documents on them, they are also forced to alter their understanding and beliefs to suit the dominant expectations of the society. Much of what happens in this process can be traced to anxiety of being left behind. For the curriculum through school to affect social concerns and the parental expectations they need to be able to trust that their children are getting *at least* as good education as any other child. And that can only happen when all children actually get in some sense equitable educational experience. This can happen only when there are common schools for all. A school system where neighborhood children from all backgrounds, poor or rich come and get the same benefits and access to education. While this will not mitigate the difference in their home situation, school curricular experience can be the same. A common schools system with the powerful also accessing it and having a stake would give a well functioning school enabling children from weaker background to do better.

This argument has been made many times and the difficulty in implementing it due to lack of political and social consensus around it is well known. The unwillingness to contest the increasing disparities and the urge to justify it through some kind of pre-destined attainment stratification in abilities has many contours. It is not the purpose to state and argue for and against such constructed justifications. The question we are left with is what does the school do in this scenario and what do the authors and protagonists

of the curricular document do to make the required changes in the perspectives acceptable and implementable. If we say that we want to focus on inclusion with democratic relationships to ensure equitable education of good quality for everyone towards all round development of students. We also must follow the underlying principles of education and its relationship to the community by ensuring that parents are key stakeholders and have a strong voice. In order this voice is in alignment and harmony with what is philosophically sound their must be appreciation of these ideas in the community. The school must construct a philosophical clarity for itself and communicate with parents on that. The process of engagement has to be two way, with the school sharing its important educational ideas with the society and the community and listening to them at the same time.

For example if one key principle of work in the school is cooperation and comfort for the child rather than competition and excessive pressure, then conversations around that must happen among the stake-holders. This would be an evolving understanding for each school and would be located in the socio-historical context of its particularity. A effective process can only emerge if it is taken up for each school. The schools would try to focus on children doing such things that ensure participation of all of them. These should be such that their respect for their own creativity and for the labour of others increases and the parents are also compelled to encourage them due to the nature of the tasks. To encourage plural ideas and reflect a student community based on collective understanding of each other a relationship based on mutual sharing of ideas and support has to be built with the community. At each point of

time the institutions have to honestly place themselves in the context of the social aspirations and understanding and find ways to engage with that without rejecting or accepting them as they are. Assimilate what the society is moving towards and try and compare it with the educational principles of purpose and pedagogy. The school needs to extract areas on which it must have a dialogue with the community and aspects that it should focus on to try and transform within. They need to critically reflect on the messages and the emanating understanding from aspirations and the directional signals from the community and reference them against their principles.

We also need to consider whether all schools have a philosophy and how do the philosophies emerge and get defined. Should these be contemporaneous or be for all times? If contemporaneous or at least needs to be interpreted contemporaneously then how does that happen? Who are the people who would work on this philosophy and place it in today's context such that the institution gets to move forward? Should parents be a part of the group that works on the philosophy? If the answer is yes, then how many should be involved and in what manner? What should be the process by which perceptions of parents are gathered and organised? The school needs to work on the ideas obtained from these consultations. The next question is what should be the time interval for reopening the process of review and re-building? What should be the process of involving parents and which parents should be involved? What kind of questions we need to have their reflections on? We also need to deduce from their inputs the likely philosophical principles for the school.

The communication with parents pre-requires a philosophical and pedagogical stance. The school must

be allowed and enabled to review its own philosophical understanding and make it contemporaneous without losing its identity and personality. This requires it to construct or use an appropriate curricular document based on the existing such documents. In this article we can not talk at length about what is curriculum, other articles would do that but we do want to talk about what it is not. Often curriculum is seen as syllabus, a statement of outcomes and sometimes even the detailed methodology to be followed in a classroom process (specific pedagogy), the text book or just a method. As the NCF's point out a Curriculum has to be far more.

To think about this we need to ask the following questions: What is a curricular document and who all is it for? What are its crucial purposes? What are the sources for it? And then also clearly understand what it is not, so as to not get bogged down in following routines and un-implementable algorithms of functioning. It must be internalised that curriculum is not a method or a pedagogy. It is not even the syllabus, the text book and the examination system. It is the spelling out of the overarching principles that lay the foundation of all this. It includes all of these as particular examples but is more than their sum. From one curricular document many sets of these can emerge. And that is how a NCF kind of document can allow the school the space to negotiate with and include the community and the locale around. At another plane we must recognise that the curriculum does not get defined by the pedagogy or methods rather it defines them.

The terms of the curricular document need to be explicated and constantly elaborated and presented with different and new examples. The reason for this is the unfortunate realisation that the curricular conversations get restricted to being defined by some generic terms. The meanings of these, however, can be not just divergent, but even contrary. As an example, the four Capacities as goals— confident individuals, responsible citizens, effective contributors and successful learners – are certainly not beyond question either. We need to explore where did these come from and what do they mean to each of us? They would get defined by the vision of society are we expecting children and young people to confidently, responsibly, successfully and effectively contribute towards. Without a coherent vision for the kind of society we are aiming to create, the Four Capacities are meaningless. It is in this sense the school needs clarity about the basic fundamentals that have to be included in the basis of its curricular formulations.

To summarize in the present context it is clear that we need to rediscover the principles our educational philosophy and the implications of these. And then individually and collectively pledge commitment to them. In that we need to undertake a sharp critical review of what we as a system make schools do. This transparent analysis must force the system and empower the schools to perform with greater commitment and capability. It is only then we would be able to say that school as institutions are fulfilling their pledge to provide individuals with a special kind of personality to the society; kind of individuals who can even provide leadership to the society.

Reflections on School Science

Abstract

Science, once regarded as challenging, is now considered boring by school students. It is argued that this is because of the way science is taught in schools. Over the last three decades, there has been a trend of including more and more content in syllabi and textbooks, while laboratories have declined. School Science has thus become a collection of facts to be memorised. The Hoshangabad Science Teaching Programme showed that it was possible to create a school science curriculum in which the processes of science received due importance. This was recognised in the NCF 2005 documents. However, much remains to be done, and the community of teachers and teacher educators has to make efforts at various levels to rescue school science from its 'boring' tag.

Science as a school subject in India has undergone a major change in the last fifty years. In the 1960s, science was regarded as challenging. Only 'good' students would opt for the science stream. By the mid-1990s, things had become very different. One now heard that science was boring. Leading schools shut down their science sections. The top students chose to go for Commerce rather than Science. Through the 1990s, there was a drop in the enrolment figures for pure science courses in Indian universities, as reported by teachers and confirmed by a study carried out at the National Institute of Science, Technology and Development Studies (NISTADS) (Garg and Gupta, 2003). Newspaper articles were written on the subject 'Declining interest in science'. (See, e.g., Narlikar, 1999, and Sheth, 2000.)

Many commentators thought that students were turning away from science due to reasons related to jobs and salaries. While such factors may have played a part in the phenomenon, I would like to offer a completely different explanation. I take my cue from the word 'boring', and argue that students turned away from science

mainly because of the way it was taught in schools. I have presented the gist of this argument earlier (Mukherjee, 2007).

What were the changes in school science between, say 1962 (when NCERT published its first experimental science textbook) and 1996 (when science courses in universities became a talking point)? To explore this, we have to look mainly at textbooks and curriculum documents and try to guess what was happening in classrooms.

The Dominant Trend

When we compare the 1962 textbooks with the later textbooks, several things are bound to strike us. The first is, of course, the much greater content covered in the later books. This is not just the case with NCERT textbooks. In fact, if we look at private publishers' textbooks from the 1990s (or even now) we find they have much more content than the NCERT books – far beyond what is in the syllabus.

'There has been a knowledge explosion in science', we are told. 'We have to include more things in our school curriculum, otherwise our children will fall behind.' 'We must include

advanced topics like nanoscience.’ The comparison here is implicitly with the advanced Western countries. The word ‘competitiveness’ is often heard in this context. One wonders if the people who put forward this argument have looked at school textbooks of those countries.

Along with the increase in content, there is a change in the way the content is presented. Later textbooks place a lot of emphasis on knowing facts. They are full of lists, e.g. nine kinds of glass. Such information does not enhance understanding. Nor does it fit into a conceptual framework. Faced with pages and pages of such stuff, students have no option except to commit them to memory. In 1992, the Central Government set up a committee under the chairmanship of Professor Yash Pal to look into the problem of curricular load. The report of the committee, entitled ‘Learning without Burden’ pinpointed the problem of content overload in the curriculum, especially in the sciences. (For a summary of its findings and recommendations, see NCERT, 2005, p. 2.) However, no action was taken on its recommendations at the time.

Another striking development concerns openness to experimentation. While the later books do describe experiments, it is clear from the manner of description that no one expects the experiments to be actually performed in the classroom. Here we can look at some anecdotal data. A professor in Delhi University recalled that as a student in a Delhi Government school in the 1950s, he had performed many experiments, and watched many more as classroom demonstrations. By the late 1970s, others said that demonstrations had mostly disappeared from Delhi schools. The decline in laboratories in the Government school system was precipitous, especially after implementation of the 10+2 scheme.

Some states have now effectively done away altogether with laboratory work for Classes IX and X, by stipulating that evaluation will be done through a written test.

These developments have taken school science far away from what science actually is. Science as a school subject has become largely a set of facts to be memorised. The actual processes of science – detailed observation, framing of hypotheses, designing experiments, drawing inferences from data – find no place in the classroom. Thus school science is not only boring, but bears little resemblance to the science that working scientists practise.

Against the Trend: The Hoshangabad Science Teaching Programme

While the above trend has been the dominant one with respect to school science in India, there have been notable exceptions – interventions which have gone against the trend. The most noteworthy of them – in terms of reach as well as depth – is the Hoshangabad Science Teaching Programme (HSTP), which, at the time of its closure in 2002, was running in around a thousand schools. A brief overview of the programme is given below. For more details please see Mukherjee, Sadgopal, Srivastava and Varma (1999) and the website of Eklavya (2013). The reader who is interested in a comprehensive account should refer to the book by Sushil Joshi (2014).

HSTP started in 1972 as a pilot project in 16 Government schools in Hoshangabad district of Madhya Pradesh. Its aim was to improve science teaching in middle school (classes VI-VIII) by incorporating observation and experimentation. The core academic group was drawn from institutions of higher education and research, with Delhi University being the major source. Despite its modest-

sounding objective, HSTP was in fact a complete curricular package, with its own book and evaluation system, along with teacher support mechanisms including training and follow-up. The HSTP curriculum was transacted by the students performing experiments in groups of four and reporting their results, with the teacher facilitating the experimentation and conducting a class discussion on the results and conclusions. While many experiments were designed so that they could be performed with little or no equipment and with locally available materials, it was part of the programme's philosophy that every child should get to handle simple equipment and chemicals. Accordingly, a science kit was designed and made available in sufficient quantities in every project school

A major development took place in 1978, when the state government decided to adopt the programme and extend it to all middle schools (then numbering around 250) of the district. The government accepted the entire package: textbook, practical examinations in middle school, teacher training, school follow-up and feedback meetings. Subsequently, the programme was extended to school clusters in 14 districts. In 1982, a new institution for innovation in education – Eklavya – was set up. During the years 1978-2002, the resource group of HSTP expanded to include many new members, some of whom were inspired to start new programmes in other states. HSTP along with the new programmes showed that it was possible to teach science in a different way in 'ordinary' Government schools.

During the above period, there was another development related to the school system in India – namely the rapid growth in the number of private schools in the country. In 1972, there was no private middle school in Hoshangabad

district. By the late 1990s, there were many private schools. The growth of private schools went hand in hand with the rise of the coaching/tuition industry. A programme like HSTP made it difficult to pass examinations by taking tuition. It was also virtually impossible to write a guide book (*kunji*) for it. Perhaps for these reasons, HSTP had its share of detractors at the local level. There was a major threat to the programme in 1992. That passed, but the 2002 decision of the state government to close the programme turned out to be final. Educationists, science teachers and others across the country requested the M. P. government to reconsider its stand, but all appeals fell on deaf ears.

NCF 2005 and the Future

Though HSTP was closed down, it had served to create a nation-wide community of people who thought of science teaching in a different way. When the National Curriculum Framework 2005 – NCF2005 – exercise was undertaken, quite a few members of this community came on board. Both the main document of NCF2005 (NCERT 2005) and the associated Position Paper on the Teaching of Science (NCERT 2006) reflect this. They highlight the processes of science. For the first time, HSTP and other innovative programmes find a place in a policy document. Reduction in curricular load is one of the key objectives of NCF2005. Thus, we could hope, the problems with school science described above would get resolved.

Unfortunately, the reality of the Indian school system is very complex. While NCERT can make recommendations related to curriculum and syllabus, it has little say in implementation. Each state, bar a few small ones, frames its own syllabus and publishes textbooks. The SCERTs

are responsible for in-service teacher orientation, while the Directorates of Education oversee the implementation. As a result, there is a gap between the curriculum and the classroom.

What can members of the education community do to facilitate change? I believe we have a major role to play in advocacy. Specifically, we have to put forward the arguments in favour of teaching science as a live subject

rather than a collection of facts to be memorised. Many members of our own community may have never thought about these issues. Moreover, whenever we act as members of committees writing or reviewing textbooks, or participate in in-service teacher education programmes, we need to remind ourselves that the onus is on us. Our collective action can rescue school science from its 'boring' tag.

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Textbooks- Hear our Voice!

Abstract

The paper, written in first person, personifies textbooks and traces the history of both their form and current use in India. It explains the difference and inter-linkages between curriculum, syllabus and textbooks. It also argues that prevailing problems pertaining to textbooks is because of the manner in which they are conceptualised, written and used and if these concerns are suitably addressed, they can genuinely serve as a very valuable pedagogic resource in school education.

We are the most important educational resource in a school going child's life in India. We constitute the curriculum, we are also the syllabus and most importantly, we often decide the exact content to be memorised for school examinations. The more we are chewed in, gulped and reproduced on the answer sheets, the more marks we fetch for the students. It is interesting that while we contain errors and sometimes say terrible things about people from different communities, especially the disadvantaged; academics constantly challenge our worth, researchers bash us, teachers condemn us, students often burn and tear us apart after their exams get over, they still cannot do away with us and extensively depend on us.

When did we become Important?

Let us take you back in time a bit. In the ancient times, where the Guru was considered to be a repository of all knowledge, we neither existed in the form that we do now, nor was any value attached to us. It was only during the late Vedic period (around 400 B.C) that certain books that could be called textbooks saw the light of the day. However, even then we could not be produced on large scale due to non-existence of paper and absence

of printing technology. During the Buddhist period, our numbers were increased and we were used more by teachers and essentially as reference by students. During the medieval period, quite a few of us had our origins in Persia and we assumed a bigger role in the teaching-learning process. Our stress at that time was more on religious teachings and our organisational aspects were ignored. In fact, our production techniques were quite crude (Goel and Sharma, 1987). We began to enjoy the absolutely superior position that we do now during colonial times. In precolonial India, the teacher had complete control over the curriculum – i.e. what is to be taught, the form of pedagogy employed i.e. how it is to be taught, duration of the academic term, i.e. in how much time the student was supposed to know the content and assessment of the content transacted. (Kumar, 2005). However, with the introduction of British controlled/prescribed formal system of school education and more so, advent of a standardized, uniform and apparently impartial system of examination by the colonial power, things changed miraculously for us and we were elevated to a position of enormous power in the formal school system. This happened because there

emerged a significant difference of views around 'what was that knowledge that was worthy' of being transmitted to the next generation. There was a debate on both the content and medium of instruction to be used in schools, between the Orientalists and the Anglicists. Macaulay's Minutes of 1835 and Sir Charles Woods' Despatch of 1854 firmly established the superiority of knowledge of the western world and English as a language over indigenous knowledge system and vernacular languages. With a rigid, alien and distant curriculum far removed from the lives of ordinary Indian children, fixed/inflexible academic terms and a centralised examination system that tested all students uniformly and rewarded/penalised equally, there was a need to bring out a more or less standardized resource i.e. "us" which contained common content to be uniformly used across schools/children/social locations. We completed the requirements of a predetermined syllabus and also catered to the needs of impersonal examinations, where anonymity of both the examiner and examinee was not just maintained but celebrated. As the British in India acquired political and administrative stability, their interest in education gave a big fillip to our production.

With our introduction, there was a significant change in both the methodology of teaching-learning and increase in number of students taught. With our presence, a large number of students could be seated in different classes and taught simultaneously. The British quickly recognised our importance and used some of us, especially the social sciences for the whole country to inculcate ideas of loyalty towards the British government. Interestingly enough during the period 1905-47, we also began to be written by Indian authors reflecting the Indian

point of view. Our production was nationalised post Independence.

Relationship between Curriculum, Syllabus and Textbooks

While there are important differences between curriculum and syllabus, more often than not, they are used inter-changeably. One important view regarding them is that syllabus clearly indicates the precise information or amount of knowledge to be imparted by the teacher to his pupils, in each subject in the course of school year. Whereas the curriculum refers to the kind of educational activities the teacher needs to undertake to fulfil the requirements of the syllabus. While the syllabus prescribes the content of the teaching to be given, the curriculum prescribes the method to be used. A curriculum is more concerned with education the children should receive from the school and indicates the procedures, methods and activities by which such education is to be provided. The former is binding on the teacher whereas the latter imposes no such restrictions on the teacher who is free to use her autonomy (Dottrens, 1962). Curriculum is a broader term which encapsulates the larger meaning and purpose of education and the kind of society one envisions to have and the linkages between them. A curricular framework, we would imagine, is a bit more broad, pertaining to a set of guidelines by which a curriculum is to be prepared. However, it is also possible that these differences are merely at the level of semantics and practitioners rarely make such distinctions. A school system which is syllabus bound would depend more heavily on us where as system which recognises the legitimacy of a curriculum, would give far greater professional autonomy to its teachers and use us as only one of the multiple teaching-learning resources.

There was no formal category of curriculum which existed in pre-Independent India. What perhaps was prepared and reached the schools was the grade-appropriate syllabi for different classes. Curriculum was still an alien idea in the discourse on school education. Even if the term curriculum was used, it was used interchangeably with the word syllabus. The idea of curriculum is a relatively new entrant in the public and policy discourse on education. In India the planning and the organisation of school education has typically taken place around the construction of syllabi and textbooks. It was only in 1976, after education became a subject on the Concurrent list, that the National Council of Education Research and Training (NCERT) attempted a small exercise to construct a Curriculum Framework. This idea took more formal shape after the advent of New Education Policy 1986. In 1988 the first NCF was developed (Sarangapani, 2009). Following this, was NCF-2000 which underscored the significance of Indian culture and civilisation. The latest curriculum framework which was prepared in 2005 sought to make linkages between the child's experiences of schooling and their eventual drop out/retention in school. It emphasized a constructivist view of knowledge which underscored the importance of making linkages between child's experiences at home and knowledge acquired in school. It articulated the need to move beyond textbooks and break the unholy nexus between textbook content and questions asked in the examinations.

One would imagine that while the syllabus broadly indicated the nature of content to be covered, it did not either specify the resource to be used for transacting the same nor specify the exact content to be transacted. There could be several resources—print,

non-print and multiple experiences which could be harnessed to facilitate the transaction of the content thus prescribed. However, the examination system expected a more or less verbatim reproduction of the content in us since we were prescribed by senior bureaucratic authorities in these schools. Both teachers and students found it difficult to relate to us—our language, idioms, knowledge represented which was very different from the lives, cultures and languages of teachers and children who were forced to engage with us. Even though they found it difficult to comprehend us, they did not refer to/or use any other resource because the exams were almost entirely based on content written in us. In turn, the results of these examinations determined not only the position and job of teachers but also the grants-in-aid received by schools from the government. After India attained independence, we feared that our position and status may undergo change but surprisingly since the roots of the colonial education system had been dug so deep in the Indian soil, the nexus between curriculum, syllabus, examination system and us got further entrenched and strengthened. We continued to rule the roost, dictate the pedagogic discussions in the classroom, and occupy central place in the examination question papers. In fact, it would be more appropriate to say that we are essentially written to convey information or facts, rather than to make children think or explore, the larger aim being to help children pass the examination (MHRD, 1993). It was also said, that both the teachers and parents constantly reinforce the fear of examination and the need to prepare for it in the only manner, that seems practical, namely, by memorising a whole lot of information given in us and our close associates i.e. guidebooks

(ibid). We have been called the de-facto curriculum (Kumar, 2005) and our school pedagogy said to be guided by a textbook - culture. This essentially means- "teaching in the subjects is based on textbooks prescribed by state authorities, the teacher has no freedom to choose what to teach, resources other than the textbook are not available in the majority of schools, and where they are available they are seldom used and assessment during the year and year end - is based on the textbooks." (Kumar, 1988)

What we intend to highlight in this paper is our plight that despite playing such an important role in the school system, we are often criticized and condemned primarily for two reasons.

1. For the way in which we have been Conceptualised and Written

We perform function within a rigid format which includes the syllabus, our prescribed size and number of maximum pages. Different bodies—both private and government either individually or collectively try to write us. Since most often in the past we were written by experts and senior University Professors (engaged by Public bodies established for our preparation and production) who did not really have a sense of how children in school system learnt, their developmental needs and the social - economic - cultural backgrounds they came from and the time available for transacting a particular idea or concept in class, they often wrote and presented us in terse language, with little or no humor or examples from children's lives or the language they spoke at home. We were held centrally responsible for a system in which students face enormous burden in school, a system where there was no joy in learning and a system where, "a lot is taught but

little is learnt or understood". It was suggested that more school teachers should be involved in preparing us since they have a better understanding of how children learn (MHRD, 1993).

Besides this we have often been accused of being pedagogically barren, didactic, authoritarian in tone and more importantly, perpetually symbolic violence on members of certain disadvantaged communities. We are often found to be insensitive to women, members from dalit and tribal communities, poor and religious minorities. Apparently preparing us is a profitable venture therefore, several private publishers also who have little or no knowledge of the subject do not hesitate in writing us. This does not mean that those of us who are produced by the government are pedagogically sound, socially sensitive and conceptually strong. The states don't often have the resources which are at the disposal of bodies like NCERT and therefore struggle to make good books. Moreover, there is absolutely no centralised impartial authority which screens us and sets quality standards. Schools affiliated to Central Board of Secondary Education (CBSE) and state boards use us only when we are made by government bodies entrusted for this task. Some of them may even have the freedom to use our private counter parts. Schools affiliated to Indian Council of Secondary Education (ICSE) by and large use us when we are developed by private bodies. While it is possible that each of these bodies has some parameters laid down for our preparation and evaluation, it is important that we go through rigorous quality control mechanisms where any of us, if found violating constitutional norms or containing errors of the kind discussed above, may be banned and deemed unfit for use.

2. The way in which we are used in Classrooms

It's a known fact that no school in India can really do without using us in educating the children. It's possible that some schools may delay the process and evolve their own mechanisms and resources to teach and engage children. This flexibility in our use is more feasible at the primary classes or perhaps in schools which have a non conventional view of education. However, in most conventional schools we occupy a central position in both the child and teacher's life. Its possible that they may dislike us and consider us the bane of their lives, but they also know for sure that we are the only resource which helps them in getting better marks in conventional examinations. Moreover, as one approaches the senior classes where students have to prepare for Board exams we become their essential vitamins and nutrients without which their academic progress would be severally retarded. Several policy documents and reports in the past while recognizing our importance have also pointed out that we should be used as one of the several resources for teaching learning in schools and not as a singular resource. Suggestions have also been made about the fact that we should be prepared by diverse agencies including contributions from civil society at multiple levels so that we are close to that child's life who reads and engages with us. A singular, standardised resource like textbook in a huge heterogeneous society like ours will not represent all children's lives and a majority of them will always feel alienated and left out. Moreover, it will lead to only a particular kind of learning and hence jeopardise the entire meaning of learning. Similarly, while we have tremendous advantages, we cannot possibly encapsulate all that

the child needs to know and learn. Moreover, children learn in different ways and its important that they are provided with a range of resources that cater to their needs, learning styles and contexts.

Not only are we aware of the problems plaguing our form, content and use, but we are also aware of the numerous suggestions given by various committees set up for the task, including policy documents. The NCF-2005 suggested a list of foundational assumptions that can help in evaluating materials. These assumptions pertain to the nature of society one would like to live in, role of education in achieving that, assumption about learning and assumption about children and their context. Its strongly reiterates the need for preparing not just a variety of textbooks but also other materials because "No one textbook can cater the needs of different group of students" (NCERT, 2005).

In keeping with the spirit of this argument, the position paper of the National Focus Group on Curricular Syllabus and Textbooks reiterates that rather than trying to serve as a self sufficient fully adequate resource, any good textbook should leave the child to interact with the environment, peers and other people rather than transferring knowledge as a finished product (NCERT, 2006). More than focusing on the criteria for evaluating books, it thus gives a direction in which we should be used and a flavor of the way in which we should be written. It articulates that stress on students can be reduced if textbooks writers focus on elaboration of concepts, activities, spaces for wondering about problems, exercises encouraging reflective thinking and small group work leaving the definition of technical term to a subject dictionary (NCERT, 2005).

We have never claimed to be the only pedagogic resource in a school system. We are aware of our strengths and recognise our limitations. We are simply a tool, one of the several pedagogic mediums. How we are conceptualised, written and used depends on factors

beyond our control. It is therefore our request to all people/organisations responsible for writing us; setting question papers for examinations and teachers and even the policy makers and curriculum developers to not give us undue importance but to prepare and use us sensitively and sensibly.

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Trying to be Someone Else

A modern day teacher is under enormous pressure to perform. But more importantly to convince all and sundry that she is indeed performing. Almost everyone outside the classroom appears to be an expert, itching to tell the teacher how to do her job.

To be fair to all those unsolicited advisors, they are legitimate stakeholders in the education of children. They could either be parents of our students or citizens of the larger community in which all of us reside. Education is a process of socialisation and as teachers we are performing our jobs on behalf of this community.

At the same time, not all of these advisors are informed about the process of education. As trained professionals it becomes our responsibility to demonstrate that we are equipped to perform our duties well and we are indeed doing so. A positive way of warding off the interference is to demonstrate our efficiency at our job and establish that we are in control and things are happening the way it ought to.

It is in this act of demonstration and asserting their professional position that teachers are finding the situation a little confusing. Modern day technology developments have further aggravated the problem. On the one hand, the rapid access to information of all kinds provides a false sense of confidence in the knowledge gained. It is so easy to believe one understands the problems of teaching learning. On the other, news channels eagerly peddle every tid bit of negative news about our classrooms, painting us all with the blackest of

paints. For every step we take, there are dozens of opinions about how we could have done it differently.

How do we react? Do we react at all? We will try and explore this issue and see how we can harness the same technological marvels to redeem the situation.

Changing Course in our Technology Explorations

This argument is not about the wonders of modern information and communication technologies. There is so much said about it everywhere. Many of us teachers, who have had the chance to possess a personal device -- a laptop or a smartphone have fallen in love with it. There are at least a few times every day that the inevitability of this invasion into our lives hits us. How did we ever manage without this piece of glass and metal and the connection it establishes with the world outside? Again there are a number of us who have not yet been bitten by this bug and will spend hours arguing against the use of such technology. Let us for the time being concentrate on the few of us who have crossed the road, possess a device, do not require too much convincing about its utility and have the desire to explore its use in our classrooms.

Over the last few decades a number of demonstrations of what role technology can play in classrooms have been made. Teachers have been called upon to adopt these. Some of us have done so too. From early experiments with power point slides, to flash based interactive packages, to present day attempts at

using interactive smart boards, sales persons have promoted a variety of multimedia content, which can be displayed in the classroom. Content developers have also systematically mapped all chapters of all textbooks, creating digital content resources. A large number of schools, particularly private schools have established computer facilities to use these digital content.

The issue with these attempts is the following:

It disengages the teacher, taking away from her, the primary role of nurturing student abilities;

It reduces students to passive consumers of packaged information;

It distorts the purpose of teaching learning, dumbing it down to mere content delivery;

It dismantles the very educational process in the classroom.

How can the use of educational resources developed with so much effort and investment of creative energy be so harmful. As we indicated earlier, digital content development has been primarily by persons outside the classroom process. Their angst has been against boring classrooms. They further have a mistaken notion that passing on information in textbooks to children in interesting ways is what classrooms are about. Together their model of supporting teaching learning, therefore, is to provide colourful, informative projected aids for the teacher to use.

To say the least, a teacher's role is far more. A textbook is merely a teaching aid. The job of an English teacher, for instance is to make children proficient in the English language and not to transact the English textbook. The process of learning the English language requires that the student is engaged with a variety of forms of text,

listens to a variety of communication, acquires a variety of language skills, practices these skills through the original production of language, and in many creative and imaginative ways immerse oneself in the use of language. The teacher on her part has to create an environment where students can engage with the language, obtain critical corrective feedback, hone their skills and become efficient and creative users of the English language. The poems, the stories, the essays and the exercises in the textbook become convenient opportunities for engaging with the English language. By extension, it is also obvious that the mere transaction of the textbook would constitute a very limited exposure.

When a packaged content is offered to a teacher, it essentially reduces the teachers role to show and tell. Her own engagement with what is to be taught, how it should be adapted to her students' needs, how it is to be creatively packaged, made relevant and interesting -- her role as a curriculum arbiter is completely taken away. Even when a teacher teaches the textbook alone, she loses a great chance at enhancing students learning. Digital resources which focus on show and tell tends to compound this issue.

For the same reasons, student engagement with learning is stunted by the use of such resources. In the language example we used, the students active engagement is restricted to mere listening. Opportunities at production of language become severely limited. Opportunities at creative expression -- theatre, song, speech, debate vanish. Students are reduced to passive consumers of information and do not develop the skills or the knowledge of the language.

Across different subjects we teach at school, various aspects of a students' knowledge, skills, personality

are nurtured. Teaching is a vehicle to provide students opportunities at learning. And learning itself is the process through which various faculties of students are developed. Active engagement with the process of education is therefore the key to both the teachers' teaching and students' learning.

Right orienting and Right Sizing our Expectations

What then should be our arguments for using technology in the classrooms? What forms of technology are better suited to teaching learning? How do we conserve and in fact catalyse the active role of a student and the teacher in the educational process?

The distinguishing features of modern day information and communication technologies are the following:

Connecting with the world;

Connecting with each other;

Creating with technology.

The world wide web hosts millions of websites and has emerged as the largest possible library. Assisted by search engines, retrieving information of our choice is just a click away. Schools do not usually possess large libraries, which are constantly updated. Keeping ourselves at the cutting edge of our subjects, well informed about the developments in our areas of interest. Not only does it satisfy our information needs, but also provides the technology tools, which could change the way we present our subjects in the class. Being Connected to the web therefore is an essential requirement. Coupled with a strong search and retrieval skill, the world of knowledge would well be at our fingertips.

The best of teachers live professionally isolated lives. In smaller schools, we are likely to be the only teacher in our subject. Even in larger

schools, we may not always have the benefit of the knowledge and experience of a fellow senior. The communication possibilities of the internet opens out possibilities, which were hitherto impossible. Professional groups have begun to emerge, sharing and supporting fellow colleagues. An email is so convenient, that a request for support is very likely to be responded to. Forming a network of fellow teachers and together exploring our interests is a sure way of breaking professional isolation.

Unlike radio, television and cinema, which are essentially push technologies, meaning thereby that we can at best consume it. Interaction with the media, asking questions of it, modifying it to see what happens has never been possible. The advent of computers and software applications has opened up all these possibilities. We can also create our own content, be it plain text, a set of pictures, a drawing or diagram, even a song or video. Modern day devices have made it extremely easy to create very sophisticated content presentations or resources. Together with our students, fellow teachers and the community, the creation of relevant and appropriate educational resources is well within our reach. Not only will this satisfy our needs better, but also give wings to our imagination and creativity. The satisfaction of creating our own resources, sharing it with our colleagues and being appreciated is perhaps the most important gain we could aspire for.

Being Ourselves

Overall, modern day information and communication technologies can be a much needed asset to our professional growth. Active and critical engagement with it, developing our skills of working with it, making the right demands can be an exciting adventure in itself. It can

also enliven our classrooms. But far more importantly, it helps us recover our professional identities as the real experts of teaching learning, who can

make the difference to our students and through them to the world of the future.

Teaching of English in India –Issues and Concerns

Abstract

Teaching English as a second language requires consideration of various aspects of language learning. First and foremost, we need to appreciate the fact that India is a multilingual country and English does not stand alone, it needs to find a place along with other Indian Languages. Approaches such as the communicative approach, the natural approach and the whole language approach, which have recently gained momentum in India, all lay stress on providing meaningful, communicational chunks of language to the learners. Language is best acquired through meaningful contexts and languages are learnt implicitly and not explicitly. Teachers too need to develop their own reading, writing, speaking and listening skills, so that they can help learners improve their skills by providing appropriate opportunities and doing activities with the learners and be able to use language in an integrated manner and enable the learners to develop their creative and critical faculties. This in turn will facilitate them to study and understand other subjects better. After all, language cuts across all the subjects included in the curriculum.

The following paper is based on the position paper of the National Focus Group (NFG) on Teaching of English and the National Curriculum Framework 2005. Herein, I will give an overview of the introduction and teaching of English in India.

Teaching English as a second language requires consideration of various aspects of language learning. First and foremost, we need to appreciate the fact that India is a multilingual country and English does not stand alone, it needs to find a place along with other Indian Languages. Today, there is an increasing demand for introduction of English from the Primary Stage itself. The reasons being people associate it with quality in education and also want to participate meaningfully at the National and International level (Patil 2003). We also find that a variety and range of English teaching situations prevail in India. English is no longer looked upon

as a colonial language which was top heavy and neglected the masses but as a language that is perceived to open up opportunities (Nair 2009).

There is a demand for English medium schools because people feel that by learning English they will get better opportunities in life. The introduction of English in India is in fact a matter of social as well as political response to people's demand to introduce it at the very initial stage of schooling. The expectation that the system should respond to these demands has resulted in a mushrooming of private English medium schools. State school systems have started introducing English between classes 1 to 3. English is in fact being introduced from class 1 in most of the states in India.

The level of introduction of English is a matter of State policy in India. Since, education is on the concurrent list of the central government and the state governments; states have

the discretion to introduce English as per their requirements and demand. However, it is expected that they must ensure the availability of resources such as materials and teacher preparedness. The most pressing issue therefore, is developing a sound pedagogy. Given this, we should be able to ensure basic English language proficiency, in about four years of the eight years of compulsory education, irrespective of the level of introduction of English (NCF 2005, p. 39). Without sound pedagogy it is not possible to achieve this even if English is introduced from Class 3.

There are a variety of teaching situations prevalent in India. In English medium private schools English is introduced from class I and both the teacher and the learner have adequate exposure to the language. In new English medium schools also English is introduced from class I due to parental demand but teacher preparedness and the learners' exposure to the language is not up to the mark. In government aided schools, teachers' proficiency is low and the students' exposure to English language is also minimal. In government run municipal-corporation schools both the teacher and the learners' exposure to English Language is negligible. Further there can be variations within these types of schools. N. S. Prabhu (1987, p. 3) suggests that "typologies of teaching situations...should be seen as an aid to investigating the extent of relevance of a pedagogical proposal". Hence, we also need to understand how children acquire and use language.

Language teaching and learning lay emphasis on a learner-centered approach. According to Chomsky (1986, p. 8), children are born with an innate Language Faculty and this has two important pedagogical consequences. If children are given adequate exposure, they acquire new languages with ease.

Secondly, the focus in teaching should be more on meaning than grammar. Linguistic tools can and must play a significant role in developing a child's cognitive abilities. This would be better than teaching normative rules of grammar (NFG on Teaching of Indian Languages, 2006, p. 1).

The National Curriculum Framework 2005 states that the goals for a second-language curriculum are twofold, i.e. "attainment of a basic proficiency, such as is acquired in natural language learning, and the development of language into an instrument for abstract thought and knowledge acquisition through (for example) literacy (NCF 2005, p. 39)." We need to have a holistic approach to language teaching with the objective that the learners are able to use language effectively and meaningfully. They should be able to listen and read with comprehension and should be able to draw inferences. They should also be able to speak with effortless expression and write with coherence.

Approaches to Language Teaching

If we look back, in the 1950's English was taught by the grammar-translation method. The structural approach to language teaching was in practice. However, these methods did not yield the desired results. It was found that language learners understood the structures of language very well but when it came to using the language in real life situations, they could not use it effectively. By the end of 1970s, "Chomsky made a fundamental distinction between the conscious learning of a kind of knowledge that is constructed culturally through painstaking, cooperative effort over time (such as scientific knowledge), and knowledge that seems to naturally unfold in the human mind in the presence of experience, where the

complexity of the system that is learnt far outstrips what has environmentally been presented.... Moreover, the planned and systematized presentation of language inputs was later shown to be out of step with learners' internal learning sequences. The relationship between the language presented and the system internalized is non-linear, being mediated by the learners' mental grammar". We note, however, that the Chomskyan use of the term competence, in fact, subsumes both systematic ("grammatically") and acceptability. It denotes the ability to use language in a variety of contexts spontaneously and appropriately," (NCERT, 2006).

Krashen while talking about the Natural Approach distinguishes between language acquisition and language learning. Language acquisition is implicit and leads to fluent use of the language. Language learning is deliberate and through instruction. The emphasis, thus, shifts to providing meaningful contexts to the learners rather than following the behaviourist approach to language learning.

During the 1980s, the communicative approach to language learning was practiced which was useful for learners who had adequate exposure to the language. However, in a country like India where diverse teaching and learning situations prevail the acquisition of a basic competence in the language is needed. Approaches such as the Communicative Approach, (Widdowson 1978), the Natural Approach (Krashen and Terrell 1983), and the Whole Language Approach, which have now gained momentum in India all lay stress on providing meaningful, communicational chunks of language to the learners. Learners may or may not get this environment outside the school, so such inputs have to be provided in the classroom.

To achieve this, it is essential to build upon the existing knowledge of the learners and teachers should have confidence in their knowledge of the language. "Therefore, input-rich methodologies such as Whole Language approach, the Task-Based, and the Comprehensible input and balanced approaches which help in the exposure to the language in meaningful contexts were considered appropriate." (NCERT, 2006) While providing input-rich meaningful contexts one has to keep the following in mind.

- ◆ learners' home language
- ◆ multilingualism
- ◆ joyful learning situations
- ◆ going beyond the textbook
- ◆ connecting learning to the world outside

Goals of Language Learning

The twin goals of Language learning are that firstly, the learners should be able to use language for basic communication and secondly, they should be able to use it for higher knowledge i.e. literacy. Therefore, to teach English as a second language one needs to develop a language-across-the-curriculum perspective. Language is best acquired through meaningful contexts and languages are learnt implicitly and not explicitly. Learners comprehend and communicate the message through listening or reading for meaning. Therefore, an input-rich communicational curriculum is necessary to lay a sound foundation in second language learning. To provide this in the classroom the teacher needs to:

- ◆ Create conducive classroom environment and ensure that all students participate.
- ◆ Use imaginative and innovative practices appropriate to different situations
- ◆ Connect language learning to the learners' daily life, culture and society.

- ◆ Plan and use activities effectively in the classroom.
- ◆ Create class libraries
- ◆ Use role-play and storytelling as a strategy to teach all the four skills in conjunction.
- ◆ Reflect meaningfully on incidents which occur in day to day life.
- ◆ Use media inputs such as magazines, newspaper etc. in the classroom.

To create such an environment in the classroom, teachers should be thorough with the textbook and other related learning materials such as books on language and literature, magazines, newspapers, radio and audio-video materials. At the same time teachers should also show respect for the linguistic diversity in our country. Multilingualism is inherent in our Indian identity and should be used as a resource, in classroom teaching strategy. Improving linguistic skills in one language improves it in other e.g. reading failure in one's own language adversely affects second language reading. Krashen (1985) points out that "(while) concurrent translation is not effective", the use of two languages in the classroom can be "done in such a way as to provide comprehensible input in the target language, using the first language to provide background information". Teachers should develop their own reading, writing, speaking, listening skills, so they can help learners improve their skills by providing appropriate opportunities and doing activities with the learners where in they are able to use language in an integrated manner. Helping them develop their creative and critical faculty. This in turn will help them understand and study other subjects better.

This argues for an across-the-curriculum approach that breaks down

the barriers between English and other subjects, and English and other Indian languages. Therefore, for language learning an input rich environment is necessary where there is a lot of scope for meaningful communication. A curriculum that engenders such a teaching practice lays the foundation for spontaneous language learning. After all, language cuts across the curriculum.

At the initial stages the aim is to build familiarity with the language so that the child builds a working knowledge of it. Children develop a natural ability in languages available in their immediate environment. Where English is not a part of the environment, the classroom needs to provide the opportunity for its acquisition in meaningful communicational contexts. A number of researches (Prabhu 1987, Krashen 1985, Elley and Magubhai 1983) have shown that language is acquired when attention is focused not on language form, but more on the meaning of the message. The 'burden of languages' is nothing but the 'burden of incomprehension'. (NFG on Teaching of English, 2006, p. 5) Such a situation arises when language is taught as a set of rules and not as a mode/carrier of coherent textual meaning. The endeavour therefore should be to maintain a balance between comprehension and acquisition of skills. For this, a 'meaningful language-learning environment' is strongly recommended. The importance of the same has also been recognized by cognitive theories of learning and language-learning.

In India where a variety of teaching and learning situations prevail, the learner can receive the language input that is appropriate to her/his age outside the classroom as well. The classroom should not be a limiting factor in the acquisition of knowledge of

the language. Therefore, the attitudes and motivation of learners do play an important role in language learning. At the same time, the attitudes of the teacher and parents to encourage the learners also contribute in successful language learning. Second/foreign language learning is influenced by certain social psychological variables such as aptitudes, intelligence, attitudes, motivation and motivational intensity (NFG on Teaching of Indian Languages, 2006, p. 4).

Constructivism is a theory about learning and not a description of teaching. Constructivism's central idea is that human learning is constructed within a specific context. Earlier English Language Teaching focused on learning a few sentences by heart. But now we have to create an environment where construction of knowledge takes place. Learners should be provided with meaningful language inputs so that they build a working knowledge of the language. "These inputs include textbooks, shared reading of other print materials such as Big Books, class libraries, parallel materials in more than one language and media support in the form of learner magazines, newspapers, columns, radio/audio-video cassettes." (NFG on Teaching of English, 2006, p. 6)

An input-rich communicational environment can also be created by using display charts, poems, stories, and children's project work. Other materials include reading cards and very short stories. Learners can be encouraged to bring texts that they enjoy reading such as cartoons, jokes, anecdotes etc and for model reading and listening books with audio cassettes can be used as a resource. For example, role-play and story reading can be developed into a class room methodology. Reading stories aloud, repeated reading, choral reading, story

retelling, shared reading-all these activities build on existing language proficiency because the learners are exposed to a common pool of vocabulary and sentences and gradually these words and sentences become part of their spoken language. As the teacher reads, pupils become familiar with the story in spoken language and the illustrations and subsequently develop acquaintance with the print code/medium. Pseudo-production and role play etc also help in the development of the language ability of the learner. Repetition coupled with gestures taps into children's physical energy. Total physical response (TPR) where children listen, repeat and physically respond to a song or a rhyme or a set of instructions sustains the interest of the learners thereby increasing the amount of language learning (Joan Shin, 2006, p. 3).

These approaches and methods should be all inclusive and according to the needs, interest, cognitive development and age of the individual learners. The input that the learner receives at the primary level serves as a base for higher stages where teaching of English aims at developing higher order skills. The resources that are available with the learners should therefore be used optimally to reach the target language e.g., the mother tongue, knowledge of numeric, conventions, gesture, conjectures, etc.

English language does not stand alone and needs to find its place along with other Indian languages (NFG on Teaching of English, 2006, p. 3). Every possible effort should be made to build bridges between the languages of home, peer group and neighborhood languages on the one hand and school on the other. It is important that English is not contextualized in a western ambience but is taught through a contextually rich local perspective. All

this implies that teacher and learner autonomy is needed. Along with the textbooks, learner-chosen texts i.e. articles, anecdotes, cartoons etc. that learners bring to class to share could be used.

Vocabulary and grammar should also be taught in context. Teaching grammar and vocabulary in isolation does not help in language learning. Teaching grammar in context makes language learning richer and more meaningful. Grammar can be introduced after basic linguistic competence is acquired, as a means of reflecting on academic language and an intellectually interesting activity in its own right. Some grammar is in any case necessary for the ability to meaningfully make use of dictionary entries. For example learner-dictionaries now incorporate a fair amount of “grammar” and usage as notes and in their coding. “Grammar is not a route for developing primary or usable knowledge of language, but it can serve as a tool for increasing the construction of language.” (*Postition Paper on Teaching of English*, 2006)

Similarly, teaching literary texts in the classroom requires proper handling of the texts. The aim should be to help learners understand and appreciate the text and thus, construct their knowledge. In this context one should go beyond the textbook and connect knowledge to the world outside. Evaluation is another area of concern where teachers need to change their approach and perspective.

Objectives of Language Teaching

Through teaching of a language we must develop the:

a. Competence of Learners to Understand What They Hear: A learner must be able to use various non-verbal cues coming from the speaker for understanding what

has been said. They should also be able to understand in a non-linear fashion by making connections and drawing inferences.

- b. Ability to Read with Comprehension:** Students develop the habit of reading in a non-linear manner. They should be able to construct meaning by drawing inferences and relating the text with their previous knowledge. They must also develop the confidence of reading the text critically and ask questions while reading.
- c. Effortless Expression:** They should be able to use communicative skills in a variety of situations. They must be able to engage in a discussion in a logical, analytical, and creative manner.
- d. Coherent Writing:** Writing is not a mechanical skill; it involves a rich control of grammar, vocabulary, content and punctuation as well as the ability to organize thoughts coherently using appropriate linkers etc. Learners should develop the confidence to express thoughts effortlessly and in an organized manner. The students must be encouraged and trained to choose their own topic, organize their ideas, and write in a logical manner. This is possible only if their writings are seen as a process and not as a product. They should be able to use writing for a variety of purposes and in a variety of situations, ranging from informal to very formal.
- e. Control Over Different Registers:** Language is never used in a uniform fashion. It has innumerable varieties, shades, and colours, which surface in different domains and in different situations. These variations, known as *registers*, should form a part of a student’s repertoire. Besides the register of school subjects, a

student must be able to understand and use the variety of language being used in other domains such as music, sports, films, gardening, construction work, cookery, etc.

f. Learners' Creativity: In a language classroom, students should get ample space to develop their imagination and creativity. Classroom ethos and the teacher-student relationships build confidence in the latter to use their creativity in text transactions and activities uninhibitedly.

g. Sensitivity: A language classroom can be an excellent reference point for familiarizing students with our rich culture and heritage as well as aspects of contemporary life. There lies a lot of scope to make students sensitive towards their surroundings, their neighbors, and their nation. (NCERT, 2006)

The NCF-2005 states that the mother-tongue when employed as a medium of instruction at the initial stages can eliminate the linguistic and cultural gaps caused by the difference between the school language and the home language, especially at the primary level. Education in the mother-tongue will facilitate richer classroom transaction, greater participation of learners, and yield better learning outcomes. All efforts must thus be made to provide adequate facilities for this purpose and a positive attitude towards mother-tongue education must be ensured from all quarters. Mother tongue facilitates better cognitive growth, fosters healthier interpersonal communication skills and promotes conceptual clarity. (NFG on Teaching of Indian Languages, 2006, p. 15)

“The aim of English language teaching is the creation of multilinguals who can enrich all our languages; this has been an abiding national vision.”

(NCF 2005, p. 30) “Multilingualism is constitutive of the Indian identity.” (NFG on Teaching of Indian Languages, 2006, p. 20) It promotes social harmony and is a natural phenomenon which relates positively to cognitive flexibility and scholastic achievement. Multilingualism should therefore be given due place in the classroom alongside teaching of English.

Language teaching needs to be multilingual not only in terms of the number of languages offered to children but also in terms of evolving strategies that would use the multilingual classroom as a resource (NFG on Teaching of Indian Languages, 2006, p. 20). The skills that the learners have acquired in native language can be used as a resource to develop skills in L2. For example, the instructions given in English are difficult for the learners to comprehend on their own. To get the response in the target language the instruction of activities and exercises can be explained in the native language. Similarly, as the learners can read a simple story in their native language, the same story can be given to them in English to read and they will be able to read it easily with comprehension. The parallel texts referred to here need not be exact translations. Besides this, bilingual books and dictionaries can also be used in the classroom.

The first task of the school is to relate the home language to the school language. Thereafter, one or more languages are to be integrated so that one can move into other languages without losing the first. This would result in the maintenance of all languages complementing one another. Several studies (for example, Peal and Lambert 1962, Gardner and Lambert, 1972; Cummins and Swain, 1986) have shown that there is a highly positive relationship between bilingualism, cognitive flexibility and

scholastic achievement. Bilingual children not only have control over several different languages but are also academically more creative and socially more tolerant. The wide range of linguistic skills that they control equips them to negotiate different social situations more efficiently. There is also substantial evidence to show that bilingual children excel in divergent thinking. (NFG on Teaching of Indian Languages, 2006, p. 21) Now that we also know of the positive relationship between multilingualism, cognitive growth and educational achievement, there is every need to promote multilingual education in schools. The multilingual perspective also addresses concerns of language and culture, and the pedagogical principle of moving from the known to the unknown, local to global, familiar to unfamiliar.

Cummins and Swain (1986) made a very fundamental distinction between Basic Interpersonal Communicative Skills (BISC) and Cognitive Advanced Languages Proficiency (CALP). The language ability that is associated with BICS largely involves the skills to perform effectively in situations that are rich in context and undemanding at the cognitive level. The language of the here and now and that of peer group interaction belongs to the domain of BICS. It would appear that BICS level abilities have to be acquired almost afresh in every language, though in multilingual societies such as those of India they do get far more easily acquired through natural-acquisition processes. CALP-level abilities are needed to perform effectively in contextually poor and cognitively demanding situations. They would generally be acquired in tutored-language settings. For example, when a secondary or semi-secondary student is asked to write an essay on a topic with which he/she is not familiar, or to read a newspaper editorial to

critique it, he/she may have to invoke his/her CALP-level abilities. These abilities often tend to get transferred from one language to another. (NFG on Teaching of Indian Languages, 2006).

Teacher Preparation

Another important factor that needs to be looked into is teacher preparation in English language teaching. As the teacher is a role model for learners, the teacher's proficiency in or familiarity with the language is important. Specialist knowledge of grammar or literature is not required but they should be proficient in the use of language. The methods and approaches used by the teacher should be mutually supportive. Teacher education needs to be ongoing, onsite. Both pre-service and in-service teacher training at regular intervals are a must. The role of the teacher is to provide a classroom full of interesting things to encourage the child to construct their own knowledge and to have the ability to explore. The teacher's role is less direct and more subtle. The teacher is like a facilitator. The Position Paper on "Teaching of English" mentions that "the success of teacher proficiency in English is linked to the teachers' sense of satisfaction, indeed to his/her willingness to teach English (Krishnan and Pandit 2003)." This factor needs to be addressed in teacher-training programmes.

In a language class, the teaching approaches adopted and tasks undertaken should be such that they lead a child through the whole scientific process of collecting data, observing, classifying it according to its similarities and differences and making hypotheses etc. Thus, linguistic tools can and must play a significant role in developing a child's cognitive abilities. This would be much better than teaching normative rules of grammar. Moreover, this approach is particularly effective in a

multilingual classroom. The textbooks based on the new syllabus are prepared as a follow up to the National Curriculum Framework-2005 with a focus on a learner centered approach. Now that English is being introduced from an early stage, teacher training programmes both in-service and pre-service have to be addressed urgently. The textual materials provided in the new textbooks are comprehensive and notes for teachers given along with the texts are useful, yet to transact the entire textbook with its basic conceptual framework, might pose some difficulties to teachers who need to be oriented to the new approach adopted in these books.

Teaching for successful learning cannot occur without high quality assessment. Assessment, therefore, needs to be integrated with the process of teaching and learning. The greater the integration better will be the outcomes of learning. Assessment has to be so designed that it can be used as a powerful means of influencing the quality of what teachers teach and what students learn. While doing so, special care must be taken to ensure that it is humane and it enables the learner to grow in to a responsible and productive citizen. Assessment refers to

collecting information on the progress of students' learning using a variety of procedures, and evaluation refers to making judgments on the basis of the information collected. The process and purpose of assessment should shift from merely assigning grades/awarding marks to include constructive feedback and assist with the learners' improvement. Learner-centred teaching should also use assessment as part of the learning process.

Conclusion

Language learning is essentially a matter of acquiring in an integrated manner, the skills of listening, speaking, reading and writing; and of honing these skills for effective communication in the classroom, and beyond. In this light, the position of English has acquired a new status in post-colonial times. It has been realized that languages flourish in each others' company. Approaches to English Language Teaching too have recognized the same and have evolved accordingly. There is a sea change in the methodologies, selection of materials, activities conducted and assessment patterns. Linguistic post-modernity has indeed challenged the 'one-size-fits-all' approach of traditional English Language Teaching methodologies.

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New Curriculum to New Pedagogy in Multilingual Context

(... a journey in Jharkhand)

Challenges of Early Years

In 2001, children of Jharkhand found a new platform to begin their journey in education. During this year Jharkhand carved out of Bihar land saw the light of the day as a new state. The state is recognized as one of the richest states of the nation not only because of its minerals, but also for its rich multilingual and multicultural diversity, which is highly favourable for children's learning. However, the state struggled till 2014 to form a stable government. It saw more than 10 Governments, 10 Chief Secretaries, equal number of Chief Justices other than being ruled by the Centre thrice. Educational activities in the state were badly affected by continuous political and administrative instability, civil unrest, shortage of educational workers in the system, poor infrastructure, corruption, and several other social issues which affected children's life in different parts of the state. Even today the state is yet to establish a full-fledged SCERT.

Even after the historic curricular renewal at the National level in 2005, the state could not aspire to develop its own curriculum and textbooks. The state continued to use the National Curricular Guidelines and NCERT textbooks till the Right to Education Act 2009 was notified. Jharkhand developed its state rules to implement the RTE Act in mid-2011. Hindi textbooks of NCERT continued to be

used in classrooms. Dropout rate continued to be high in entry classes of primary and upper primary. Difference between home languages of children and school's Hindi medium instruction created challenges for children in schools in major part of the state.

A Slow and Steady Start

In this context, it was planned after the notification of the RTE Act to formulate the educational curricula for the state using the National Curriculum Framework 2005, and also the RTE act guidelines. It was planned to develop the whole curriculum of the state from the 'child right' perspective so that 'things to be done' in every aspect would be defined in a concrete manner. It was also attempted to interpret the overall curriculum development process with greater thrust on the issue of 'equity' so that issues related to children from poor economic backgrounds, tribal children, girls, children from minority groups, and children in difficult situations are addressed on priority basis.

Serious social issues of Jharkhand including child trafficking, child marriage, child soldiers, child labour, under-nutrition, etc. were also considered in a critical way while exploring possibilities for addressing all these in education. The issue of curriculum continuum was also looked into with a view to formulating overall curriculum development from pre-primary to elementary and secondary

along with teacher education so that the focus of 'quality with equity' is maintained throughout and the 'life-cycle approach' is given due attention in the process.

Team for Educational Planning

A small group of educational workers started the process interpreting this situation as the best opportunity to nurture the key principles of the NCF 2005 in a systematic way. The guiding principles are given below.

- a. Connecting knowledge to life outside the school;
- b. Ensuring that learning shifts away from rote methods;
- c. Enriching the curriculum so that it goes beyond textbooks;
- d. Making evaluation system more flexible and integrating them with classroom life; and
- e. Nurturing an overriding identity informed by caring concerns within the democratic set up of the country.

The group, named as Team Education, believed in creating a path through education for a society which would be based on quality, equity, equality, harmony, mutual respect and cooperation for everyone's development in the society as desired in the Indian Constitution. It aimed to nurture Anganwadis and Schools in every corner of the state based on these guiding principles.

Needed a Paradigm Shift in Educational Beliefs and Assumptions

Educational beliefs and assumptions required a paradigm shift in the thought process and action to move from a teacher centered pedagogical approach to a community supported, activity based pedagogical approach as desired under the Right of Children to Free and Compulsory Education Act

(RTE) 2009. At first the team, consisting of educational workers from different parts of the state, internalized the 'why' and 'how' of the guiding principles of NCF-2005 and also familiarized the planners with the new approach through a series of consultations in different parts of the state. In this process, the team members undertook situation analyses of various crucial aspects of education in the state thereby understanding the gaps and overlaps in policy and practices. Following aspects were identified as the initial ones to be studied.

It was felt essential to identify resource agencies and resource persons from different parts of the state for creating a 'critical mass' for curriculum development. The team searched for experts from universities, research and resource institutes, civil society organisations, tribal forums, government departments, teacher education institutions, teacher unions, school *Baal Sansads*, judiciary and media.

RTE Act emphasized on whole school development for whole child development. Accordingly the team attempted to look at all facts related to mother and child care including child nutrition, health, protection, water and sanitation, education, effective pedagogical strategies, equity in education, budget and programme management. This holistic view of the system provided the team a broad insight to think and improvise the bigger picture in a systematic manner.

M-TALL *akhra*...a Critical Step in Multilingual Context

At this stage the M-TALL *akhra* (a research cell on children's languages titled Mother-Tongue based Active Language Learning), Jharkhand Tribal Welfare Research Institute(JTWRI), Government of Jharkhand with

Unicef support was set up to study the language learning experiences of children in different parts of the state. The M-TALL *akhra* undertook a state wide socio-linguistic study in all districts. The study findings clearly indicated that in every village of the 24 districts of the state, home language of children differed from the school's Hindi language in a distinct manner. The study also indicated that 96% of children in the state do not speak in Hindi at home, playground or, market. They communicate in their mother-tongues, mostly tribal and regional languages.

Teachers, without any systemic instructions for recognizing children's home languages, did not pay attention to the home language/s of children and continued pedagogical transactions in Hindi, based on NCERT textbooks from class 1. Also content of the NCERT textbooks, in spite of being rich and age-appropriate, could not relate to the context of children in Jharkhand. It was distinctly understood that children did not understand their textbooks and teachers due to difference in language, attitude and context. Their language disadvantage build up day by day. Majority of children gave up in this struggle to continue in the alien atmosphere in class 1 itself. Other than this, the traditional pedagogical methods of rote learning spoiled the spirit of the NCERT books. Like in any other state, there was no harmonization in the beliefs and assumptions of teachers and teacher educators regarding how children learn and nature of pedagogy and assessment in children's learning.

In the initial days, M-TALL *akhra* collected a wide range of local learning resources in form of stories, songs, proverbs, riddles, games, dances, toys, art and craft, dramas, etc. other than information related to science and

mathematical practices in community in more than 9 tribal and regional languages.

Duty Bearers Familiarized with RTE Guidelines and NCF Guiding Principles

A child-friendly version of the RTE Act was developed in the name of '*Shiksha Mera Adhikar Hai!*' in Hindi and 12 other languages for higher advocacy at community level. For active community mobilization across the state, around 360 professional groups and reputed writers, singers and theater groups of the state worked together to develop 112 scripts and 160 songs on RTE touching upon 12 critical educational issues including quality, dropout, child marriage, child-friendly child-centered processes, learning assessment, etc. The 360 professional theater groups demonstrated key features of RTE Act through these scripts and songs in all districts inviting community for active participation in educational dialogue at school level.

Team Education followed the approach of NCERT's curriculum renewal processes of NCF 2005 by constituting 30 Focus Groups on critical areas. This included curricular areas and also issues which created challenges in education. Following are the themes chosen for the purpose.

Focus Groups for Position Papers

Each group read the position paper/s developed at the National level other than articles and books related to the position papers. Maximum time and energy was spent on discussing the 'new approach to learning' and the elements required to facilitate learning as proposed in learning theories. Many of the papers were used from Resource Enhancement Programme (REP) of TSG, NCERT's NCF 2005 related papers, curricular papers from

Chhattisgarh, Digantar's reflections in *Shiksha Vimarsh* and other papers, Azim Premji Foundation's resources and Vidya Bhawan seminars, reports. This significantly contributed to formation of a critical mass in the state with new beliefs and assumptions. The Team also had read a lot of works of Rabindranath, David Horsburgh, J. P. Naik, and Krishna Kumar.

Team Education drafted 30 position papers interpreting everything from the child's rights perspective. A list of the Position papers is given below:

S No	Title
1.	Main Bhasha Sikhungi
2.	Main Ganit Sikhungi
3.	Main Vigyan Sikhungi
4.	Main Samajik Vigyan Sikhungi
5.	Mein Angreji Sikhungi
6.	Mein kala aur nritya sikhungi
7.	Humari Shiksha ka Lakshya
8.	Humara Aaspas aur Sikhna
9.	Hum Adivasi bacche bhi Shikhenge
10.	Hamari Balpan ki shiksha
11.	Kaam dhandhe aur meri shiksha
12.	Meri Maa ki Bhasha aur meri shiksha
13.	Hamare Shikshak Aise taiyar honge
14.	Hamara Bal Priy Vidyalay – ek parichay
15.	Hamari Sansad aur hamari suraksha
16.	Hum bhi shikhenge (Balika Shiksha)
17.	Meri Shiksha ka mulyankan
18.	Hum bhi sikhenge (CWSN)
19.	Shanti Ke liye hamari Shiksha
20.	Shakshanik technique aur hamari shiksha
21.	Hamari Shiksha ke liye vyavastha mein sudhar

22	Swasth aur Sakriy rehne ki meri taiyari
23	Aapka sahyog aur mera shiksha ka adhikar
24	Hamara Pustakalay aur padhna
25	Ek Bal Priy Anganwadi mein meri shiksha ka arambh
26	Apna Swasthya Apne Haath (a school health and hygiene education programme)
27	Samuday Adharit Bal Vidyalay ki aur...
28	Hamara Shiksha ka Adhikar aur Adhikar suraksha
29	Hum hai Bal Patrakar!
30	Aap aise hamari shiksha mein madad karenge (Performance of duty bearers under RTE)

Curriculum Focused on Children's Learning

Based on the recommendations of these position papers, Team Education organized the content and formulated curriculum documents for Pre-School Education, School Education and Teacher Education. The draft documents were reviewed and vetted by a team from NCERT in 2014-15. The beauty of these three documents was the common belief and the assumptions which were maintained throughout regarding how children learn in early years, what needs to be the nature of schooling, pedagogical processes, teacher's role as a facilitator of learning, nature of learning assessment, role of community and special learning arrangements for children from disadvantaged communities.

New Textbooks for State

During the course of time, the state Government initiated preparations for developing own textbooks using the new curricular framework in 2015-16. Resource groups were formed

through the JCERT for different subject areas. Resource persons from Regional Institute of Education RIE, Bhubaneswar and National Institute of Education, (NCERT), New Delhi also assisted in the textbook development process. The resource groups consisting mostly of teachers from different parts of the state put in a lot of efforts to develop the textbooks for children.

Personally, I was greatly touched by their hard work where they referred to curriculum documents, position papers, textbooks and other subject related resource materials from different sources and designed content of their textbooks through mutual consultations. Illustrations were done by selected teachers, who displayed great interest and creativity to depict the necessary pictures in a contextual manner. Editing, layout and designing of the documents was also done by the subject teams in-house. In this process they celebrated each part of their achievements from time to time.

Learning in own Languages in Multilingual Context

The state took a historic decision when the Governor and the Chief Minister took interest in mother-tongue based early education for children where children's home language/s differed from school's Hindi language. Under the leadership of the State Education Secretary and JCERT, the language experts from different language groups of M-TALL *akhra* developed textbooks for classes 1-2 in 5 major tribal languages including Santhali, Mundari, Ho, Kurukh and Kharia. These textbooks followed the learning theories and recommendations of the NCF 2005 in nature, content and activities. On demand of the language communities, these textbooks initially developed in Devanagari script, were later adapted in local scripts Olchiki

(script of Santhali language) and Warang Kshiti (script of Ho language) separately. The specialties of these books lie in their roots which are very much related to their local cultures and traditions.

Content and Processes of MTB-MLE

Initiation of Mother Tongue Based Multilingual Education (MTB-MLE) in multilingual context is a new step for the state. In language books, it is aimed that children take part in a wide variety of language learning activities including stories, songs, riddles, toys, skits, games, jokes, dances, etc. which represent the best of literary features of those languages. These activities would provide ample scope to each child to interact with the texts, peers, teacher and other community members and would strengthen their language learning skills.

In mathematics a lot of cultural activities have been included in the books in the form of *rangoli*, market, shop keeping or, house making to enable children discover various aspects of mathematics and thereby make them think mathematically before they engage with mathematical exercises. In Environmental Studies (EVS) children are encouraged to explore surroundings and discover beauty in diversity other than understanding basic processes.

Other than textbooks, a variety of early grade readers have been developed in the form of big books, small books and picture dictionaries. Broadly, this creates a space for active association of community members to support and facilitate children's learning processes as community teachers.

As a follow up to the textbooks in tribal languages, textbooks based on similar principles have been developed in two regional languages including Odia and Bengali. The state Government has printed these textbooks in tribal

and regional languages and teachers of the related schools have been trained for implementing the community supported teaching learning processes.

Getting Ready for Formal Learning from Pre-school Days

There is an added emphasis on pre-school learning in the state to enable children from rural context to acquire school readiness before entering primary school. Authorities of both Human Resource Development (HRD) and Women and Child Development (WCD) departments have agreed to work on a quality pre-school education learning package to strengthen the initial learning phase of children in a collaborative manner. A National Forum on 'Quality Pre-School Learning programme in Rural Areas' was organized some time back at Ranchi involving all the key players in Early Childhood Care and Education (ECCE) in India including govt. officials, resource persons from 20 National and International resource agencies.

Other than the pre-school (ECCE) curriculum the state has developed a syllabus-cum-annual calendar (*Nanhe Kadam*) for 3-6 year olds and a pre-school learning package titled *Bhasha Puliya* for 5-6 year olds for their school readiness. After a successful piloting of the *Bhasha Puliya* package in 103 Anganwadis of Ranchi, the programme is being implemented in 1200 Anganwadis of 6 districts through active cooperation of community members in

the children's learning processes.

The MTB-MLE programme bears a strong potential for demonstrating NCF 2005 in an effective manner as it satisfies all its guiding principles in an integrated manner. This is illustrated through following examples.

a. Connecting Knowledge to Life Outside the School:

The physical and learning environment of the schools is enriched very much through community contributions in a form of learning resources. The campus of school, wall depictions, school gardens, classrooms – corners, walls, roof, learning content and co-curricular activities are designed with local flavour. This makes children feel like staying in a homely environment. All interactions and pedagogical processes are carried out in mother-tongues thereby enabling children to actively take part in all activities, understand those and articulate in their own way. Community members visit schools each day to assist in children's learning processes by sharing best of their learning resources, knowledge and skills with children, thereby sharpening their interest, imagination and creative skills in all subject areas. Consequently children learn and turn storytellers, singers, dancers, players, toymakers, riddle-makers, designers, painters, and leaders from early years.

Community members assist in their creative and technical development through following resource persons.

SamooH	SamooH to do	Resources
Kathaakaar (Storytellers)	<ul style="list-style-type: none"> Tells stories to children from memory or, from story books Makes stories interesting – showing pictures, toys, enacting, using puppets, etc. Discusses various aspects of stories Answers questions that children ask Makes children think and imagine Enables children compose stories Encourages children share their stories 	<ul style="list-style-type: none"> Stories in different languages Puppets for storytelling Toys for storytelling Stories based on games Stories based on riddles

SamooH	SamooH to do	Resources
	<ul style="list-style-type: none"> Collects storybooks from different sources and develops a small library in class/school Nurtures a sense of appreciation for stories and storytelling in children 	
Geetkaar (Singers)	<ul style="list-style-type: none"> Local singer sings educational songs with action, Guides children to sing together with action Encourages children to add new lines to songs, Guides them compose new songs and tune those, Compiles songs for children in class/school Nurtures a sense of appreciation for songs and singing in children 	<ul style="list-style-type: none"> Songs in different languages and in traditional lyrics Songs with action, paintings, dance, education, toys/puppets and musical instruments
Chitrakaar (Painters)	<ul style="list-style-type: none"> Draws simple figures in front of children Encourages children to try out similar way Appreciates children's ways of drawing Displays children's drawing on walls at home Guides sketching and colouring Uses painting with stories, songs, riddles Discusses the drawing and colouring experiences Nurtures a sense of appreciation for painting in children 	<ul style="list-style-type: none"> Folk art Art with locally available colours Art for expressing personal and social experiences for decorations and celebrations
Natyakaar (Actors)	<ul style="list-style-type: none"> Demonstrates own dancing skills before children Encourages children to participate in dancing Teaches different aspects of dances Guides individual and group dances Appreciates children's participation and innovations Relates to musical rhythms simultaneously Organizes cultural events in and around school involving children Nurtures a sense of appreciation for dancing in children 	<ul style="list-style-type: none"> Different traditional dances – tribal, folk, modern and educational Different musical rhythms Work with musicians Different cultural events
Vaadyakaar (Musicians)	<ul style="list-style-type: none"> Plays musical instrument before children Encourages and appreciates children's participation in singing, dancing and clapping Guides children how to play the tunes with locally available materials and also instruments Nurtures a sense of appreciation for instruments and music in children 	<ul style="list-style-type: none"> Different local musical instruments –nagada, mandar, banshi, tabla, harmonium... Different rhythms Musical sense development

Samooh	Samooh to do	Resources
Abhinay (Actors)	<ul style="list-style-type: none"> • Encourages children to enact their interesting experiences – hat, sand play, kitchen, marriage, cultural event, mother, teacher, father, etc. • Demonstrates how to act as per their way • Appreciates self-expressions of children – individually and in groups • Promotes repeated and diverse practices to enable children acquire skills and gain confidence • Organizes events before peers and community to sharpen skills and confidence of children • Nurtures a sense of appreciation for acting in children 	<ul style="list-style-type: none"> • Acting skills • Skits on different subjects – famous writers, actors, films, theatres, historical, patriotic, issue based,... • Short films • Children’s literary development
Rachnaa (Creativity)	<ul style="list-style-type: none"> • Teacher invites writers, poets, singers, painters, etc., to class/school from time to time • They compose stories, songs, paintings, etc., in consultation with children • Children learn how to compose stories, songs, etc. • They encourage children to compose stories, songs, etc. based on their interesting experiences • They appreciate and guide them how to be writers, poets, painters, etc. • All new creations are displayed in class/school 	<ul style="list-style-type: none"> • A wide range of stories, songs, poems, riddles, toys, games, etc., for use in class/school and community • Development of resource centre in village
Khilona (Toymakers)	<ul style="list-style-type: none"> • Toymakers collect all resource materials from community • A wide range of toys are made in partnership with children in and around class/school • Children make toys with the help of toymakers from time to time • Children enjoy toy making and learning through toys • Children’s innovations in toy making is continuously appreciated • The class/school develops a small toy museum for children 	<ul style="list-style-type: none"> • Toys made out of leaves, paper, wood, clothes, seeds, stone, clay, etc.; • Toy museum for learning purposes • Regular toy melas • Toys for decoration • Books/ films on toys
Jadoogar (Magicians)	<ul style="list-style-type: none"> • Senior people from community prepare easy and interesting magic for children using locally available materials. • They come to class/school and show 2-3 magical tricks to children each week for their fun and learning • They encourage children to practice and demonstrate • Together they design new tricks 	<ul style="list-style-type: none"> • Tricks with cloth, stones, seeds, coins, threads, etc. • Also science fun activities to enhance curiosity of children

SamooH	SamooH to do	Resources
Hasyakaar (Comedians)	<ul style="list-style-type: none"> • Teacher and samooH collect a good number of stories with sense of humour • They tell stories to promote a sense of humour • They invite new ideas from children and appreciate those • They compile appropriate jokes and humour • They enact skits with humour; they draw cartoons • They nurture a culture of sharing jokes and humour 	<ul style="list-style-type: none"> • Appropriate stories with a sense of humour; • Songs with humour; • Skits with humour; • Cartoons • Books and A/V materials on humour for children
Khel (Players)	<ul style="list-style-type: none"> • Khel samooH plans a wide range of games for children so that every child gets a chance to play with others each day • Participation in games is encouraged more than winning • Children are encouraged to plan and strategize for succeeding as a team • Fair play is appreciated than winning by cheating • Khel is used to break barriers and inhibitions of each child 	<ul style="list-style-type: none"> • A number of games: indoor, outdoor, • Games with locally available materials • Games for both boys & girls
Khoj (Explorers)	<ul style="list-style-type: none"> • Teacher constitutes teams who would take children out together to enable them conduct nature studies • Children under their guidance observe different things and discuss their different aspects and names • Together they make charts for displaying in class/school as a learning resource • They also collect samples during these visits including seeds, leaves, rejected nests, roots, etc. to exhibit in their class/school. 	<ul style="list-style-type: none"> • Charts on animals, plants, seeds, flowers, festivals, vehicles, life-cycles, local haat, cultivations, cuisines, etc. • These are useful learning resources
Paheli (Riddle makers)	<ul style="list-style-type: none"> • Teacher and Paheli samooH collect riddles from different sources. • Every week they sit with children of different age groups and discuss riddles related to the theme of the textbooks. • Children think individually and together to solve riddles with fun and understanding. • Sometimes paheli samooH attempts to create new riddles in partnership with children to enable them learn how riddles are created for new things. • Innovations of children are always appreciated. • Children are also encouraged to collect paheli from parents and share • Paheli collection and creation continues to develop a store of paheli in the class/school 	<ul style="list-style-type: none"> • Riddles are age old techniques to make people think and imagine. • Every child/ person likes riddles to solve and make others think. • In the process it enhances understanding about different things and events. • Riddles bank and books

Samooh	Samooh to do	Resources
Sajawat (Designers)	<ul style="list-style-type: none"> Teacher and sajawat samooh plan to collect and display a wide range of material from nature and community for displaying in classroom and school They invite community members to make small equipment related to various professions They collect natural products such as stones, seeds, dry flowers/ leaves/roots/ fruits, bird nests, etc. They also collect story books, ancient scriptures, etc. for familiarizing children with those A small local museum grows up continuously with these inputs and helps children learn a lot from those 	<ul style="list-style-type: none"> Collections include small equipment related to agriculture, fishing, music, painting, natural products, stones, ancient scriptures and idols, etc.
Swatchhata (Sanitation team)	<ul style="list-style-type: none"> Swatchhata samooh, and teacher guides each child to take care of self – eyes, nose, hair, skin, nails, ears, dress, shoes and mutual cooperation They guide children how to use broom, dustbin, soap, water, food, and toilets and maintain those. Together they clean campus, classroom, kitchen, and toilets and celebrate cleanliness They use different materials from time to time, clean those after use and keep those back in designated place/s They also share experience with parents to strengthen cleanliness drives at home. 	<ul style="list-style-type: none"> Class/ school ensures availability and use of broom, dustbin, safe drinking water, balanced food, soap, towel, handwashing with soap, clean toilets, etc.
Swasthya (Health team)	<ul style="list-style-type: none"> Teacher and Swasthya samooh familiarize children with balanced healthy food, exercise, healthy habits, and positive thoughts in daily life Conduct regular health check-ups and address issues Familiarize children with body parts and their basic functions through pictures from charts and books and also through related songs and games Promote cleanliness, deworming, and exercises through sports and games 	<ul style="list-style-type: none"> Charts and books related to children's health and healthy habits; Interaction with health workers; Songs, Stories and games.

Samooch	Samooch to do	Resources
Poshan (Nutrition team)	<ul style="list-style-type: none"> • Teacher and Poshan Samooch plan for balance in the daily diets of children both at home and class/school. • They guide parents of children how diets can be planned, and balanced using locally available resources • They familiarize children how balanced food helps them to be strong and healthy. • They also supplement through healthy habits and regular games to enable children practice thee and grow healthy. 	<ul style="list-style-type: none"> • Charts and books related to children’s nutrition and habits; • Stories, songs, games, riddles, skits to familiarize children with food values, and concepts of balanced diet.
Suraksha (Protection team)	<ul style="list-style-type: none"> • Teacher and Suraksha samooch design detailed strategies for protecting the mental, physical, psychological and social aspects of every child. • They familiarize parents and community members about what to do and what not to do • They strive together to create a child-friendly class/school, homes and society for children • They design charts and posters on what to do and what not to do for display in class/school and community places. • In case of violation of protection of rights of any child, they discuss together and plan to address the issue and preventive strategies. • They encourage and familiarize children to take care of themselves individually and collectively. 	<ul style="list-style-type: none"> • Charts and books related to children’s safety and protection • Information and strategies available for protecting every child’s mental, physical, psychological and social aspects. • Dos and Don’t s for children

Source: MTB-MLE approach, M-TALL *akhra*, JTWRI, Govt. of Jharkhand

b. Ensuring that Learning Shifts Away from Rote Methods:

Content of textbooks creates scope for each child to take part in a range of learning activities each day with the support of teacher and other community members. The hands on and minds on activities encourage children to observe, think, learn and apply own skills individually and collectively to create self-knowledge and skills. This process of socialization and knowledge/skill acquisition are key to the constructivist learning desired as per the NCF 2005. MTB-MLL provides the best scope for practicing constructivism in a rich manner. Textbooks work as guidebooks for

teachers to use the content in a creative manner and facilitate various learning activities as desired in different subject areas. Learning shifts away from rote methods significantly.

c. Enriching the Curriculum so that it Goes Beyond Textbooks:

Learning through the MTB-MLE curriculum guides, the learners go beyond the textbooks and touch the wide horizons of learning in different subject areas as they experience the best of knowledge and skills of their school and community through the above resource groups and their expertise. In this process they discover the beauty of concepts in different subject areas and experience the joy of

learning. This is much more meaningful and enriching for the learners than the learners memorizing facts and information in a mechanical manner. The more they explore, experience and discover the meaning out of their environment, culture and community thoughts, the bigger and sharper they grow as learners, thinkers, creators and leaders. They start taking higher interest in further explorations, thinking and applications to find more meaning in life and society. Textbooks as guidebooks assist in igniting their thoughts and imaginations whereas the pedagogical processes sharpen their knowledge, skills and abilities to apply their thoughts and ideas to address issues around for a meaningful change. This process of learning is a core necessity of the 21st century learning, which centers on these aspects very much.

d. Making Evaluation System more Flexible and Integrating them with Classroom Life

In the MTB-MLE curriculum learning assessment remains an integral part of the pedagogical process which reflects the nature of planning, preparation, observation, consultation, cooperation, creation and learning outcomes of the participants in the teaching learning process. The participants include children– the learners, teachers-facilitators of learning processes and community members- the catalyzers who take learning to new heights. The mutual cooperation and collaboration among these participants through the above mentioned processes help each one know effectiveness of their role and functions. When the above processes turn meaningful, the learners acquire desired knowledge, skills, interest and attitudes; the teachers find their own pedagogical plans and effective and efficient processes; and the community

resource persons feel valued and meaningful for children. This also provides regular feedback to all the concerned to understand emerging issues at each level and thereby design appropriate strategies to address those through mutual cooperation.

This approach to assessment does not center on paper pencil tests to measure how much the learner has memorized and produced, but it measures the depth of understanding and range of application of skills of the learners with their interest and abilities to grow as creative and technical personalities and also leaders. These skills get them ready as young professionals in a wide range of areas from young age and give them hope and confidence that they have learnt something meaningful in life which they can apply in the area of their own interest. This approach provides them a great scope to prepare for life and society.

e. Nurturing an Overriding Identity Informed by Caring Concerns within the Democratic set up of the Country

This approach to learning provides a different world view to all the partners of learning. In this collective learning process, every person feels valued – the learners, teachers and community resource persons. The learner realizes that teachers and community resource persons play a guiding and facilitative role in systematically creating an appropriate learning environment and conducting a variety of learning processes with a lot of love and care for their children.

Teachers feel that community resource persons bring in a lot of knowledge and skills to the learning platform which through the eyes, minds and hands of children find new meaning and carry stronger potential for future

society without any fear of perish. Day by day they realize that children are the best of learners in the world and every child can grow to full potential. They feel highly privileged being teachers, who work with the genius minds and creative hands.

Community resource persons derive great pleasure and pride for being recognized by the school and children. They give their best to share their best of resources in the form of plethora of resource materials, experience and expertise. Their intensive engagement in teaching learning processes motivates each child to take part in the learning activities as actively as possible. Their keen involvement and thereby acquisition of their new knowledge, skills and interest to apply those gives great hope to the community resource members who feel honoured and valued for their rich tradition and culture. Through the active hands and creative minds of their children they foresee a rich future ahead for their tradition and cultures.

Each of them starts admiring the others. These relations and processes get strengthened in school and society, it turns more democratic, inclusive and learning supportive. A healthy culture always aspires to inculcate these elements in the social development process. The Indian Constitution stands on the key pillars of equality, liberty, justice and fraternity, which are very well nurtured in these pedagogical processes.

Children's Learning under MTB-MLE

The MTB-MLE programme is being implemented in around 1000 schools of 10 districts of the state where majority

of children speak in these tribal and regional languages. These schools now value the richness of multilingualism as every month they discover hundreds of stories, songs, riddles, paintings, toys, games, jokes, dance rhythms, designs, patterns, and skits in different languages with high level of creativity, sensitivity and literary benchmarks. By travelling across the creative world of these literary and technical creativity children pick up the techniques behind their creation.

They also start applying their creative and technical skills to create similar and better outputs with new generation skills. These early grade learning skills are the most essential skills in a person's life and bears high potential or designing a society based on equity, liberty, justice and fraternity. An important objective of the MTB-MLE is to strengthen the language learning skills in mother tongues of children, which enables them to pick up the structures and vocabulary of Hindi and English in a phased manner in late primary classes. This pedagogical approach of bridging home languages with school's languages is scientific, systematic and efficient for enabling all children learn well.

This long journey from new curriculum to new pedagogy in multilingual context has turned out a pathfinder for pedagogic thinkers and practitioners. In the Indian context, many policies and plans in education have not provided specific, measurable, achievable, replicable and timely results because of lack of consistent, collective and resilient efforts and poor community participation. Here is a holistic working model that provides some hope for children and their education.

Science Teaching: Recommendations and its Implications on Teacher Education Programme

Abstract

Policy statements suggest teaching of science as an integrated subject till secondary stage. This paper discusses about the recommendation of science teaching from upper primary to secondary stage. The recommended pedagogy and teaching learning materials including its implications on teacher preparation programmes prevailing in the country are discussed here.

Prelude

Introspecting the existing system of education prevailing in the country from policy recommendations to its final implementation will give us a good insight into science teaching at school. There is a general consensus at the policy level that science should be taught as an integrated subject from the upper primary to the secondary stage. Based on the ideas of National Curriculum Framework (NCF)-2005, NCERT has redesigned syllabi and textbooks for science starting from upper primary to secondary stage. Sincere attempts have been made by NCERT to teach science as an integrated subject till secondary stage and NCERT has been fairly successful in bringing out science textbooks based on integrated perspective from classes VI to X. It is important to note that the desired changes at the curriculum level should be backed by necessary reforms at the implementation level, particularly teacher education. Teachers are the ones who negotiate classroom processes at the ground level. They need to be equipped with the desired content and pedagogical knowledge. However, the existing

teachers produced by the teacher education institutions in the country are ill equipped to teach integrated science. Usually the convenient way adopted by schools in the country is to divide science contents into physics, chemistry and biology sections among the prospective teachers in the school. These teachers are specialised in their respective subject areas. This may not be a problem for schools having many sections in a class and having senior secondary stages. However a school having only one section in each class and having only up to secondary stage may not have the subject teachers to teach the entire science content. However, teaching science as an integrated subject goes far beyond academic and administrative convenience. From the perspective of curriculum design, curriculum has pedagogical and psychological implications. Then, where does the problem lie? Is it because of the inherent traditional way of writing the books where authors tend to see science as a combination of segregated subject domains of physics, chemistry and biology? Or is there a problem with the teacher development programme existing in the country? Or is it the by

product of university education system which is a feeder source for B.Ed course in the country. This paper tries to reflect on these issues.

Science Curriculum

Let us turn to the recommendations of science curriculum and its unfolding into syllabi to unravel the minds of framers of curriculum and syllabi. The National Focus Group on Teaching of Science (NCF-2005) supported by a large body of research on science education recommends a pedagogy that is learner-centred, hands-on and enquiry based. While this is widely accepted at the idea level, practice in India still tends to be dominated by chalk and talk methods. To attain the progress in the desired direction, changes have been initiated as per NCF-2005 as outlined below.

In learner-centred approach and 'hands-on' way of learning science, we start with things that are directly related to the learner's experiences and can be taken as concrete examples. To reflect the pedagogical approach, syllabi have to be reordered and rearranged. An example is the concept of electric current. If we think that the concept is abstract and needs the knowledge of movement of charge, then it should be treated at later stage only when the child is comfortable with the concept of charge. Charge is an abstract concept and is understood at a higher stage. However, we see that children can easily make simple electrical circuits and understand the concept of current. Therefore, concepts of *electricity and circuits, electric current and its effects* have been included at upper primary stage. The concept of charge is taught at a later stage after teaching electric

circuit. It is a deliberate attempt to break the disciplinary mode of thinking by connecting to developmental principle. It means that there exists cross connectivity between concepts and developmental principles indicating the relationship between content and pedagogy. This also assumes significance as it reflects that syllabi is not merely a list of topics but also show the intended pedagogical processes to be followed while unfolding the content of the syllabi in the classroom. Thus pedagogy is inbuilt in the content right from the formulation of the syllabi. Hence a careful designing and sequencing of content is necessary for adopting a sound teaching strategy to be followed thereafter.

The National Curriculum Framework (NCF) -2005 also further recommended that science content for classes VI to X should be framed along integrated science and organised around themes that are potentially cross-disciplinary in nature. In view of this, a thematic approach was adopted to organise the content, and the syllabus was framed along cross disciplinary line. The themes included in the syllabus were *food, materials, the world of the living, how things work, moving things, people and ideas, natural phenomenon and natural resources*. These themes run from the upper primary to the secondary stages and there is consolidation of themes at the secondary stage.

Let us move further into the format of the syllabi presented. The syllabus has been presented in four columns titled as questions, key concepts, suggested resource and suggested activities. An example of science syllabus for class VI developed in 2005 is given below in table no.1:

Questions	Key Concepts	Resources	Activities/Processes
How do we separate the grains after harvesting the wheat/rice crop?	Threshing, winnowing, hand picking, sedimentation, filtration.	Talking to some elders about practices after harvesting the crop; kit materials	Discussion on threshing, winnowing, handpicking, experiments on sedimentation, filtration. Separating mixture of salt and sand.

Table no.1: A section of science syllabus for class VI

The syllabus starts with questions. These are key questions which are meant to provide points of entry for the child to start the process of thinking. The activity column lists experiment as well as other classroom processes in which children may be actively engaged, including discussion. Although the items are suggestive in nature, they are meant to give an idea of the unfolding of the content. If we read activity column together with the questions and key concepts; they give the intended depth and breadth of the content coverage. The syllabus also provides clues for teaching-learning strategies and choosing content for textbook writing. It also has space for learners to perform activities/experiment. The local context also finds place in this syllabus. The syllabus also takes into consideration children's experiences. In this example, the child is directed to the experiences he/she has gained about cleaning of food items. From there on they are being introduced scientific concepts such as sedimentation, filtration, etc. Thus, there is a deliberate attempt to connect their knowledge about their immediate surroundings to science concepts. However, to meaningfully pursue these processes, the learner also needs more time to reflect. This can be possible only if there is a reduction in content load. About 20-25% reduction in content load in science at upper primary and secondary stage has been made in the syllabi and textbooks prepared as per NCF-2005 as compared to syllabi

the and textbooks prepared as per the National Curriculum Framework for School Education (NCFSE)-2000. This is being made to enable children to have adequate time for carrying out activities and discussions to arrive at a concept. This is also true for the teacher who engages the children. Thus, the syllabus of 2005 shows a paradigm shift from the traditional way of preparing a syllabus. NCF-2005 also recommends plurality of textbooks and relating science to everyday experiences of students.

NCERT has brought out an integrated science textbook for classes VI to X. If one looks through the lens of a science teacher, one can see a good integration of science concepts up to secondary level, though at some places the subject boundaries are still visible. This is because at the secondary stage though science is still to be taught as a composite discipline, the disciplines of physics, chemistry and biology are beginning to emerge. These steps by NCERT may be considered as a process in achieving our ultimate goal of seamless integration. Overall, it can be said that NCERT has been fairly successful in this regard. However, one might argue that the science content up to, secondary stage can still be delineated into physics, chemistry or biology. This might be true if one looks through the lens of a specialised subject expert in their own field. Can we think of how children of 11-15 years old will look at these contents? It is we

who have specialised in our own field tend to classify things from our own disciplinary perspective.

Implications on Teacher Preparation

Teaching science as an integrated subject requires a teacher who can teach science subjects. This gives us an opportunity for introspecting the present teacher education programme in the country. Are our existing teacher education programmes particularly, B.Ed able to prepare teachers to teach integrated science at school level? The answer lies in the course, the content knowledge provided and the pedagogical approach that we follow in teacher preparation programme. There was a time when content and methodology papers were taught as distinct and separate papers in the teacher education programme. Now, there is a consensus that content and pedagogy are to be integrated in the teacher's preparation programme. This is what we call content-cum-methodology paper today. However, this paper is further bifurcated into separate and distinct papers such as biological science method and physical science method. These segregated methods papers are still prevalent in B.Ed programme in the country. Even in the NCERT run B.Sc. B.Ed programme through its Regional Institutes of Education, the students are grouped into PCM (Physics, Chemistry and Mathematics) and CBZ (Chemistry, Biology and Zoology) groups. In the process students from CBZ group find it difficult to teach content related to physics. Likewise students from PCM group find difficult to teach biology particularly in secondary science. Thus, even the products of four year B.Sc. B.Ed programme which is widely acknowledged as the model programme for preparing teachers for the secondary stage have not been able

to teach integrated science. The B.Ed programme run in the country gets students from the university system. We also need to recognise the reality that science teachers are graduates with physics or chemistry or botany or zoology subjects and obviously, they do not possess degree in integrated science. That is the way universities have planned the programme of study at graduate level. As a result the current B.Ed or B.Sc.Ed programme running in the country produces specialised subject teachers for teaching secondary science and not science teachers for teaching integrated science.

Organisations such as (KVS) Kendriya Vidyalaya Sangathan, (NVS) Navodaya Vidyalaya Samiti and a large number of private/public schools etc; continue to recruit Trained Graduate Teachers (TGTs) for science subject based on traditional subject combination of Chemistry, Zoology and Botany. It is not clear whether these TGTs are meant for teaching integrated science up to the upper primary or secondary stage. However, it is clear that these teachers may not be able to teach integrated science at the secondary stage. Though there are no clear rules, it is being told that in most of the schools run by KVS and NVS in the country, the science content at the secondary stage is segregated into Physics, Biology and Chemistry and the respective Post Graduate Teachers (PGTs) of the school teach their content area of secondary science. Also if a TGT has specialised in a particular subject he/she teaches that portion of the secondary science. Are the two year B.Ed degree and four year B.Sc.B.Ed degree capable of addressing the specialised needs of the teachers for teaching integrated science up to secondary? The debate continues till today and the consensus can be arrived by introspecting the current system of teacher preparedness.

As mentioned earlier the convenient way of teaching secondary science is to divide the science contents into Physics, Chemistry and Biology portion. Teachers who are specialised in their respective subject areas continue to teach only the portion of science content which falls under their specialised area. In the process, students are exposed to the idea that the concepts are discrete and distinct. The end result is that students develop fragmented disciplinary mode of thinking. Teaching science in a piece meal approach compromise the intended aim of teaching science as an integrated subject. This might not help students to meaningfully understand science concepts and relate concepts to the wide variety of life and natural phenomena existing around them. The idea of teaching integrated science goes beyond merely teaching all contents in a discrete way. From a developmental perspective, the idea is to make students understand the role of interrelationship that exist in real world and also to relate a wide variety of phenomena occurring in their environment, think holistically and address problems confronting them in a holistic way. Above all, our life processes and work which we witness

on everyday basis are not stratified and segregated as Physics, Biology or Chemistry.

The conclusion we can draw is that the teaching of integrated science should cover the implications for integrated science teaching in teacher education programme. It is significant to note that the scope is limited for changing the university graduate programme where these graduates are the feeder source for B.Ed programme. The option available to us is to change and modify the existing teacher education programme by judiciously plugging the gaps in the course content. The content may be tailored to suit the diverse academic background of teachers. For example, a science graduate with major subject in physics can be given more content of biology. Likewise, a science graduate with major subject in Zoology or Botany can be given more content of Physics. We also need to do away with the segregated content-cum-methodology papers such as physical science methodology and biological science methodology. Instead this may be replaced with integrated science content cum methodology paper.

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Meaning of Teacher Thinking in Curriculum Transaction

Introduction

Teacher education programmes are designed to prepare teachers at different stages of schooling. The programmes are different at pre-school, elementary and secondary stages and also in the areas of special group of children, health and physical education and the like. These programmes are designed to provide a professional touch through their course components. Field experience, for example, that is woven around other components opens the space for trainees for professional engagement. Precisely, internship is a significant and inseparable part of the course that provides the much needed space for field experience. Infact, field experience is the pathway that opens the door to professionalism. Field situations provide the teacher trainee the needed context to participate a variety of activities like seeing the school from the position of a teacher, meeting and discussing with teachers, observing school assembly and classroom teaching, conducting classroom teaching, organizing student activities, critical reflections on school activities, schedules and staff meetings, and similar activities. Pre-internship and internship are the specifically designed pathways for the trainees to gain field experiences. Pre-internship is an academic programme that exposes the teacher trainees to the various day-to-day activities of the school so that they get familiarised with the school programmes. Pre-internship is of shorter duration that enlists specific activities for the participation of the trainees so that they develop the

needed 'readiness' to participate in the subsequent internship programme.

As part of the pre-internship programme, I along with the D. Ed students of DIET, Kollam, Kerala were on a visit to a near by Government Primary School. The DIET, Kollam is located at Kottarakara town. I took the trainees to the Primary School for illustrating the process of teaching English at Primary class through a demonstration lesson. The lesson was planned for class IV students. Though the school has both English and Malayalam medium students, the demonstration lesson on English was planned for Malayalam medium students. Usually, both the mediums - English and Malayalam - are housed in separate classrooms. However, in this case, teachers informed us that the students of both the groups of class IV sit in the same classroom. Situations where there are large number of students of English and Malayalam medium exist in the same class, the normal tendency is to create two divisions of students of the same class. It is quite interesting to find that it is a hybrid of both English and Malayalam medium students housed in the same classroom of IV for academic engagement. It appears that this is the prevailing trend across schools in the State. When I explained my intention to interact only with the Malayalam group on the process of English teaching, the teachers of the school insisted on interacting with both the groups together. The teachers further added that 'the Malayalam group has merely 5 students, and they do not respond

to your queries and rather prefer to maintain their silence. Your effort will be a failure'. On checking, it was revealed that class IV Malayalam group consists of 10 students and I proceeded to perform the demonstration lesson with the same group.

The Process of Demonstration

The process of demonstration was formulated around action song, discussion, miming, colouring and drama presentation. The teacher trainees participated in the demonstration as observers. I started the demonstration lesson by interacting with the children in English. I was very careful in using simple language suitable to the children's level. Even in my presence, these 10 children were in their natural form keeping busy in their own way. For example, one girl was searching something, Two of them were fighting each other. Another one was on his own world and so on. I asked these children to sit close by and they were seated on two benches. I initiated a dialogue with the children by pointing to the duster on the table and asking, "What is this? Why is it on the table? Is not it dusty? Who will keep it on the black board?" One girl volunteered and she hung it on the corner of the black board. I continued by asking, "Is the fan working? Where is the switch? Who will switch it on?" I asked one boy to switch it on. When I found that he was unable to reach the switch, I helped him to stand on the chair to reach it. Then, I asked them to arrange their articles like bags, books, etc. I noticed at that time that two boys were not listening to what is happening in the class. I asked their names and started gradually attracting the attention of children. I asked them to guess my name and gave them a clue by saying that my name starts with the sound "su". One child said, "Sundaram". I replied, sorry. Another said, "Sundaran". I said that it

is not correct. A little girl stood up and said, "Suresh". I smiled and said "thank you" and shook hand with her. Then I said, I am Suresh and told them to give the little girl a clap. I spent almost 10 minutes with the children by this time and asked them whether they like songs? All of them said "Yes". Then I invited them to come and stand around me. I started the song, 'I am eating, I am eating, I am eating just now'... with action and gestures. It is an action song related to the activities at home. Though all of them appear very much interested to participate in the action song, they do not seem to have that much confidence.

Then I moved on to the occupations of the parents, a component of the lesson. I asked them to tell the occupation of their parents. One boy told that his father is a carpenter. I wrote the word "carpenter" on the blackboard. Another child said that his father is a driver. A girl said her father is a tailor. Children, in turn continued to name the occupation of their father. I wrote all the occupations mentioned by the children on the blackboard. I, then, mentioned that I am a teacher and what is my work? Children said, teaching and in the same way, they stated the work of other occupations. I kept on writing the words on blackboard as carpenter - arpenry, driver - driving, tailor - tailoring, teacher - teaching, farmer - farming, cook - cooking. I, continued on by asking the question, what is the work of a shoe maker? They did say, shoe making. We continued this activity for some more time and then, turned to miming. First, I started miming as a driver and then, all children started acting as drivers. One could watch moments of joy among these children and they continued miming various occupations. Subsequently, they participated in Malayalam folk song by dividing them into two groups. The folk song is structured in such a

form where one group asks questions and other responds with answers. For example, the group one sings- "What are you doing at home?" Doing at home? the group two sings - "We are washing at home." Washing at home.» Group one sings - "How is washing? How is washing? Group two sings - "Washing is like this. Washing is like this. Group one marches towards the other group and returns by singing and Group two too makes the same movement while singing the reply song. The children continue to get actively involved in the action song and their behaviour reflects their enthusiasm. Following this the children's attention was directed to the idea of helping others. I asked them whether they like to help others. I asked them, do you help your mother? I told them the story of an old man who seeks help to cross the road. I asked them, what help does the old man need? What will you do if the old man asks your help? Children started responding to this question in Malayalam and also in English. It was quite striking to find that these Malayalam medium students were making efforts to speak in English, but they tried to express their ideas using broken words. It was a good sign.

Later, I lead them to the activity of colouring the illustrations. They open the text and locate the black and white illustrations of various activities. I tried to introduce them to these illustrations by asking questions; What do you see in this picture? Who are they? What are they doing? While introducing the characters of illustrations, children were asked to colour the illustrations. During the process I interact with each child in tune with their reflections on the illustrations subsequently, I turned their attention to the idea of drama and introduced them to certain related basic concepts such as stage, curtain, actors, characters through brief discussion on

each. Then I started narrating the story of shoe maker with actions to involve the children in the story. A few of them volunteered to act out the story. This opened the opportunity for children to actively participate in the process.

Patterns that Matter

My reflections on interactions with the children tells that the conditions we set for them to interact and involve are what matter. Whether it is action song or discussion on occupations or miming or helping others or colouring or drama presentation, the activities teacher creates set the conditions for the involvement of children. Children's actions and talks during the interactions, obviously reveal their psychological investment in the process of learning. Psychological investment seeks that children's attention, interest, motivation, ability and the related behaviours are invested in the process of learning and development. Children's behavioural patterns well articulate their psychological investment in learning situations. My experience in this situation tells that the children's participation in terms of their actions; talk, laughter, spontaneous reactions, the type of responses they make and they like to speak of their active involvement in the process. It means that what the teacher does for the learning of children reflects the teacher's thought on activities, engagement, nature of interactions, learner involvement for learning and development of children. It means that teacher thinking is a defining factor in teaching-learning situations. Obviously, we need thinking teachers and teacher thought is the defining root of teacher's professionalism. My inner voice tells that professionalism of teacher is what matters, if the concern is, for the learning and development of all children, and certainly not for a few who can.

पाठ्यचर्या विकास एवं क्रियान्वयन

सार

यह लेख छत्तीसगढ़ राज्य में क्रियान्वयित 'पाठ्यचर्या विकास' नामक पर्चे का ताकिकर्क विश्लेषण करता है जो राष्ट्रीय शिक्षक शिक्षा परिषद् विनियम 2014 के पश्चात लागू हुआ था! इस पर्चे को सभी विश्वविद्यालयों के शिक्षण - प्रशिक्षण कार्यक्रमों का अभिन्न अंग बना दिया गया है! यह लेख इस पर्चे के सन्दर्भ में पाठ्यचर्या के प्रकारों तथा उसके विविध अर्थों की भी विवेचना करता है व औपचारिक तथा अनौपचारिक पाठ्यक्रम के परिलक्षित लक्षणों तथा निहितार्थ को भी विश्लेषित करता है

राष्ट्रीय शिक्षक शिक्षा परिषद् विनियम 2014 के पश्चात सभी विश्वविद्यालयों ने पाठ्यचर्या पर एक पर्चा बी.एड. एवं एम. एड. स्तर के पाठ्यक्रम में पाठ्यचर्या पर समाहित किया है। इसी क्रम में मुझे एम.एड. स्तर पर एक पर्चा पाठ्यचर्या विकास (Curriculum Development) के नाम से एक कोर्स पढ़ाने का मौका मिला। पहली बार मुझे इस पर्चे पर कार्य करना था इसलिए मेरे समक्ष सबसे बड़ी चुनौती यह थी कि हिन्दी में पाठ्य सामग्री कैसे प्राप्त होगी? फिर इस पर्चे में करीकुलम शब्द का उपयोग पाठ्यचर्या के लिए किया गया है अथवा पाठ्यक्रम के लिए यह स्पष्ट नहीं था। इस दौरान मैंने कई पुस्तकें देखीं उनमें राष्ट्रीय इन्दिरा गाँधी मुक्त विद्यालय की सामग्री के सिवाय सभी में यह शब्द द्विअर्थी था। कुछ किताबों ने तो करीकुलम का अर्थ पाठ्यक्रम ही माना था। दूसरी परेशानी यह थी कि ज्यादातर विश्वविद्यालयों में किसी पाठ्यक्रम को पूरा करने के पीछे सीखने की अपेक्षा परीक्षा में अच्छे अंक प्राप्त करने की अभिप्रेरणा ज्यादा होती है इसलिए शिक्षार्थियों एवं शिक्षकों के कार्य करने के तरीके भी अलग होते हैं।

मेरे विश्वविद्यालय के पाठ्यचर्या विकास के पर्चे में निम्न इकाईयां सम्मिलित हैं-

1. पाठ्यचर्या विकास के सिद्धान्त
2. पाठ्यचर्या का दार्शनिक, मनोवैज्ञानिक एवं सामाजिक आधार
3. पाठ्यचर्या विकास

4. विषय सामग्रियों के संगठन की प्रक्रिया

5. पाठ्यचर्या मूल्यांकन

यहां यह आवश्यक नहीं है कि इकाई के शीर्षक से अन्दर की विषयवस्तु पूर्णतः सम्बद्ध हो तथा विश्वविद्यालय द्वारा परीक्षा में पूछे गए प्रश्न भी इन इकाईयों के शीर्षक/ उपशीर्षकों के आसपास घूमते हैं। इन पाठ्यक्रमों में यह विचार नहीं किया जाता कि एक पाठ्यचर्या शालेय गतिविधियों में किस प्रकार परिलक्षित होगी। मुख्यतः पाठ्यचर्या पर बने कोर्स का उद्देश्य केवल कुछ तकनीकी जानकारीयां उपलब्ध कराना है। व्यक्तिगत तौर पे मैंने यह महसूस किया कि पाठ्यचर्या विकास का यह पर्चा जो विश्वविद्यालय द्वारा पढ़ाया जा रहा है, वह एक शिक्षक या शिक्षक प्रशिक्षक को प्रभावशाली बनने में विशेष मदद नहीं करता है। छात्राध्यापकों के साथ सम्पूर्ण सेमेस्टर के दौरान शालाओं में पाठ्यचर्या क्रियान्वयन पर हुई चर्चा के निचोड़ पर आगे चर्चा करना चाहूंगा जो पाठ्यचर्या क्रियान्वयन पर कई सवाल उठाते हैं।

राज्य शैक्षिक अनुसंधान और प्रशिक्षण परिषद्, छत्तीसगढ़ में कार्य करते हुए मैंने जो अनुभव किया है उसके अनुसार भारत में साधारणतः पाठ्यचर्या को सीखने सिखाने हेतु सम्पूर्ण व्यवस्था से जोड़कर देखा जाता है। इस पर विचार करने के लिए सर्वप्रथम में पाठ्यचर्या की एक कार्यकारी परिभाषा के साथ शुरू करने जा रहा हूँ जहां शैक्षणिक संस्थान के बाहर भी सीखने की परिस्थितियों को मान्यता दी जाती हो।

पाठ्यचर्या को इस प्रकार परिभाषित किया जा सकता है: “सीखने के अवसर जो विभिन्न परिस्थितियों में निर्धारित उद्देश्यों की पूर्ति हेतु उपलब्ध कराये जाते हैं।”

यहां इस तरह से परिभाषित करने के पीछे तर्क यह है कि मैं पाठ्यचर्या और प्रत्येक परिस्थिति में सीखने के बीच अंतर कर रहा हूं। मैं इस स्तर पर यह नहीं कहना चाहता कि सभी शिक्षा पाठ्यचर्या का हिस्सा है क्योंकि निर्धारित उद्देश्य के बगैर यदि कुछ सीखा जाता है तो वह पाठ्यचर्या का हिस्सा नहीं हो सकता। इससे हम यह निष्कर्ष निकालते हैं कि उद्देश्यपूर्ण सीखने के कार्यक्रमों के संगठित प्रयासों को पाठ्यचर्या के रूप में देखा जा सकता है। परन्तु इस परिभाषा के साथ एक परेशानी भी उत्पन्न होती है कि एक शाला में जो सीखने के अवसर उपलब्ध कराए जाते हैं क्या इनमें निहितार्थ उद्देश्यों से शिक्षक और शिक्षार्थी अवगत हैं? यदि ऐसा नहीं है तो फिर जो सिखाया जा रहा है क्या वह पाठ्यचर्या का हिस्सा नहीं है? शायद ऐसा नहीं है, क्योंकि उद्देश्यों की व्यापकता किसी न किसी तरह से अधिकतर शालेय गतिविधियों को सम्बोधित करने के नज़दीक होती है।

इस परिभाषा के आधार पर पाठ्यचर्या के कई प्रकार हो सकते हैं सबसे पहले हम शालाओं के लिए निर्मित पाठ्यचर्या को समझने की कोशिश करेंगे। दरअसल स्कूली पाठ्यचर्या के कई प्रकार हो सकते हैं, मान लिया जाए कि पहला प्रकार औपचारिक पाठ्यचर्या है जो साधारणतः केन्द्रियकृत होती है इसे राज्य स्तर पर या केन्द्र स्तर पर निर्मित किया जाता है इसकी स्वीकार्यता में लचीलापन लाने हेतु साधारणतः इसे पाठ्यचर्या की रूपरेखा के नाम से सम्बोधित किया जाता है।

औपचारिक पाठ्यचर्या

औपचारिक पाठ्यचर्या में क्या होना चाहिए, यह तय कैसे होता है और कौन करता है इस पर यदि गम्भीरता से विचार किया जाए तो शायद हम इस निष्कर्ष पर पहुंचेंगे कि विमर्श की प्रक्रिया से गुजरते हुए चिंतनशील शिक्षा विचारको द्वारा यह निर्णय लिया जाता है कि विद्यार्थियों को क्या सीखना चाहिए, कैसे सीखना चाहिए, किस प्रकार के ज्ञान को महत्वपूर्ण माना जाता है और किस तरह

के व्यवहार की अपेक्षा विद्यार्थियों से की जानी चाहिए। कई बार सम्पूर्ण शिक्षा व्यवस्था के प्रति अपने पूर्वाग्रहों के आधार पर भी बातें तय हो पाती हैं परन्तु ऐसे कई दृष्टान्त हैं जब पाठ्यचर्या निर्माण की प्रक्रिया में समस्त हितग्राही वर्ग का प्रतिनिधित्व सुनिश्चित किया गया तथा संवेदलशीलता के साथ सभी वर्गों के लिए न्यायोचित पाठ्यचर्या का निर्माण किया गया। लेकिन यह पाठ्यचर्या भी 10 वर्षों की दीर्घ अवधि में शिक्षकों तक नहीं पहुंची। यद्यपि शिक्षकों हेतु आयोजित कई प्रशिक्षणों में, कई लेखों में इन्हें सन्दर्भ के रूप में उपयोग किया गया। इस प्रकार पाठ्यचर्या कुछ अभिप्रायों का विवरण है। जिसमें अभिप्राय व्यक्त करने वाले, अभिप्रायों को क्रियान्वित करने वाले तथा इन अभिप्रायों के हितग्राही अलग-अलग होते हैं। इसलिए औपचारिक पाठ्यचर्या के उद्देश्य और इनके क्रियान्वयन के बीच काफी अंतर होता है।

पाठ्यचर्या की रूपरेखा स्कूली शिक्षा की प्रकृति और उद्देश्य के बारे में बहुत सी धारणाओं को दर्शाती है। उदाहरण के तौर पर यह माना जाता है कि, विषयों को सीखने में सबसे महत्वपूर्ण क्या है? कुछ निर्धारित प्रक्रियाएं अथवा सीखने की स्वतंत्रता? क्योंकि प्रत्येक विषय में ज्ञान, कौशल और प्रक्रियाएं हैं जो सीखने की शर्तों को निर्धारित करती हैं। यह पाठ्यचर्या विशेषज्ञ तय करते हैं कि क्या सिखाया जाना चाहिए। यह कई बार नीति निर्माताओं, शैक्षिक विशेषज्ञों, शिक्षकों और राजनीतिज्ञों के मध्य बहस की पृष्ठभूमि होती है क्योंकि कोई भी शिक्षा व्यवस्था राजनीति से हटकर अपना अस्तित्व नहीं ढूंढ सकती। आजकल यह विवाद उद्देश्यों के क्रियान्वयन पर होता है क्योंकि क्रियान्वयन के ढंग के माध्यम से भी उद्देश्यों का स्वरूप बदला जा सकता है। वैसे यह भी समझ पृष्ठभूमि में है कि किसी भी औपचारिक लिखित पाठ्यचर्या के लिए यह अत्यन्त आवश्यक है कि सीखने का एक ऐसा दृश्य प्रस्तुत किया जाये जहां यह स्पष्ट रूप से मान लिया जाए कि जो सीखा है उसका मूल्यांकन किया जाना चाहिए।

इसके साथ असल में यह समझना आवश्यक है कि किसी पाठ्यचर्या का निहितार्थ तभी उद्देश्यों के अनुरूप

होगा जब इसे पहले शिक्षक द्वारा समझा जाये और सीखने के अनुभवों को व्यवस्थित करने हेतु शिक्षार्थियों की समझ को सर्वाधिक महत्व दिया जाये एवं उसके अनुरूप क्रियान्वयन की योजना बनाई जाये। परन्तु भारत में शिक्षकों से यह अपेक्षा नहीं की जाती है कि वे स्वयं पाठ्यचर्या के अनुरूप शिक्षार्थियों के लिए पाठ्यक्रम का निर्माण करें ताकि सीखने के तरीके एवं ज्ञान के सृजन में उन्हें एक जिम्मेदार विशेषज्ञ के रूप में देखा जा सके। एक तरफ तो यह बात जोर शोर से कही जाती है कि प्रत्येक बच्चा अपनी गति से अपने तरीके से सीखता है। वहीं दूसरी ओर शैक्षिक गतिविधियों को केन्द्रीकृत एवं नियंत्रित करने का प्रयास हर स्तर पर किया जाता है, शिक्षक की परिस्थितियों की उनके सीखने के अनुभवों के निर्माण व संगठन में कोई भूमिका नहीं होती अधिकतर राज्यों में यह देखा जा सकता है। इस प्रकार पाठ्यचर्या के निर्माण से लेकर क्रियान्वयन तक शिक्षक अपनी भागीदारी कहीं भी महसूस नहीं करते हैं।

शिक्षक द्वारा औपचारिक पाठ्यचर्या के प्रति अनभिज्ञता के कारण शालाओं में छिपी हुआ पाठ्यचर्या उभर कर आती है। यह पाठ्यचर्या निर्धारित उद्देश्यों को आंशिक रूप से अनदेखा करती है। यहां भी ज्ञान, मूल्य, व्यवहार और व्यवहार के नियमों से संबंधित संदेशों को सम्बोधित किया जाता है परन्तु इनसे प्राप्य उद्देश्य पाठ्यचर्या में निर्धारित उद्देश्यों से अलग हो सकते हैं। छिपी हुए पाठ्यचर्या कम से कम दो प्रकार की हो सकती है -

1. अपेक्षित छिपी हुआ पाठ्यचर्या और
2. अनापेक्षित छिपी हुआ पाठ्यचर्या।

अपेक्षित छिपी हुई पाठ्यचर्या में उन सरोकारों को शामिल किया जाता है जो औपचारिक पाठ्यक्रम का हिस्सा नहीं हैं, लेकिन इन्हें शिक्षक सक्रिय रूप से और जानबूझकर अपने विद्यार्थियों के लिए सीखने के लक्ष्य के रूप में लेकर आगे बढ़ाते हैं। इन्हें बच्चों तक ले जाने की प्रक्रिया में भिन्नता हो सकती है, लेकिन उनकी उपस्थिति सभी शैक्षणिक संस्थानों के लिए आम है, उदाहरण के लिए, स्कूल में शिक्षक अक्सर यह सुनिश्चित करने के लिए कदम उठाने की कोशिश करते हैं कि पाठ्यचर्या

कुछ निश्चित मूल्यों के विकास को बढ़ावा दे उदाहरण के लिए प्रत्येक शिक्षक को यह लगता है कि विद्यार्थियों को शिक्षकों के आदेशों का पालन करना, औपचारिक ज्ञान को परिवेश के ज्ञान से श्रेष्ठ मानने हेतु प्रोत्साहित किया जाना चाहिए परन्तु औपचारिक पाठ्यचर्या इसे स्थान नहीं देती। उसी प्रकार क्रियान्वयन प्रक्रिया में आज भी शालाओं में रटने को विशिष्ट स्थान दिया जाता है परन्तु औपचारिक पाठ्यचर्या इसे हटाने की बात कहती है। उसी प्रकार विरोधार्थी शब्द पढ़ाते समय जब 'पुरुष का महिला' जैसे उदाहरण प्रस्तुत किये जाते हैं तब शायद पाठ्यचर्या के संबंधित उद्देश्यों को आहत करते हैं। अपेक्षित छिपी हुए पाठ्यचर्या की सामग्री को संस्थाओं द्वारा अपने मूल्यों के आधार पर निर्धारित किया जाता है जिसमें स्थान, समाज, हितग्राही इत्यादि से भी यह पाठ्यचर्या प्रेरित होती है।

अनापेक्षित छिपी हुआ पाठ्यचर्या, एक और प्रकार की छुपी पाठ्यचर्या है जो शिक्षकों द्वारा जानबूझकर उपयोग में नहीं लाई जाती है, परन्तु अनजाने में ये कक्षा में बढ़ चढ़ कर अपनी उपस्थिति दर्ज करती है। सामान्यतः एक उदाहरण दिया जाता है कि, प्रारम्भिक कक्षाओं से एक स्पष्ट संदेश दिया जाता है कि अच्छी उपलब्धि हेतु कड़ी मेहनत और लगन अत्यंत महत्वपूर्ण है, वहीं दूसरी ओर शिक्षक द्वारा बच्चे में अन्तर्निहित प्राकृतिक क्षमता की स्वीकृति एक छिपी पाठ्यचर्याएँ की ओर इशारा करती है जो कभी-कभी कड़ी मेहनत के माध्यम से उपलब्धि प्राप्त करने की दिशा में बाधक बनता है। ऐसा ही कुछ परिस्थितियों का निर्माण शिक्षण संस्थान और समाज लड़कों और लड़कियों के लिए करते हैं, जैसे -जैसे इनकी उम्र बढ़ती है लड़कों की स्वतंत्रता को बढ़ावा दिया जाता है वहीं लड़कियों की स्वतंत्रता पर कई प्रतिबन्ध लगाए जाते हैं। कक्षा कक्ष की बैठक व्यवस्था से प्रारम्भ कर अन्य संचालन व्यवस्थाएं औपचारिक पाठ्यचर्या से प्रेरित नहीं होती हैं। इस तरह अनगिनत छिपी हुई पाठ्यचर्या कक्षा में संचालित होती है। इस तरह के उदाहरणों से पता चलता है कि अनजाने में छुपी पाठ्यचर्या बहुत ही व्यापक और बहुत शक्तिशाली है जो औपचारिक पाठ्यचर्या को इसकी मूल भावना से विचलित करती है।

सम्पूर्ण शिक्षा व्यवस्था इस प्रकार की छिपी हुई पाठ्यचर्या से प्रेरित है जिस कारण औपचारिक पाठ्यचर्या का क्रियान्वयन अंशतः बाधित होता है। यह तथ्य सर्वविदित है कि न ही शिक्षक पाठ्यचर्या से परिचित होते हैं और न ही शैक्षिक प्रशासक, परन्तु सेवापूर्व अथवा सेवाकालीन प्रशिक्षण में कहीं भी इन मुद्दों को सम्बोधित नहीं किया जाता। मेरे लम्बे अनुभव के दौरान मैंने कभी यह नहीं पाया कि पाठ्यचर्या पर कभी शिक्षकों से सार्थक चर्चा की गई हो, उन्हें यह अवसर प्रदान किया गया हो कि वे अपने शाला के लिए एक पाठ्यचर्या विकसित कर सकें। प्राथमिक स्तर में तो शिक्षकों की पहुंच पाठ्यक्रम तक भी नहीं होती है उनके पास केवल एक पाठ्यपुस्तक होती है जिसे वो कक्षा कक्ष में उपयोगी एकमात्र और सर्वाधिक महत्वपूर्ण सामग्री के रूप में देखते हैं। अधिकतर क्षेत्रों में

पाठ्यपुस्तक के किसी विशेष भाग को पढ़ाने के पीछे क्या उद्देश्य है तथा उन उद्देश्यों की पूर्ति हो रही है अथवा नहीं इसका मूल्यांकन कैसे हो इन तथ्यों से अज्ञान ही कक्षा में कार्य किया जाता है। पाठ्यपुस्तकों के अनुसार ही बच्चों की उपलब्धि तय की जाती है, पाठ्यचर्या में निर्धारित उद्देश्यों का यहां भी कोई स्थान नहीं होता। इस प्रकार पढ़ना, पढ़ाना, परीक्षा, उपलब्धि ये सभी यंत्रवत कुछ कर्मकाण्डों को सम्पन्न करने हेतु आयोजन होते हैं। आशा के अनुसार उपलब्धि नहीं प्राप्त होने पर सम्पूर्ण व्यवस्था एक दूसरे को जिम्मेदार ठहराकर अपने जिम्मेदारी से बचते हैं तथा अपने कार्यों को न्यायोचित ठहराते हैं, यही प्रक्रिया सालों साल से चली आ रही है और शायद तब तक चलेगी जब तक औपचारिक पाठ्यचर्या अपनी मूल भावना के साथ कक्षाओं में परिलक्षित नहीं होगी।

Digital Storytelling, an ICT-based method of Co-constructing and Transacting Curriculum

Abstract

The present paper is the documentation of the 'Digital Storytelling' (DST) project run by the authors with teachers and students in seven different government high schools. This academic process of creating digital stories and using them in several educational endeavours are the central theme of this paper.

Introduction

India is seen to have the 'textbook culture' where the teacher is expected to restrict herself to 'covering' the contents in the textbook, with focus more often on memorising the text book contents, than in conceptual understanding. The authors worked with teachers and students in seven government high schools, in 'Digital storytelling^{1&2}' projects, in which they visited local institutions, interacted with the staff in these institutions to understand their aims, processes and challenges. These interactions were recorded using cameras and mobile phones and the image, audio and video outputs were edited and refined to 'tell stories' about these institutions.

The process of making these stories and sharing the same with others in the school was intended to be an academic process, the digital outputs

constituting curricular resources and the planning, recording, editing and sharing activities serving as teaching-learning activities. The DST also helped students get a holistic perspective of the work of these institutions, link concepts across school subjects, and create school community linkages. The process required students to collaborate in groups, enabling an environment of social constructivism. DST being processes of 'learning to create' and 'creating to learn', supported 'constructionist' approaches to learning. DST thus has a potential to improve the traditional curriculum and pedagogy processes in schools, by empowering teachers and students to actively participate in their own development.

Indian Curricular Context

Content and process (curriculum and pedagogy) are generally acknowledged

Some Definitions

1. In this article, the word digital is used in a broad manner, to include software, content which are stored electronically in a binary format as 'bits' and processes associated with creating, editing and sharing these. It is the ability of electronic machines (such as computers) to support the processing of such sets of 'bits' that has made the 'digital ICT' so powerful, since information can be easily and quickly created, shared, edited and stored.
2. The term "digitisation" is a narrower term than "digital". Digitisation refers to the creation of digital materials from nondigital sources. However in this section, we refer to the broader digital processes, since it includes all aspects of the DST activity including creating, editing, storing and sharing materials as videos, audio, image resources, as well as the interview preparation and conducting processes, editing the digital materials and presenting the multimedia outputs.

as the two intertwined components of learning. Eisner (1991) states: “Like the systole and diastole of the beating heart, curriculum and teaching are the most fundamental aspects.” He however adds that, “No curriculum teaches itself, it always must be mediated, and teaching is the fundamental mediator,” thus privileging the role of the teacher. India, however, has what has been termed a “textbook culture” (Kumar, 1988); the textbook is seen as the single, definitive resource for teaching. In most states, the department of education supplies textbooks free of cost to all teachers and students and officials usually emphasizes the “covering” of the textbook content as a key requirement of teaching learning process, restricting the teachers’ agency. The emphasis on ‘covering’ the textbook is reinforced by the limited availability of alternative resources.

With the near universalization of elementary schooling, the number of first generation schoolgoers entering high school is increasing. Children come to government high schools with different learning experiences, from different higher primary school environments, different socioeconomic backgrounds, different mediums of instruction, etc. This creates an enormous heterogeneity of students in a high school in which a uniform textbook is not helpful. The provision of a single textbook fails to meet diverse needs of learners.

The prescribed syllabus, with its heavy focus on literacy, numeracy and content mastery, further inhibits the students and is one cause for the ‘poor learning levels.’

In recognition of this challenge, the National Curriculum Framework for school education (NCF), 2005, has emphasized the role of ICTmediated teacher development and creation of

contextual resources in contributing to an inclusive, resourcerich learning environment. In this paper, we will discuss the experiences of IT for Change² with seven government high schools in four districts of Karnataka (Bengaluru Urban, Bengaluru Rural, Mysuru and Yadgir), in using Digital Story Telling (DST) as a method for co-constructing curricular materials and teacher development. The authors have worked with students and teachers in these schools to create digital stories in multiple formats; as picture stories, digital maps, audio and video stories.

Digital Storytelling

The term “Digital Storytelling” (DST) can cover a range of digital narratives. It is sometimes used to refer to filmmaking in general, and as of late, it has been used to describe advertising and promotion efforts by commercial and nonprofit enterprises (Wikipedia). For the purposes of this article, we can understand DST as a set of processes in which teachers and students create multimedia documents that combine photographs, video, sound, music, text, and often a narrative voice to narrate a story.

Storytelling is not new for human beings and has served as an important method of expression and communication. Digital storytelling techniques which combine textual and nontextual formats, provide the possibility for stories to be told by more people and capture multiple perspectives. In our context being described, digital storytelling is used to describe any of the following:

1. creating picture stories, posters, infographics, maps, comic strips combining text and graphics
2. audio visual communication combining audio, visuals (still and moving) and text

The experiences of digital storytelling is presented in terms of skills built, involvement of different participants in education, creation of digital stories as curricular resources, their use in student learning, and its relevance for different subjects in school education.

Digital Story Making Steps

The DST processes broadly consist of three steps of planning, visiting and editing.

In seven government high schools, as a part of planning, groups of teachers and students had group discussions to prepare the questions and interaction probes for the members of the institutions to be visited. The teachers also allotted different responsibilities to the members of each group.

During the visit, the teachers and the students created digital stories by recording interviews of the members of the institutions, and taking photographs of people and institutions, mostly using cameras and mobile phones.

After the visit, each group sat together to discuss how they would put the collected materials together as a 'story'. The students documented their interactions in digital text documents using a text editor tool such as LibreOffice Writer. They also created presentation slides using a presentation tool such as LibreOffice Impress. The students edited and put together these text, image, audio and video editing resources using appropriate software applications such as Writer, Audacity audio editor, OpenShot video editor, RecordMyDesktop screen casting software, to create multimedia resources.

DST Process and Outcomes

1. Social Constructivism through Digital Storytelling

The DST project in the schools

was consciously designed to be participatory, with a team of students and teacher(s) visiting an institution. The different tasks – asking questions, seeking clarifications, taking photographs, recording interviews in audio or video formats was divided amongst the students. Different small groups of students also interviewed different people in the institution. Thus the project emphasized collaboration, creating an environment of social constructivism amongst the students and teachers.

2. Participatory Approaches, Alternative Narratives

While the conventional story is about some incident or narrative which usually sits outside the learners' actual context, in DST, the attempt was to bring the lived realities and perspectives of the students, teachers and the community to the narrative. For instance, students of the government high school (GHS), Thyamagondlu, undertook a community mapping and documentation of a water tank near their school. The students interviewed the people who stayed near the tank. The history of the tank and how it had been an important water source to people in the village was shared by the interviewees. Students recorded their amazement at the role played by the tank in the past and noted with dismay how the tank had shrunk in size, and how its bed had become vulnerable to encroachments. The oral history documented from the community became an important learning resource and the students were able to articulate their own concerns about the loss of common village resources. This document also allowed the teachers to introduce conservation into the student's thinking, going beyond the conventional notions of development, often presented in textbooks.

A similar experience was observed in the DST undertaken by students of GHS Domlur, when they visited a bank. The students were very keen to know about the safety of deposits, as the bank uses these funds to advance loans to businesses, which may not be repaid. The issue of risk was intuitively understood by the students and were very keen to understand how the bank managed it. How the bank managed the logistics relating to the storing and movement of currency across branches and how the ATM was replenished also were matters of great interest, with the note counting machine becoming a key attraction. The human aspect of the nationalized banking system was seen by the students when the manager introduced them to a basket ball player who was over 6.5 feet tall and employed at the bank mainly to represent it in sports events. The bank became a living thing and banking suddenly relevant. Such an appreciation would perhaps be limited if the learning about banking were made only through the textbook.

Students of GHS Mallupura, GHS Begur, GHS Thyamagondlu and GHS Domlur mapped the surroundings of the school. After physically mapping the school and the neighborhood, the Mallupura students compared the map prepared by them, with Google maps and found out that the Google maps was outdated, as it did not show the new school buildings that had been recently constructed. Students were introduced to the idea of how maps can be powerful and how their own mapping could capture details that an external mapping may not capture. The spatial understanding of the village was strengthened by seeing the scaled representation of the village (including the school) drawn on paper. The physical mapping demanded that the students learn measurements, conversions and drawing and representation, combining mathematics, geography (map making)

and history. The process of physical mapping was recorded by the students to create digital stories.

3. Connecting School and Community

While education is seen as a process of socialization, the school has often remained an insular institution. Community involvement in schools has been recognized as an important area of strengthening educational processes and the NCF talks about extending learning beyond the school.

Documenting local community institutions was thus an important objective of the school DST projects, building schoolcommunity linkages. Teachers and students together identified local and community institutions near the school, visited these institutions and interacted with the people working there. The objectives of this interaction were to understand the aims and priorities of these institutions, challenges faced by the staff and how they are addressing these, and the relevance of these institutions to society at large, and to the students' lives. All the seven schools designed and conducted interactions with a variety of public institutions that were close to their schools including library, primary health centre, veterinary hospital, animal shelter, police station, ward office (Urban local body), grama panchayat (rural local body), rainwater harvesting unit, fire station and post office. The visits also covered local businesses including bank, hand loom unit and different kinds of shops such as pharmacy, grocery, bakery, provision stores etc. Our general experience was that, if the teacher/school spoke with the key personnel of the concerned institution and explained the objectives of the DST, the institution was positive and welcomed the students. In some cases, the institutions indicated preferred timings, which were periods of relatively lesser work load.

Students from GHS Ejipura, GHS Thyamagondlu and GHS Jayanagara visited the local police station. In an inner city urban context, where students come from marginalized urban poor backgrounds, the police station does not enter the students' psyche as an institution to serve the public; their encounters may have often been not on that plane. Rather, students would have found the police station to be intimidating and a nogo place.

However, their interactions with the police staff allowed them to re-imagine the role of a police station as a community institution existing for citizen security and welfare. This re-imagining was particularly empowering for the girl students, and one of them said she wanted to become a police inspector during her presentation of her video essay at the school. Many students wanted to know from the officials, the qualification required to become a police officer.

The response of the policemen and women was equally forthcoming, they saw this as an opportunity to engage with the education of students. The nuances of crime detection, investigation, detention of suspects and interrogation, jurisdictions, communication across police stations (including through their radio) were earnestly shared with the students, who had several questions. In almost all the cases, the officials of the institutions visited, also saw it as an opportunity to share their own stories with the students, thus allowing the lived realities of the people in the institutions to also be captured as knowledge.

During a visit to the electrical substation, students of GHS Thyamagondlu were not only able to get an idea about the supply of electricity from the (hydel and thermal power plants) generation points to homes and establishments, but

also the complexities of managing power shortages and outages. The distribution manager discussed with the students, the challenges of storing and supplying power, which was overall in deficit, to villages and cities. The manager explained how during the 'examination period' of March/April, the electricity companies across the state tried their best to avoid power outages (by stepping up power generation), so that students could study undisturbed.

During visits to the Ward office and the Panchayat office by the students of GHS Domlur and Motanahalli respectively, the challenges of providing and maintaining social amenities (including roads, transport, power) as well as meeting the dynamic and multiple needs of different communities in the area, emerged in the discussions with the officials. One of the students from GHS Domlur wanted to know why the garbage dump near his house remained uncleaned whereas other areas are maintained cleaner, suggesting his concern with civic issues. The "local government institutions" were seen as institutions on which they could raise claims, articulate concerns and demand accountability. Political Science, which teachers of social science sometimes see as an additional burden, became more interesting.

A very powerful example of learning outside of the school was observed in GHS Motanahalli which shared a compound wall with the local veterinary hospital. Animal physiology lessons had remained confined to the textbook, till the science teacher took her students to make a digital story of the hospital. The doctor at the centre discussed the diseases from which different animals suffered, through live demonstrations. The teacher and the students felt that this greatly helped them connect their textbook contents with what was happening in reality

and gave them a deeper insight into the concepts they would have otherwise dealt with as bookish facts. In a rural area like Motanahalli, the knowledge of how a veterinary hospital worked was also relevant to the everyday lives of many students.

While many of the students pass by these institutions on their way to school and back, they may be quite unaware of their functioning. Through the narratives built from the DST activities, the students were able to develop a deeper understanding of these institutions.

4. Holistic Learning, Transcending Disciplinary Boundaries

When they recorded the oral history of the community tank in Thyamagondlu, students learnt elements of history (story of the tank over decades), geography (water source, uses), science (water cycle), environmental sciences (pollution), sociology (local cultural practices connected to the tank) in their interviews. The visit to the bank helped students understand banking in a more integrated way, encompassing commercial arithmetic, accounting and economics, through their discussions with the staff.

Teachers and students often found it impossible to confine their investigations to a particular subject area, whether it was a visit to a rainwater harvesting unit or a hand loom unit or the veterinary hospital. The questions that engaged the students often cut across disciplinary boundaries and this also encouraged teachers of different subjects in the school to collaborate to support students in designing questions and analyzing responses during the DST.

5. New Processes of Curricular Resource Development

In a few schools, teachers and students came together for a common viewing of

the videos developed by different teams, and post the viewing, had discussions on what they had seen and understood. The resources developed by the students and teachers thus became curricular resources for the school to use in addition to the textbook. The 'local' nature of these narratives, involving them and their teachers, intrinsically made it interesting for the students and teachers. Digital stories can also be seen as powerful exemplars of constructionism 'learning to create' and 'creating to learn' with digital artifacts.

Some of the schools have uploaded these DST outputs as 'Open Educational Resources' on the 'Karnataka Open Educational Resources' ([KOER](#)) website, making these available to other schools as well. The digital nature of these OER means they are easy to retain, reuse and revise by teachers for the same or other cohorts of students.

6. Changing Pedagogies and Classroom Discourse

Storytelling is an old method of teaching-learning. Teachers have packaged their lessons as stories to help students understand concepts as well as their implications. However, DST allowed the teacher and students to combine still imagery, moving imagery, sound, and text, as well as being nonlinear and contained interactive features to create a digital story that went beyond traditional forms of storytelling.

In the context of the classroom, the distributed nature of DST makes it powerful. While teachers have traditionally acted as disseminators of content to students, the origin of a narrative, as seen from a student's inquiry has the potential to alter the communication patterns in the classroom. The bringing together of different competencies needed for DST allows more students to emerge as

leaders in a classroom scenario. The collaborative nature of the assignment instantly changes the onetomany nature of classroom conversation. In the realm of digital technologies, often students and teachers are similarly placed in terms of skills and are learners alike. This can alter the teachers' power as the sole knowledge giver and allow them to re-imagine themselves as a collaborator and co-learner. This could lead to more democratic classrooms.

DST processes allowed students to document knowledge, create their own knowledge from the inferences from data they collected in their interviews / investigations. The Motanahalli students explored the range of responsibilities shared by the grama panchayat officials to compute the physical and financial resource requirements of the panchayat. GHS Thyamagondlu students who created picture essays of the local vegetation (with the school compound, they enumerated more than 100 species of trees and plants), constructed a taxonomy of these plants and made inferences on the biological diversity within their own school premises and the vegetation outside their school (this was also due to horticulture being a co-curricular subject in the school, where the teacher for the subject had worked with students over years to develop the flora within the school premises). The mapping also helped students to see the need for sustained and long term efforts to build such a green environment.

DST can stimulate student imagination and creativity. For instance, to conduct a geographical mapping of their local area, students from these schools used a bicycle to measure distances. They recorded the number of turns of the cycle between two points and deduced the distance by multiplying this with the circumference of the tire. This was useful to measure longer distances

outside the school. When documenting local institutions, students framed the questions by themselves, recorded the interviews, transcribed the responses and created presentations and video essays, all of these academic processes in and of themselves. The diverse activities and the range of outputs allows for expression of multiple intelligences of children and showcasing of diverse abilities.

Often, some students who tend to be withdrawn in the regular classroom processes, become active participants in DST. Whether it is wielding the camera to record the audio or visual, or in measuring the distances and layouts of institutions in spatial mapping, teachers are surprised by the enthusiasm and initiative shown by students, who have hitherto not been active in the reading/writing processes of learning.

7. DST as Transaction

We observed that digital stories could be used by any subject teacher in teaching-learning processes. Starting from documenting oral history with multiple perspectives to creating narratives of local importance to observing and documenting the local vegetation, digital stories supported learning processes in history or geography or science. Documenting community institutions made political science a proximate subject and not abstract theory. For the language teacher, DST was an opportunity to build and strengthen diverse communication skills in students, of absorbing and producing communication material in varied and complex formats. The processes of developing a story, identifying the actors, using appropriate media to present an idea, editing and compiling helped students learn communication and documentation skills, key language competencies.

DST is a process of communicating learning as well. Post the development of the digital stories, students presented the stories for their classmates. Students provided clarifications from their visits, to their group members, thus actively sharing from their own knowledge.

8. Strengthening the Role of the Teacher

DST enables teachers to move beyond being “minor technicians” (Scheffler, 1973), who merely utilise the available resources with limited engagement with additional or alternate curricular resources and teaching methods. DST provides new approaches to creating curricular resources, developing activities and assessments, providing opportunities for contesting the textbook culture and changing classroom discourse. DST impacts both content and process, through the use of digital technologies and hence enables the teacher to improve her ‘technological pedagogical content’ knowledge.

Concluding Remarks

The teachers and students of the Seven schools created digital stories of their interactions with various local community institutions. Schools can plan similar visits to the institutions in their own vicinity. The teachers and students need to design these interactions, by preparing relevant questions relating to the working of the institution. Digital devices for recording the interactions, this can even be only mobile phones, are required to be carried by each group. The recordings will need to be edited, for these free and open source image, audio and video editors are available. DST can be planned by a school as a part of its academic calendar and enable teachers and students to create digital curricular resources from their interactions with the institutions.

1. Making School Education Contextually Relevant

The NCF 2005 has emphasized on the need for constructivist approaches to teaching learning and the role of community in child’s learning. The NCF position papers (Science and Social Science) discuss the importance of connecting learning to real life contexts. The school is often seen as an artificial space, and students can feel disconnected to the classroom transaction. DST can help make the classroom learning relevant by allowing students to cocreate local resources connected to the topic, and bringing local experiences to the learning. The processes of creating digital stories can be used to mentor students in developing inquiry based projects for supporting their own learning.

2. Making Learning an Integrated, Personal Experience

Interdisciplinary learning and project based approaches have been recommended for enabling constructivist classrooms. Digital technologies can provide one powerful method of integrating pedagogy across subjects and providing an integrated perspective. The DST process can be seen an example of constructionist learning, where digital artifacts’ creation and learning are in a dialectic, of learning to create and creating to learn.

Far from the typical picture of teacher burdened by communicating the syllabus to an uninterested student, the classrooms which have tried this approach have been alive with students’ discussing, directing and negotiating the process of their own learning. The teachers have been able to truly perform the role of the facilitator as they stepped in to support and guide the students’ learning. This is perhaps best captured in the

following remark from one student of GHS Thyamagondlu, when he told his teacher “I am unable to change the interview date with the manager of the bank. We will do it on our own if you are unable to accompany us”.

Schools where Teachers and Students did DST

1. GHS Begur, South 3 block (Bengaluru South district).

2. GHS Thyamagondlu, Nelamangala, (Bengaluru Rural)
3. GHS Mallupura, Nanjangud, (Mysuru)
4. GHS Motanahalli, Yadgir, (Yadgir)
5. GHS Domlur, South 3, (Bengaluru South)
6. GHS Ejipura, South 3, (Bengaluru South)
7. GHS Jayanagara, South 3, (Bengaluru South)

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TEACHING WITH TECHNOLOGY

(Integrating Information and Communication Technology (ICT) into Curriculum)

Abstract

This paper discusses the need to incorporate ICT into school curriculum to maximize educational outcomes. It highlights technology integration, challenges faced in implementing ICT and possible solutions.

Introduction

The 21st century dawned as the beginning of the digital age - a time of unprecedented growth in technology and its subsequent information explosion. Never before have the tools for information access and management made such an impact on the way we live, work, shop, play and most important the way we teach. It has become necessary to identify educational program that integrates new instructional strategies and a mixture of technology tools which focus on high academics and the integration of 21st century skills.

Educators at all levels, who are preparing students for the information age, must not only be accomplished in the use of ICT but also in the integration of ICT into the curriculum. They need to use their subject expertise to select appropriate ICT resources and infuse ICT in ways that will challenge pupils understanding and promote greater thinking and reflection.

Need to Incorporate ICT

The infusion of ICT into teaching and learning has had a remarkable influence on the instructional strategies of the institutions. In contrast to traditional methods, in the modern leaning environment, being tech savvy, students play an active role in their learning process and determine how to

reach their desired learning outcomes on their own. Integration of ICT across the curriculum helps learners develop ICT capability and provide them with knowledge and skills applicable across the curriculum. Here are some of the reasons to integrate technology in teaching:

- ◆ **Better Delivery of Instructions:** With the help of technology, teachers can make interactive lessons which not only engage students in the class room but also keep their interest alive. Things like videos, pictures, slideshows and animated clippings (gifs) capture students' attention and make learning fun. With countless online resources teachers have access to an infinite wealth of information and digital media to enhance students' understanding of topics.
- ◆ **Better and Quick Assessment Methods:** With the help of technology, teachers can measure the progress of students in real time. Teachers can easily make online quizzes using variety of tools like Google forms, Microsoft forms, Hot Potatoes, Kahoot, etc., to assess the students online. This enhances the ability of teachers to further their understanding of students' learning and what areas need a bit more focus and instruction.

◆ **Personalized Learning:**

Personalized learning helps to address the distinct needs and interests of the individual students. A student who needs extra help on a particular topic need not hold up the entire class, or feel embarrassed asking for that help. He can learn at his own pace with the help of student-specific e-modules, e-assessments, e-class rooms and mobile apps available. Technology allows teachers to easily work one-on-one with students without losing sight of the needs of the classroom as a whole.

Emergence of Massive Open Online Courses (MOOCs) and Online Courses has extended class room learning. They are open to anyone anywhere without entry qualifications and for free. Students can take up these courses to enhance their skills.

◆ **Easier Communication with Parents and Students:** Technology has transformed the way teachers communicate with parents and students and even how students communicate with peers. With the mobility of email, text messaging on smart phones and numerous free mobile apps teachers can remind students and parents about homework, progress reports, and upcoming assignments in a matter of seconds. Parents can now stay more informed about their children's progress in school and what they are learning.

◆ **Anytime Anywhere Learning:** Not only does technology extend the learning outside the walls of the classroom it also makes it mobile giving students the benefits of learning anytime anywhere. Advent of e-learning and m-learning has given new dimensions to education

system. Now, students sitting in the remote area also get chance to study. Learning is being delivered to their hand-held devices where they can consume it on the go.

◆ **Self Expression:** Using modern technology, students can express them by making a Power Point Presentation, recording/editing spoken word, doing digital photography, making a video, running a class newspaper, composing digital music on a synthesizer, making a website, creating a blog, etc. They can easily express their talents in an online world and the reach is unlimited.

Online discussion forums are a source of learning and discussion. Students can join online discussion forums to learn and gather information from people across the globe. They can also contribute their ideas and get inputs from others.

◆ **Inclusive Learning:** In today's education system, the goal for students with special needs is to allow them to be in the least restrictive environment. Instead of segregating them in separate classrooms, teachers are now finding ways to allow students with special needs to showcase their knowledge and talents, and technology is making this possible. Teachers can make use of visual aids, use programs that read out loud to students who need it, or simply incorporate more interactive activities as opposed to simple reading and writing.

◆ Besides, this many software/ apps are coming up to help Children With Special Needs (CWSN) overcome their difficulties with comprehension, problem solving, organizing, and communication skills. Daisy books and 3D printed Braille material are available for

students with visual impairment. Peripherals, like Intellikeys Keyboards and AbleNet Switches, have been designed to provide easier access and use of the computer for those with special needs.

- ◆ Making students' future ready: Preparation of today's students to be college and career ready seems like a daunting challenge. Experts have identified a long list of indicators -- from content mastery to lifelong learning skills -- that are considered critical for students' future success. **It is important** to instill technological skills in students and promote skills like robotics, 3D printing, and virtual reality to prepare students for the future.

- ◆ **Students as Global Citizens:** For the progress and development of a fairer and protected world we need to understand the importance of preparing students for the global world. Technology plays an important part in making our students global citizens. With the help of tools like Skype, students in one corner of the world can interact with students in some other corner. They can go for virtual field trips, call experts from other parts of the world in their own classroom and understand the culture and problems of students of other countries through direct dialog and collaboration. Giving students an understanding of globalization will create effective future leaders because they will be capable of seeing things from a world view.

Regular exposure of latest technologies and access to internet has also led to increase in the cyber threats and vulnerabilities. These threats pose serious risks to children since most of them are

ill-informed regarding this issue. It is very important to apprise students of the 3C's: Cyber Safety, Cyber Security and Cyber Ethics. By educating kids, we are ensuring that the future generations will be safer online.

The development of technology literacy is key to creating a programme to prepare learners for the demands of the future and to support social development and improve economic productivity.

What is Technology Integration?

Before we can discuss how to shift our pedagogy or the role of the teacher in a classroom that is integrating technology, it is important to first define what "technology integration" actually means. Technology integration is the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools. It is important that integration be routine, seamless, and both efficient and effective in supporting curricular goals and purposes. Developing a culture that embraces technology is also important to its successful integration.

Integrating technology doesn't only mean using it as a tool. Teachers must understand how to integrate it into teaching so that students can build their 21st century skills. Technology should not be integrated just to enhance teaching learning process but to take it to new dimensions.

Challenges Faced

The integration of information and communication technology (ICT) in teaching and learning provides more opportunities for teachers and students to work better in an information age. However, some barriers may discourage teachers to integrate ICT in the classroom and prevent them

to introduce supporting materials through ICT usage. The problems are much more magnified in case of schools located in remote villages and rural areas. Examining the barriers for using ICT in education can assist the educators to overcome the obstacles and integrate the ICT in everyday education. Some of the barriers to ICT implementation include:

- ◆ **Lack of ICT Skills in Teachers:** A major obstacle in the use of ICT is the lack of technological knowledge and skills in teachers. Teachers do not have enough knowledge of latest ICT tools and technologies and are therefore not willing to use them. Even after receiving ICT training, when it comes to practically applying ICT, many may not know how to deal with it and sometimes they are reluctant to accept new technologies in their classrooms.
- ◆ **Teachers' Attitude and Beliefs:** The successful implementation of the educational technologies depends largely on the attitudes of the educators. They argue that with ICTs the syllabus will never be completed and therefore their learners will be disadvantaged. They are unaware and rigid and not willing to adapt to the change. In these circumstances, a lack of motivation to learn new skills may occur, which is often compounded by feeling threatened by newer forms of ICT that students will understand better than teachers do.
- ◆ **Shortage of Time:** Apart from teaching, teachers are usually burdened with multiple tasks. The average teacher doesn't have the time or energy to figure out new tools and systems on his or her own. They do not find time to design, develop and incorporate technology into teaching and learning. Learning new ICT skills is a time consuming and an ongoing process.
- ◆ **Unfavorable Organizational Culture:** Often in developing nations, the educational organizations and school management fail to perceive the importance and seriousness of the role of ICT in education enhancement. Schools do not feel a need to change; they are content with their familiar tried and tested ways of teaching. There is a resistance to change and this resistance is based on an unclear understanding of what change should constitute and the reasons why changes should take place in the first place.
- ◆ **Insufficient Funds:** To use the technology effectively and efficiently, availability of latest hardware and software facility is essential. In developing countries, technology implementation into education systems is a difficult task as it requires a magnum of funds, infrastructure and support facilities. Also, investing in ICT for schooling is usually regarded as a long-term issue. Lack of finances leads to outdated and obsolete infrastructure and shortage of equipment thereby rendering the entire ICT experience meaningless. Another major concern is that computer hardware is becoming obsolete very fast and it is difficult to update it regularly due to lack of funds.
- ◆ **Lack of Technical Support:** One of the major obstacles to optimizing computer use in schools has been the lack of timely technical support. Teachers often have to struggle to get a projector or program to work, or sometimes they lose a week's work on a project because of a glitch in a system. Without on-site technical support, much time and

money may be lost due to technical breakdowns.

- ◆ **Internet Issues:** Access to the internet is highly limited in remote areas, and relatively poor infrastructure in developing nations such as supply of electricity makes this worse. Most schools cannot afford the high fees charged by internet providers and even where there is internet, slow or erratic connectivity destroys the very essence and impact of ICT. Internet issues coupled with the poor quality of service providers poses a major problem in implementing ICT.
- ◆ **Lack of Proper Training:** Teachers are not trained properly. Usually training programs are based on teaching new upcoming ICT tools and do not include integration of ICT tools into teaching pedagogies. Also, the number of training programs is not sufficient.

Possible Solutions

The scenario of the future demands that teachers act as learning facilitators to students. Learners must be encouraged to construct, evaluate, manipulate, and present their ideas while demonstrating understanding of curriculum concepts. ICT can surely help teachers to be the agent of change. It needs to be understood that ICT is a precursor in helping teacher to teach better, not a compulsion or burden on a teacher for using it. To remove hindrances in the way of implementing ICT in education the following steps are worth consideration:

Change in School Policies:

- ◆ **Infrastructure:** Schools should recognize the pervasive nature of ICT and grow to accommodate the changes. More budget should be allocated for ICT. The pre-service

and in-service teacher training about ICT should be increased in quantity and quality. ICT training and equipment costs are high (primarily for initial outlay, maintenance and replacement). Therefore, the investments made must be strategic after careful analysis and planning, finding creative ways of financing, and creating synergies. Instead of buying expensive software, open source software and free tools and apps might be a good choice. Schools should prepare technology plans to integrate ICT into curriculum. Teachers who integrate ICT into curriculum should be supported.

- ◆ **Teacher Training:** It is critical to provide teachers with in-service technology-related training at multiple levels. They must go beyond how to operate a new device, to cover how to integrate technology into the curriculum and how to teach in a technology-enabled environment.
- ◆ **Teacher Support:** New approaches should be designed to consider the obstacles that teachers face. For many teachers, lack of time is the greatest constraint. Technologies that save time and make the teacher's job easier are more likely to be adopted than those that add complexity. Even when a new approach seems promising, it must be designed with its overall impact on the teacher in mind. Teachers should be given classroom assistance by trainers, working alongside teachers to observe, support, evaluate and model computer integration.
- ◆ **Motivating Teachers:** Even if teachers are provided with up-to-date technology and supportive networks, they may not be enthusiastic enough to use it in the classroom. Teachers need to

be given the evidence that ICT can make their lessons more interesting, easier, more fun for them and their pupils, more enjoyable and more motivating.

Change in Attitude of Teachers:

Adopting New Pedagogies: Teachers should have technology in their mind when they are planning everyday lessons or longer learning experiences. Teachers must identify what tools will make content more accessible for students with different learning needs and how students can create products with tech tools that will help them build digital skills. They must adopt a positive mind set and be ready to accept new ICT systems, technology and software as educational tools. Teachers should take on the responsibility to remain up to date with developments in educational technology and should not be afraid of trying something new. Teachers should join educational forums and online communities that aid them in supporting one another and exchanging ideas.

Plethora of web 2.0 tools are available which can help to shift from being a medium, where information is transmitted and consumed, into being a platform, where content is created, shared, remixed and repurposed. Blogs, wikis, podcasting, social bookmarking, and social networking sites are some examples of Web 2.0 applications.

Since it's clear that tech integration is here to stay, it is not a question of whether teachers integrate technology into their classrooms, but rather how to do it best. By taking small steps, teachers can begin to reap the benefits that technology can bring to their teaching and to student learning. This process does not have to be painful, and no one will become a tech-integration whiz overnight. However, even with limited access, with careful planning, some risk taking, and an open mind, teachers can successfully use technology to enhance their teaching and bring learning to life for their students.

Conclusion

In today's world, it is unthinkable to sever technology from classroom teaching. Although technology is not the magic wand to fix all problems, but it does allow for more flexibility of the learning process, more engaged classroom and improved student learning. It is undeniable that teachers who are integrating ICT into curriculum have a fascinating future ahead as ICT takes them forward into 21st century. They are switching from the all-knowing guru to the role of collaborator and facilitator and whose responsibility is to provide the parameters, feedback and reflections their students need to be successful.

Stories and Mathematics Come Together

Abstract

An Elementary school teacher explores the use of storytelling as a pedagogic tool for teaching Algebra to her students. She discusses various sub-concepts of Algebra that are embedded into the story and the students attempt the associated worksheet. Then she discusses their textbook questions to give more practice and different contexts. Students' response to the story and the associated tasks are heartening because of high curiosity and logical reasoning shown by them. Their agency in using all their resources to help someone in need is also very powerful. Storytelling is worth a try for teaching a subject that is usually seen as 'difficult' by some students.

The bell rang; it was time for the maths class. There was a sudden excitement in the children. The English teacher present in the class was rather surprised. "What's wrong? Why are you in such a hurry?" she asked. "Niki* ma'am will continue with the story today. Can't wait to meet her", one of them replied. The teacher said, "What! ...story in a maths class? That's new!" Just for curiosity, the English teacher waited outside the class. As soon as Niki, their mathematics teacher entered, the children surrounded her with many questions such as,

"Ma'am today will you tell us if Alice found White Rabbit or not?",

"I want to tell you something about my 'no- sense' world",

"Will you give us more puzzles?",

"Will we help Alice again?",

"I want to show you something..." and many more.

Niki told the class to settle down and then began with the day's class.

As you would have gathered, Niki is using a powerful tool for teaching mathematics to her class 6 students, the idea of telling stories. Before I tell you more about Niki's classes let me

take you a little behind time, a time when Niki was not such a popular teacher.

Not long ago, Niki's classes were like any other traditional math classroom loaded with lot of black board work, paper pencil tasks and discussions centred around the textbook only. She used to do maths activities with her students but the classes were rather dull. Niki had already started to feel burnt-out, just after 3 years of teaching. She felt her classes were not exciting. She wanted her students to enjoy doing maths and the idea of doing only materialistic activities was not exciting her students much. Recently, she had met a research scholar who wanted to work with an in-service teacher to conduct an intervention in order to explore the use of stories in teaching mathematics to elementary school children. When Niki got to know about this, she was curious and agreed to collaborate with the research scholar (Neena).

To start the intervention, Neena began by discussing the idea of using story telling as a medium of doing mathematics. To build Niki's confidence Neena also shared with her many

*All names in the study are pseudonyms. The author wishes to thank the Principal of the school, the teacher and the students of the class for their cooperation in collecting data for this study.

readings related to it (for example, Schiro (2004), Egan (2005), Zaskis and Liljedahl (2009)). Niki was excited and wanted to try them out with her class. She had apprehensions because she had never imagined this as a possible way of teaching mathematics. She had never before narrated a story to her students and had not encountered any such strategy during her teaching training. Neena told her that this pedagogic tool of storytelling had been successful in primary classes but using it in elementary grades was an unknown territory. In other words, they were going to find out its effectiveness together.

School and the Students

The school where this intervention of using a story in a mathematics class took place was located in the East district of Delhi and was an all girls' school. The majority of students belonged to a religious minority group. The class had a total strength of 32 students, out of which 20 remained present during all the story sessions. The medium of instruction was Hindi.

The Teacher

Niki had been working with the school for the last three years, teaching mathematics to middle school students. She had completed a One-year teacher training course from a Central University.

Concept and the Story

Neena and Niki met a number of times in order to prepare for the intervention. First they had to finalise a mathematics concept appropriate to the level of the class. Niki said, "Algebra is a very important topic for the elementary grades and students find it quite boring. Let's teach it with the story" Neena agreed and they decided to teach algebra to the class. Next, was

deciding an appropriate story. For this, Neena spent many days in the class observing students and suggested the story of 'Alice in Wonderland' written by Lewis Carol in the year 1865. She cited several important reasons for this. One, the protagonist in the story is a girl who is almost same age group as Niki's students. Secondly, the character lusts for changing the real world. Often children of this age group (class VI) fantasise such ideas. This would get the students excited and they would open up in the class. Thirdly, the story has many characters and a long plot. These would give scope to embed many mathematical ideas in it. Neena discussed these parameters with Niki and for familiarisation Niki was suggested to read the novel. Meanwhile, Neena decided to adapt the story by making certain minor changes. She framed a story with a similar plot, but with many opportunities to learn and practice algebra. Some situations of the original story had to be changed for the purpose of teaching. She used their NCERT Mathematics text book for Class 6 (NCERT, 2009) for the flow of ideas and the range of questions. Reason for this was that her concern was to stick to the mathematics concept and the textbook while using the pedagogic tool of storytelling. Thus, the mathematics concept and the related questions in the story classroom would be the same as the traditional classroom. It would be easier to understand the students' learning this way. Niki and Neena held long discussions about the flow of story and the mathematical concepts embedded in it. They embedded sub-concepts of algebra within the story. Some key sub-concepts that were to be covered via story were finding a pattern, forming a rule for a pattern, using a variable, solving an equation. Next, they worked on designing the worksheets that would be embedded

into the story and would be solved by the students for helping Alice. The story of 'Alice in Wonderland' was split into 7 sessions with 7 corresponding worksheets (Please see Table 1 for details of the 7 story sessions).

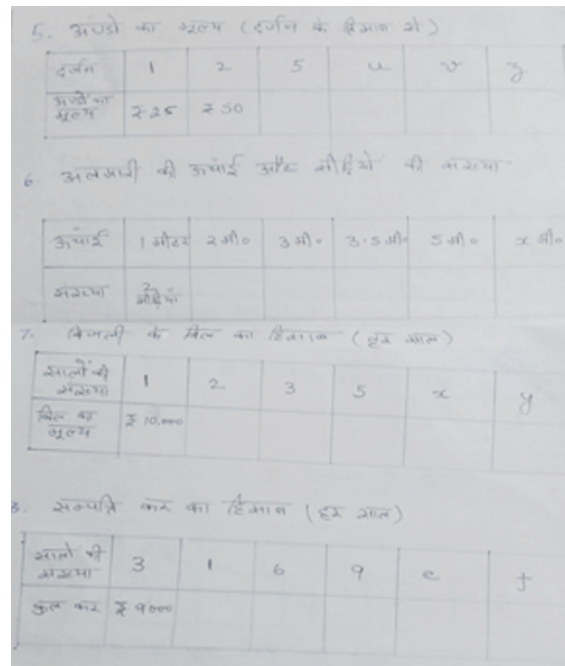
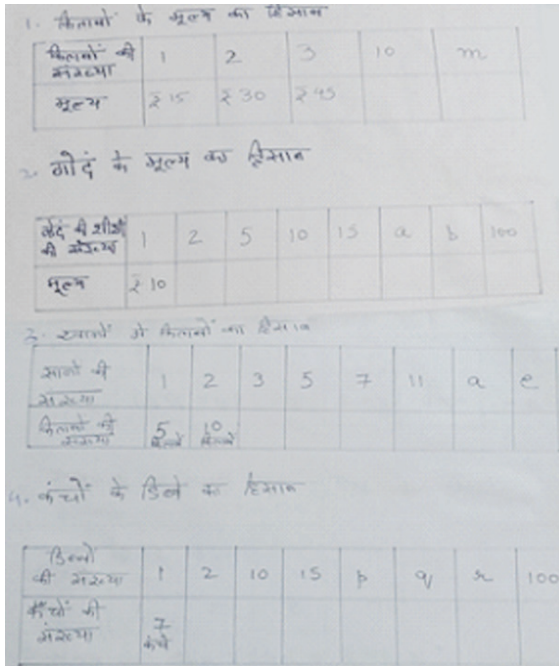
	Algebra Subconcept	Mathematics Task	Story Flow
Session1.	Finding the unknown numbers	Open-ended Number puzzles	Alice had to open the door of the burrow to follow the White rabbit. The door knob directed her to chits of number puzzles in order to find the key.
Session2.	Deciphering a pattern and extending it	Worksheet with questions on shape patterns using matchsticks	When Alice lost hope of following the White Rabbit she cried and cried and cried. Her tears turned into an ocean and little animals got trapped in whirlpools of tears. Alice had to help them get out by finding matchstick patterns and extending them.
Session3.	Pattern recognition and extending it	Questions on number patterns	Tweedle Dee and Tweedle Dum showed Alice the In and Out Machine and she had to study the pattern and find the correct numbers to be entered. They then showed her the way to find the White Rabbit.
Session4.	Introduction to a variable	Worksheet on finding cost of 'n' things. (Fig.1)	White Rabbit wanted help on finding the cost of 'n' different articles in his store because he was being duped of money. Alice was to help him.
Session5.	Using variables for Word problems on practical situations	Writing expressions using variables for age of relatives in a family	Cheshire cat was puzzled by the age puzzles and she asked Alice for solving them. In exchange she offered to tell her where to find the White rabbit.
Session6.	Balancing equations	Finding the unknown number in order to balance a see-saw	Alice was sent to the Mad Hatter's tea party. There they could not keep the tables steady because it had a support only in the centre, like a see-saw. March hare had to place the correct number of cups on both sides to balance it. So Alice helped him in the hope of finding the White Rabbit.

Session 7.

Finding solutions of equations

Equations in one variable and three options as possible solutions were given to students for finding the correct one.

Alice met the White Rabbit at the Queen's palace and got into an argument with her. The Queen challenged Alice to a game of finding solutions to equations. Alice took it in order to save the lives of her innocent friends who were to be hanged for making a small mistake in finding solution of an equation.



Before launching, Niki practiced the skills of telling a story with Neena. Neena had requested Niki to write reflective journals (RJ) at the end of each session about her experiences with children during the intervention.

Intervention

After 12 days of practice and shared discussions, it was time to hit the floor. Niki arranged for two consecutive periods for ten working days. The story sessions were planned for seven consecutive days with three extra days for just in-case situation. Niki told the class about Alice who wanted to live in a world which made no sense at all. The students were surprised. Niki asked

them, “What kind of a world do you want to live in?” The girls were quite for a long time. Niki told them about her own world. She said, “In my world money will grow on trees and there will be no schools”. This is when the girls started speaking up. They had so many things that they wanted to realise in their world. The story of Alice had started to interest them because they expressed excitement in following her through her adventures.

Now let us go back to the class that we described in the earlier paragraph. In the session 4 (Table 1) Niki had planned to discuss the use of a variable, and this is how she did it. In the story situation, Alice was trapped

in the house of White rabbit and he had put a condition for her escape. He said that Alice must help him in some calculations because he had been facing losses in his business recently. He had prepared a sheet (worksheet for the students) in which some calculations needed to be filled in. He said that he did not know how to calculate the respective figure when the given was any arbitrary number instead of a specific number. The sheet, is shown in Figure 1. The students were to calculate the costs, numbers of stairs, income tax, etc. for any given variable after looking at the previous pattern given in the table. This sheet was inspired by their NCERT text book (Class VI, pg 226 and 227). It introduces students to the idea of a variable.

Niki gave the students the sheet and told them to first explore it. Meanwhile, she also drew the table on the board. After a few minutes, she asked them about what they had to do in it. Most of the students said, “We have to fill in the blanks...”

After some brief discussion the students said that multiplication was giving the costs in the second row. Teacher gave them more number of books to calculate the cost so that they could generalise the pattern of multiplication. Finally, she raised a question, “What if there were ‘j’ number of books, what would we do then?”

There was pin-drop silence in class because dealing with a literal, instead of number was new for the students. Teacher prompted, “What did we do before, with 1, 2, 3, 10 number of books...?”

S1: We had multiplied...

T: So here also we will do that...15 multiplied with j

She wrote this on the board as ‘15 multiplied with j’ and added the unit of ‘Rupees’ in the front. Then she refined

it to ‘Rs. 15j’. She extended the table on the board with more variables and numbers for practice. Then she asked the students if they will attempt the rest of the tables to help Alice. They were very enthusiastic and immediately got to work. Niki told them to attempt the sheet on their own first. The plan was to discuss this for two days and the next day she wanted to give them feedback and practice the questions from the textbook.

The students’ work showed that they found no difficulty in completing the first 5 tables because they were based on multiplication alike the first example. Students discussed with each other the pattern involved in the tables and then predicted the next number after multiplying. For the variables they repeated the rule that the teacher had mentioned. Most of them had also written the units along with the variable. This means that the students were reasoning about the rule, applying it and at the same time maintaining the context of the table. According to Niki, students had been able to do the questions very fast and when she reviewed their answers later, the degree of accuracy had also improved. In her daily Reflective Journal (RJ) she wrote, “The students have reasoned correctly. Also, I feel, earlier I had to tell them to finish their work fast. Now, in order to help Alice, I can see that they use time as a precious resource. Their work has urgency and at the same time accuracy”(RJ p. 7)

After doing the first five tables, the sixth, seventh and eighth tables were designed to pose mathematical challenges to the students. The sixth table was related with calculating the number of stairs for specific heights. There was a new figure of 3.5 meters. This had to be multiplied with 2 to give the number of stairs required. Most students were able to find the pattern

as they wrote '2x' for the variable. However, Niki found that no child could multiply 3.5 with 2 correctly. Many of them gave varied responses to this. Most common response was, '6.5 stairs', meaning that they knew that a factor of 2 was required and so they wrote 6 but did not know what has to be done with the decimal part, i.e '0.5'. One student wrote '6^{1/2}stairs'. This shows an understanding that though that student knew '0.5' was same as '1/2', she did not know how to take it further. One student expressed the product as, '6:30 stairs'. This expression shows an amalgamation of representation of time and number. Another student wrote '610 stairs' which reflects that this student had neglected the decimal part and had multiplied 35 with 2. The range of responses shows that students were open to attempting new questions by constructing on their previous knowledge, giving reasons for the possible answer.

The seventh table related to the yearly electricity bill. As per the story, these tables were related to the business of White Rabbit. Even though this was similar to the previous problems in terms of multiplication operation, the students found it difficult to work with large number like 10,000. Only 11 out of 20 students could do this correctly. The argument of having problems in dealing with large numbers appears valid in light of the correct responses in the previous questions.

The eighth table was on calculating Income tax. Here the students were given the tax for three years as Rs. 9000 and they had to calculate it for 1 year first before calculating it for others. After calculating the tax for 1 year as Rs. 3000, the students had to multiply each entry in the first row with 3000 to find the respective tax in rupees. This question was attempted by 14 students, out of which only 8 gave the correct

answer as 'Rs. 3000e'. Some students had not done the necessary calculation for 1 year and wrote the tax for 'e' years as 'Rs. 9000e'. Some calculated the tax for 1 year as Rs. 3000, but wrote the tax for 'e' years as 'Rs. 9000e'. One student did the division for 1 year, but has written '3e' as the tax for 'e' years.

The responses of the students showed that they had learnt to use the variable while solving the problem for Alice. They themselves analysed the givens and found entry points to the solution. They conjectured and applied the strategy to the different situations. They made sense of the table entries and located the pattern in them. Every time when Niki asked them to provide the reason behind their thinking the students did so aptly. Niki wrote in her Reflective Journal (RJ, p.5), "I always encouraged the students to provide their reasons, but they appear very eager to explain now. They also seem to be thinking a lot about the problems. They want to know if they are correct and they are asking each other to confirm". According to her, the story had a role to play in this, she said, "I think the first session of the story had set the stage for speaking and communicating in the class and it has helped them in mathematics also (RJ, p. 20)".

Niki reported that the students had started talking to her freely since the story started. Children talked about Alice during the break time and between the classes. They were always curious about White Rabbit. They thought about the problems and challenges at home. One student recreated the sheet of White Rabbit at home with 5 similar problems and showed it to Niki the next day. The engagement with the subject and the high interest convinced Niki that the story was indeed helpful in facilitating teaching and learning of algebra. She said, "Earlier students did not want to do

mathematics for more than one class, but with the story sessions they became more enthusiastic". Students always requested Niki to ask the next teacher for extension of the math classes and they were ever willing to complete any task (worksheet, problem, exercise and problem) during the story sessions.

Stories are a powerful resource to attract and sustain the attention of learners. It also acts as a unitising factor for the class. Niki said that the class behaved like they were working for one single goal, which was to help Alice. They were a cohesive unit collaborating with each other. Students reasoned, solved problems, communicated and collaborated for the sake of the story characters. The example of Niki's class shows that stories can be used to teach mathematics to students. Niki wrote in her journal, "I could not believe that my teaching could involve the students so well. I saw their affection for the story and felt happy that they loved the class"

When Neena asked Niki to explain some of the reasons behind these observations, Niki attributed it to empowerment. She said, "In a story situation where students act as facilitators in someone's life they feel powerful. They feel their actions have a reason, a purpose and that is why their agency is so strong. They feel like they are driving the outcomes of the story and that is why they want to take everything 'hands-on' ". Niki quoted an instance to support this. She said in one of the sessions when students had returned the worksheets, a student asked me, "*Maam, bas itna easy hi tha aaj?...thoda aur do na...kal mushkil dena...*" ("Such easy sums for today?...I want more...get difficult ones for tomorrow") This statement shows that the students were enjoying solving problems and loving the challenges in the story classroom.

Challenges Ahead

The example of Niki's class shows that students' loved the challenges and felt empowered to solve mathematical problems for the sake of the characters of the story. Given the challenges that teachers often face while attracting children towards mathematics, story-telling is worth a try. However, there are some points of caution. Firstly, one has to be careful in planning meticulously for such an intervention because some studies have reported that sometimes students may focus only on the story and might ignore the mathematics completely (Balakrishnan, 2008). So a balance between the two needs to be established and constantly monitored.

Secondly, it is important to provide new problems having different context than the story. This will allow the students to apply the learned concepts in various contexts and the mathematics concept can thus be seen independent of the story situation.

The use of story as shown in this article may look like a time consuming endeavour, but there are a range of stories and innumerable books that can be used for the purpose. One can start by using children's books and many other resources available online. I am providing a list of some to start with.

Resources for Storytelling in Mathematics:

1. http://www.numeracyforallab.ca/uploads/2/6/6/7/26675047/a_trade_book_library_for_k-12_mathematics-2.pdf
2. This link provides a collection of titles that can be used to teach mathematics topic to different classes.
3. *Oral storytelling & Teaching Mathematics: Pedagogical and*

- multicultural perspectives* (2004) Author: Micheal Schiro. Publisher: Sage Publications.
- (2009) Author: Rina Zazkis and Peter Liljedahl. Publisher: Sense Publishers.
4. This book advocates the use of stories for teaching mathematics and proves it with many examples from primary and middle school.
 5. *Teaching mathematics as storytelling*.
 6. This book shows how stories can be used in many different ways to discuss mathematics concepts. Examples of stories and students' work have also been given.

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Book Review

Sykes, M. (1988). *The Story of Nai Talim: Fifty Years of Education At Sevagram (1937-1987)*. Wardha: Nai Talim Samiti.

It is in the time of violence that one thinks of peace. We are living in such times when the frequency, scale and brutality of violence are unprecedented. Today, the violent incidents are not limited to certain pockets and areas of the country. They are reported from nearly every street corner. There is an entire range of violence being reported from rape to murder, domestic violence to road rage, vandalism to lynching. In the face of violence, one feels a need to revisit Mahatma Gandhi's ideas on non-violence.

This gives us an opportunity to reconsider Marjorie Sykes book, *The Story of Nai Talim: Fifty Years of Education at Sevagram (1937-1987)*. Sykes was a British teacher, who migrated to India in 1928 to join Bentinck Girls High School in Madras. In 1937, through the reading of Harijan, she became acquainted with Gandhi's educational ideas. Later, she joined Nai Talim as a practitioner.

This 103-page long book is divided into twelve chapters. This book is indispensable text for the readers interested in the education in general and Nai Talim in particular for several reasons. Firstly, the book describes the practice of Nai Talim by a practitioner. This brings to life an educational programme, which otherwise appears to be an unrealizable scheme by the contemporary reader.

Secondly, she describes Nai Talim as a living being, a seed that was sown, which germinated and become a plant but died an untimely death. This life-cycle of Nai Talim is described through

deliberations in Nai Talim conferences from 1937-1957. In these conferences, practitioners deliberated upon different aspects of the curriculum such as the place of arts and crafts in Nai Talim, guiding principles for selecting a craft, importance of work in education, teaching of English, place and approach towards books in Nai Talim. The practitioners debated and revised the curriculum, and structure of Nai Talim on the basis of the consensus reached in these conferences.

Thirdly, the book presents Nai Talim as not just an educational experiment but shows it in a continuous dialogue with the society and the temporal reality. This dialogue included a broader dimension of social reconstruction of the village. This relationship had due space in the vision of the Nai Talim. For instance, pre-basic education consisted of educating the parents for wise parenthood. This education also involved initiating activities of oil-pressing, gur-making, weaving with the village. The practitioners and students of Nai Talim were also participants in the non-violent struggle for independence.

Fourthly, Sykes wrote the book when the period of Nai Talim had come to an end. Therefore, she reflects on the causes of the failure of the education programme. These reflections on the neglect of certain issues and of the failure to completely understand the scheme make Nai Talim appear to be a more human enterprise. These reflections not only engage the reader but they also come to learn the kind of educational decisions that were

undertaken and their far-reaching consequences. This provides a unique eye to the contemporary reader to evaluate the present system of education.

Fifthly, Sykes work shows how gradually Gandhi's initial proposal for an ideal education for rural children matured into a village reconstruction plan. In 1942, Gandhi broadened the scope of basic education to cover all aspects of an individual's life from 'conception to cremation'. This new broader scheme of education was called Nai Talim. It included pre-basic, basic and post-basic education. It began with the education of the parents in every aspect of human life such as agriculture, health, sanitation, cloth production, pottery and others. He called it 'education for the sake of life' (p. 61). Thus, education for him was an integral part of being alive. This makes this book indispensable for the contemporary reader.

Towards the end, Sykes says that Nai Talim survived the most

difficult phases during the struggle for independence when often teachers and workers were imprisoned but it could not survive the struggle in the post-independence phase. She describes the challenges the practitioners of Nai Talim faced from outside and also within the organization, which led to its untimely death. For instance, the teachers they trained for a year in Nai Talim methods were sent by the government to teach in regular schools, which created problems for these teachers. The teachers also could not become master craftsman, which harmed the spirit of Nai Talim. The government also recognized only basic schools (primary grades), which created a divide between the rich and the poor. All these reasons led to the untimely death of Nai Talim. By 1974, Sevagram school also closed down indefinitely.

In the end, Sykes shares her dream of a future of Nai Talim for the young readers and practitioners of a non-violent life.

छत्तीसगढ़ राज्य की पाठ्यचर्चा की रूपरेखा और उभरते मुद्दे पर कार्यशाला: एक रपट

शिक्षा सामाजिक बदलाव, सुदृढीकरण व प्रगति में एक महत्वपूर्ण भूमिका निभाती है। हर समाज अपने स्कूलों से बहुत सी अपेक्षाएं रखता है। इसलिये स्कूली शिक्षा पर चर्चाओं को कभी विराम नहीं मिलता है।

कक्षाओं में सीखने-सिखाने की प्रक्रिया को समाज की आवश्यकताओं और अपेक्षाओं से कैसे जोड़ा जाए, इस बात को केन्द्र में रख कर ही राज्य पाठ्यचर्चा की रूपरेखा तय करते हैं। छत्तीसगढ़ राज्य की पाठ्यचर्चा की रूपरेखा का प्रारूप - 2007 अन्य तमाम शैक्षिक मुद्दों के साथ-साथ बच्चों की ज्ञान सृजन की क्षमता को केन्द्र में रख कर बनाया गया। इस रूपरेखा को मार्गदर्शन मिला राष्ट्रीय पाठ्यचर्चा की रूपरेखा-2005 से, जिसे राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद द्वारा विकसित किया गया है। इस 2007 की पाठ्यचर्चा में 2009 में जारी शिक्षा के अधिकार अधिनियम के आलोक में कुछ परिवर्तन किये। इसमें एक महत्वपूर्ण बदलाव था- सतत एवं व्यापक मूल्यांकन का। इस परिवर्तन का कई पहलुओं पर प्रभाव था। उदाहरण के तौर पर कक्षा के स्वरूप, शिक्षक की भूमिका, बच्चे के साथ व्यवहार, आदि। हम यह देख ही सकते हैं कि जब भी नई पाठ्यचर्चा की बात होगी तो इस तरह के अन्य परिवर्तन पाठ्यचर्चा के नवीनीकरण के महत्वपूर्ण अंग होंगे। हाल की नई शिक्षा नीति 2016-17 की चर्चाओं में यह प्रयास व्यापक स्तर पर हुआ कि राज्य की शैक्षिक चुनौतियों और उससे निपटने व शिक्षक प्रक्रियाओं में सुधार की संभावनाओं को टटोला जाए और कुछ ऐसे मुद्दों की तलाश की जाए जिन्हें आने वाले समय में राज्य की पाठ्यचर्चा की रूपरेखा के आधार में जोड़ा जाएगा और जिनसे राज्य की स्कूली शिक्षा के गुणवत्ता संवर्धन में महत्वपूर्ण मदद मिल सकेगी।

इसी सिलसिले में एक कार्यशाला का आयोजन 24-26 अप्रैल 2016 तक राज्य शैक्षिक अनुसंधान एवं प्रशिक्षण परिषद्, रायपुर में किया गया।

इस कार्यशाला के प्रतिभागी थे- छत्तीसगढ़ राज्य के डीईट, जिला शिक्षा कार्यालय, सर्व शिक्षा अभियान, राष्ट्रीय माध्यमिक शिक्षा अभियान, आई.ए.एस.ई., शिक्षक शिक्षा महाविद्यालय (सरकारी एवं गैर सरकारी), माध्यमिक शिक्षा मंडल, खंड संसाधन केंद्र, संकुल संसाधन केंद्र से आए संकाय सदस्य एवं अधिकारी गण, प्राचार्य, शिक्षक (प्राथमिक, उच्च प्राथमिक, हायर सेकेंडरी), राज्य शैक्षिक अनुसंधान एवं प्रशिक्षण परिषद, (छत्तीसगढ़) और गैर सरकारी संगठनों के सदस्या प्रतिभागियों की कुल संख्या 73 थी। यह कार्यशाला एन.सी.ई.आर.टी. के पाठ्यचर्चा विभाग की अध्यक्ष प्रोफेसर रंजना अरोड़ा के मार्गदर्शन में आयोजित की गई। यह रिपोर्ट इस कार्यशाला की प्रक्रिया व इसमें हुए प्रस्तुतिकरण पर है।

प्रथम दिवस -

छत्तीसगढ़ व इसके शैक्षिक परिदृश्य की संक्षिप्त जानकारी के पश्चात् समूह कार्य आरंभ किया गया। विषय था- “राज्य की पाठ्यचर्चा और उभरते शैक्षिक मुद्दे”। इस चर्चा के लिए विषयनुसार कुछ समूह बनाए गए इन विषय समूहों ने कई मुद्दों पर सोच विचार कियाए जैसे- वर्षों के अंतराल के बाद कौन से नए मुद्दों को पाठ्यचर्चा में शामिल करना चाहिए, कौन से मुद्दे ऐसे हैं, जिन पर पिछली पाठ्यचर्चा में विचार तो हुआ था परंतु, क्रियान्वयन में कमी रही, इत्यादि, समूहों द्वारा किये गये प्रस्तुतिकरण में, जो महत्वपूर्ण मुद्दे सामने आए, उनमें से कुछ यह है:

- “शिक्षा सभी के लिए” के अन्तर्गत छत्तीसगढ़ राज्य के हर तबके तक शिक्षा की पहुँच हो, सभी बच्चों का स्कूल में नामांकन, स्कूलों में उनकी निरन्तरता और उपलब्धि सुनिश्चित हो।
- स्कूल की शिक्षा से हमारा क्या आशय है- पाठ्य-पुस्तकों को पढ़ना, परीक्षा देना और उत्तीर्ण होना।

- या कुछ और? क्या यह शिक्षा बच्चों को एक उत्तम किसान, कुशल व्यवसायी, राजनीतिज्ञ, अच्छा पालक, जागरूक मतदाता, वैज्ञानिक, आदर्श शिक्षक बनाने में सक्षम है? क्या इनसे हमारा समाज विकास की ओर अग्रसर होगा? यदि नहीं तो हमें अपने और कक्षागत प्रक्रियाओं में क्या बदलाव लाने होंगे?
- हमारे सभी विद्यालयों में एक जैसा पाठ्यक्रम है, सभी विद्यालयों व सभी बच्चों को ठीक एक जैसा पाठ्यक्रम दिया जाए या उसमें अपनी परिस्थिति व रूचि के अनुसार भी कुछ खुलापन हो, जिससे कक्षा प्रक्रिया अलग-अलग तरह से रची जा सके। अभी हमारी शिक्षा ऐसे अवसर उपलब्ध नहीं कराती हैं जिसमें बच्चों शिक्षकों की रूचि की जगह हो।
 - राज्य में भौगोलिक, सांस्कृतिक, आर्थिक, प्रजाति एवं भाषायी विविधताएँ, जैसे- हल्बी, सादरी, मुरिया, गोंडी, सरगुजिया, धुरवा, कुडुक, छत्तीसगढ़ी आदि हैं। चूँकि पाठ्यचर्या पूरे राज्य के लिए एक दस्तावेज है, अतः यह सोचना होगा कि राज्य के 146 विकासखण्डों की क्या-क्या सांस्कृतिक विशेषताएँ हैं व उनकी बुनियादी मान्यताएँ व समझ कैसी हैं? इनमें अर्न्तनिहित विविधता को कैसे समझा व उनका उपयोग किया जाए। इसके लिए जरूरी है कि यह सभी विविधत एक संसाधन बनकर उभरें। बच्चों में विभिन्न परिप्रेक्ष्यों, सन्दर्भों और मुद्दों को सही तरीके से देखने, समझने की दृष्टि विकसित की जाए। इन विविधताओं को कक्षा में संसाधन के रूप में देखने से पारस्परिक समझ बढ़ेगी।
 - गैर आदिवासी शिक्षक जो आदिवासी क्षेत्रों में कार्य करते हैं, उन्हें विशेष प्रशिक्षण दिया जाए जिससे वे उस क्षेत्र विशेष के बच्चों को समझ सके, उनकी भाषा जानने का प्रयास करें व उनके करीब जाएं।
 - आदिवासी क्षेत्रों, दूरस्थ वनांचलों, घुमन्तु जाति, कामकाजी बच्चों की स्कूल में नियमित उपस्थिति और ठहराव को बढ़ावा मिले।
 - प्रारंभिक शिक्षण मातृभाषा में हो, स्कूल व कक्षा का वातावरण बच्चों के अनुकूल हो। सीखने-सिखाने की प्रक्रिया में शिक्षक बच्चों की सहायता करें। सीखने में आने वाली कठिनाइयों को दूर करें।
 - मूल्य शिक्षा को भी बढ़ावा देने की बात की गई। राज्य में किशोरों को नशे की गिरफ्त में न आने व एवं अन्य असमाजिक कार्यों से दूर रखने के प्रयास स्कूल व समाज को मिल कर करने होंगे। पाठ्यचर्या को अपने लक्ष्यों में इनकी वरीयता देनी होगी, जैसे - बच्चों का नियमित स्कूल आना, स्कूल में आनन्द व रूचिपूर्वक समय बिताना, सीखना, शिक्षक, विद्यार्थी और समुदाय के सुदृढ़ अर्न्तसम्बन्ध और आपसी सौहार्द, जिससे आगे चल कर बच्चों में रूचि के अनुसार काम करने का साहस और आत्मविश्वास जागृत हो।
 - विद्यालयों को भी अपने निर्णय स्वयं लेने का अधिकार हो, विशेष तौर पर दूरस्थ अंचलों में स्थित विद्यालयों को भी। एक तरह से उन्हें यह विशेष तौर पर मिलना चाहिए।
 - इनके अलावा पाठ्य-पुस्तकें परिवेश से जुड़ी हों, आकलन व्यवहारिक, विद्यार्थी केन्द्रित और मानवीय हो, प्रशासनिक व अकादमिक रिक्तता दूर हो। पाठ्येत्तर गतिविधियाँ पाठ्यक्रम का हिस्सा हो, सूचना एवं संप्रेषण तकनीक (ICT) जोर हो। जेण्डर संवेदनशीलता को बढ़ावा मिले, समावेशी शिक्षा सुदृढ़ हो।
 - शिक्षक-प्रशिक्षण प्रभावी हो और इसकी न केवल लगातार मानिट्रिंग की जाए, वरन इसे निरन्तर मदद भी दी जाए। व्यावसायिक शिक्षा ऐसी हो कि योग्य और प्रतिभावान बच्चे भी इसमें अपना भविष्य तलाश कर सकें।
 - शिक्षा का उद्देश्य बच्चों को योग्य नागरिक बनाना है, जिससे वे स्वयं और समाज के विकास की दिशा में उपयोगी सिद्ध हो सके। हमें यह ध्यान रखना होगा कि सामाजिक परिवर्तन एक निरन्तर प्रक्रिया है इसलिए बदलते शिक्षा के उद्देश्यों के साथ-साथ पाठ्यचर्या को भी निरन्तर परिवर्तनशील व प्रासंगिक होना

चाहिए। अतः वैश्विकरण के इस युग में पाठ्यचर्या वैश्विक नागरिक तैयार करें। इन सभी के बीच हमारी स्थानीयता व जीवन मूल्य बरकरार रहें।

अन्त में यह बिन्दु सामने आया कि पाठ्यचर्या क्या है? एक विचार आया कि यह हमारी इच्छाओं का दर्पण है? तो किसी और प्रतिभागी ने कहा यह हमारी आवश्यकताओं का दर्पण है। हमारी आवश्यकताओं से तात्पर्य राज्य की आवश्यकताएँ हैं। इच्छाओं व आवश्यकताओं के बीच चुनाव से यह स्पष्ट उभरा कि इसे आवश्यकता समझना उपयुक्त है क्योंकि यह स्कूल के लक्ष्य को फिर उसके सामने रख रहा है। राज्य में शिक्षा के क्षेत्र में हो रहे तमाम प्रयासों के बावजूद अपेक्षित परिणाम हासिल नहीं हो रहे हैं, यह चिन्ता का विषय है। शिक्षा के उद्देश्यों के अनुरूप हमें अपनी समझ विकसित करनी होगी। हमें स्वयं को टटोलना होगा। यह सोचना होगा हम ऐसा क्या करें या क्या नहीं करें कि बेहतर परिणाम सामने आएँ।

द्वितीय दिवस -

कार्यशाला के प्रतिभागियों ने प्रथम दिन की चर्चा को आगे बढ़ाते हुए पाठ्यचर्या, पाठ्यक्रम व पाठ्यपुस्तकों पर चर्चा की। इस सत्र में कई तरह की बातें सामने आईं, जो प्रमुख उभरे मुद्दे वे इस प्रकार हैं-

- पाठ्यचर्या की रूपरेखा एक ऐसी योजना है जिसमें व्यक्ति और समाज दोनों के लिए शैक्षिक लक्ष्य प्रतिबिम्बित होते हैं। जिससे यह समझ बनती है कि बच्चों को किस प्रकार के अधिगम अनुभव दिये जाए। जिससे उनका सामुदायिक, दार्शनिक व सामाजिक विकास हो सके। सामान्यतः इसे राष्ट्र और राज्य स्तर पर बनाया जाता है।
- पाठ्यचर्या की रूपरेखा यह भी बताती है कि शिक्षा के महत्वपूर्ण उद्देश्य क्या हैं, किस तरह के समाज और बच्चों की कल्पना की गई है। हमें यह समझने व उपयोग में लाने की आवश्यकता है।
- पाठ्यचर्या की रूपरेखा के परिपेक्ष्य को, विद्यार्थियों की आवश्यकताओं और विद्यालय के आस पड़ोस के संदर्भ को ध्यान में रखते हुए सोचना चाहिए। इस पाठ्यचर्या में स्कूल में कराई जाने वाली समस्त

गतिविधियाँ जिनसे विद्यार्थी सीखते हैं और उनका सर्वांगीण विकास होता है, शामिल होती हैं।

- इसके साथ-साथ पाठ्यक्रम विषय केन्द्रित होता है, कक्षानुसार सीखने के क्रम, अनुपात और मूल्यांकन को बताता है।
- पाठ्यपुस्तके, पाठ्यक्रम में दिये गये विषयों को पाठ्य वस्तु प्रदान करती है।

इसके साथ ही साथ आशायित (Intended), हस्तान्तरणीय (Transacted), आकलित (Assessed) तथा गुप्त (Hidden) पाठ्यचर्या पर भी चर्चा हुई। समूह से यह बात उभर कर आयी कि स्कूल व्यवस्था को इस ओर सचेत रहना चाहिए कि गुप्त पाठ्यचर्या के माध्यम से स्कूल में कोई ऐसा व्यवहार न हो जो बच्चे के स्कूल से बहिष्करण का कारण बने।

वर्तमान में, शिक्षा के अधिकार अधिनियम 2009 के परिपेक्ष्य में एन.सी.ई.आर.टी. द्वारा सीखने के प्रतिफल (Learning Outcomes) परिभाषित किए गए हैं। इस कार्यशाला में वर्तमान में एन.सी.ई.आर.टी. द्वारा विकसित सीखने के प्रतिफल (Learning Outcomes) के सन्दर्भ में, राज्य की वर्तमान पाठ्यपुस्तकों को देखा गया। समूह ने कुछ पाठ्यपुस्तकों- कक्षा 4 पर्यावरण अध्ययन, कक्षा 4 और 5 गणित, कक्षा 3 और 4 हिन्दी, इत्यादि का लर्निंग आउटकम के संदर्भ में विश्लेषण किया। जिसमें हिन्दी और गणित की पुस्तकों को राष्ट्रीय स्तर पर परिभाषित लर्निंग आउटकम के अनुकूल पाया गया, परंतु अन्य पुस्तकों के संदर्भ में और अधिक विश्लेषण और समीक्षा की आवश्यकता महसूस की गई।

तृतीय दिवस -

इस दिन पाठ्यपुस्तकों पर चर्चा को जारी रखते हुए विचार आये कि लर्निंग आउटकम को प्राप्त करने के लिए पाठों को बच्चों के अनुभवों और जीवन से जोड़ना होगा जिससे कि रटने पर जोर कम हो और समझ को बढ़ावा मिले। कक्षाओं में बच्चों को अधिक से अधिक करने और बोलने के मौके दिए जाए।

इस सत्र के बाद आई एफ आई जीए छत्तीसगढ़ के श्री महेन्द्र मिश्रा जी ने समाजिक रचनावाद और पाठ्यचर्या पर समूह से चर्चा की। चर्चा इस प्रकार रही- पाठ्यचर्या को समय से बांधा नहीं जा सकता है। सीखना और सिखाना Intergenerational है। समाज के पास सीखने-सीखाने के अपने परम्परागत तरीके हैं। लोग अपने अनुभवों से, अभ्यास से ज्ञान का सृजन स्वयं करते हैं। स्कूली पाठ्यचर्या की बात करें तो इसमें विद्यार्थी, शिक्षक व विषय सम्मिलित है। इसके परिपेक्ष्य में यदि कक्षाओं को देखा जाए तो निम्नलिखित मुद्दे सामने आते हैं।

- हमारी कक्षाओं का स्वरूप क्या है? कक्षाओं में कितनी विविधता है? विभिन्न भाषाओं, विभिन्न क्षेत्रों, विभिन्न संस्कृतिके बच्चे हैं। शिक्षक की प्रभुता है, बच्चों का मौन है। यदि ऐसा रहा तो सांस्कृतिक स्वतन्त्रता कैसे आएगी?
- कक्षाओं में समानता जीवन्त हो, बच्चों के लिए समावेशी और सार्थक अनुभव हों। कक्षाओं को पाठ्यपुस्तकों से बाहर निकाल कर बच्चों के जीवन से जोड़ा जाए। शिक्षण बाल-केन्द्रित हो।
- इस सत्र में चर्चा के दौरान यह बिन्दु भी रखा गया कि हमारा संविधान और NCF-2005 समानता व समान अवसरों की अनुशंसा करते हैं। यदि हमें लोकतंत्र में जीना है तो सहअस्तित्व पर विश्वास कर हर वर्ग के स्थानीयता, सामाजिक व सांस्कृतिक संदर्भों को शिक्षा में शामिल करना होगा।

तीसरे दिन के अंतिम सत्र में “प्रारूप राष्ट्रीय शिक्षा नीति 2016” की प्रतियाँ प्रतिभागियों को दी गईं। इस प्रारूप

के विभिन्न अध्यायों पर अध्ययन के पश्चात समूहों ने प्रस्तुतीकरण किया। प्रत्येक प्रस्तुतीकरण पर विमर्श, चर्चा की गई, जिससे इस नीति पर समूह की समझ और भी पुख्ता हो।

कुछ बिन्दु जिस पर समूह वैचारिक तौर पर विभाजित रहें, इस प्रकार हैं- “कक्षा में रोके न जाने की नीति” “कक्षा 5 व 8वीं में फेल किए जाने की प्रणाली”। हम जानते हैं कि प्रत्येक बच्चे की सीखने की गति व क्षमता अलग-अलग होती है। 8वीं में फेल होने पर बच्चे के विद्यालय से दूर हो जाने का अंदेश है। परन्तु दूसरा समूह इस प्रावधान से सहमत दिखा। नई शिक्षा नीति के प्रारूप में बिन्दु 4.5.8 के अनुसार कक्षा 10 में गणित, विज्ञान व अंग्रेजी की परीक्षा 2 स्तरों पर होगी - भाग ‘क’ उच्च स्तर और भाग ‘ख’ निम्न स्तर पर। व्यावसायिक विषयों में जाने वाले विद्यार्थी भाग ‘ख’ की परीक्षा देंगे। इस पर भी समूह की सहमति नहीं बन पाई। एक समूह का कहना था कि समानता के मुद्दे को लेकर भी इस बिन्दु पर विचार करना चाहिए। जबकि दूसरा समूह इस बिन्दु से सहमत दिखा, क्योंकि इससे सभी बच्चों के 10वीं कक्षा में उत्तीर्ण होने के अवसर बढ़ जाएंगे।

समूह ने राज्य की पाठ्यचर्या में व्यावसायिक शिक्षा को इतना सुदृढ़ करने की बात कही है कि प्रतिभाशाली बच्चे भी इस ओर आकर्षित हों। शिक्षानीति पर विमर्श के बाद यह कार्यशाला इस विचार के साथ सम्पन्न हुई कि पाठ्यचर्या प्रक्रियाएँ बहुआयामी व गत्यात्मक हैं। इस प्रकार के कार्यक्रम नियमित रूप से एक निश्चित अवधि के पश्चात आयोजित होने चाहिए ताकि पाठ्यचर्या परिपेक्ष्य और प्रक्रियाओं पर हमारी समझ बढ़ती रहे।

‘स्कूली शिक्षा के बदलते परिदृश्य में अध्यापन-कर्म की रूपरेखा’ पर संगोष्ठी : एक संक्षिप्त रपट

23 से 25 मई, 2017 तक दिल्ली के अम्बेडकर विश्वविद्यालय में ‘स्कूली शिक्षा के बदलते परिदृश्य में अध्यापन-कर्म की रूपरेखा’ विषय पर एक तीन दिवसीय संगोष्ठी का आयोजन किया गया। अजीम प्रेमजी विश्वविद्यालय की शैक्षिक विषयों पर हिन्दी व कन्नड़ में संगोष्ठी आयोजित करने की योजना के तहत हिन्दी शृंखला ‘शिक्षा के सरोकार’ के तहत यह पहला आयोजन अजीम प्रेमजी विश्वविद्यालय, बेंगलूरू तथा अम्बेडकर विश्वविद्यालय दिल्ली, ने संयुक्त रूप से किया।

संगोष्ठी की शृंखला का आयोजन अजीम प्रेमजी विश्वविद्यालय, अजीम प्रेमजी फाउण्डेशन के काम और उसकी व्यापक परिकल्पना का एक अभिन्न अंग है। फाउण्डेशन एक गैर लाभकारी संस्था है जो भारत में शिक्षा की गुणवत्ता और शैक्षिक अवसरों की समानता के लिए बड़े पैमाने पर गहराई के साथ संस्थागत प्रभाव डालने के लिए कार्यरत है। ‘अनुवाद पहल’ कार्यक्रम के तहत विश्वविद्यालय का एक उद्देश्य अपने कार्य क्षेत्र की भाषाओं (फिलहाल हिन्दी तथा कन्नड़) में गहन शैक्षिक विमर्श, शोध व उच्च शिक्षा को प्रोत्साहित करना भी है।

संगोष्ठी के संयुक्त आयोजक अम्बेडकर विश्वविद्यालय, दिल्ली में स्नातक, स्नातकोत्तर और शोध कार्यक्रमों की शिक्षा दी जाती है। इसके स्कूल ऑफ़ एजुकेशन स्टडीज की कल्पना पेशेवर और अध्येताओं के एक ऐसे उभरते समुदाय के रूप में की गयी है जो विद्वत्ता और नित अभ्यास के जरिये शिक्षा को उसके ऐतिहासिक और समसामयिक सन्दर्भों में समझेंगे। अनिवार्यतः सामाजिक शास्त्र, मानविकी और कला विषयों में अनुसन्धान और उच्च शिक्षा प्रदान करने के लिए दिल्ली राष्ट्रीय राजधानी प्रदेश सरकार द्वारा 2008 में इस विश्वविद्यालय की स्थापना की गई थी। इस विश्वविद्यालय की रुचि भी हिन्दी में शैक्षिक विमर्श व उच्च शिक्षा को प्रोत्साहन देने में है।

संगोष्ठी की पृष्ठभूमि

भारत के स्कूली तंत्र में शिक्षक की भूमिका पर हाल की चर्चा शिक्षक की वांछनीय योग्यता, प्रशिक्षण और बच्चों के सीखने-सिखाने में उसकी भूमिका पर भी केन्द्रित हो रही है। यह चर्चा सरकारी प्राथमिक व अब उच्च-प्राथमिक व माध्यमिक विद्यालयों में वंचित वर्ग के बच्चों के आने से ज्यादा तीखी हुई है। यह स्पष्ट है कि हमारे स्कूली तंत्र में अध्ययन-अध्यापन के वांछित स्तर नहीं मिलते हैं। हालांकि स्थिति को बेहतर बनाने की दिशा में कई तरह के प्रयास हो रहे हैं, लेकिन सबसे बड़ी चुनौती यह है कि स्कूलों में पर्याप्त संख्या में कुशल शिक्षक शिक्षण के लिए उपलब्ध हों। योग्य शिक्षकों की नियुक्ति हो, व्यवस्थित ढंग से उनकी क्षमता वर्धन की व्यवस्था हो और उनके लिए ऐसी परिस्थितियाँ बनाई जाएँ कि वे अपना काम उत्साहपूर्वक कर सकें। इसके इर्दगिर्द कई सवाल हैं कि एक योग्य शिक्षक से हमारा तात्पर्य क्या है व उसकी योग्यता देखने के क्या मापदंड हों ओर फिर एक योग्य और सक्षम शिक्षक बनने की प्रक्रिया क्या होगी?

कई बार यह कहा जाता है कि सक्षम शिक्षक बनने के लिए सामाजिक प्रतिबद्धता, काम के प्रति निष्ठा और प्रेरणा अधिक महत्वपूर्ण कारक हैं, स्कूल में पढ़ाने के लिए विषय-वस्तु, शिक्षण प्रक्रिया, शिक्षा के दार्शनिक व सामाजिक आधार आदि की बारीक समझ इतनी महत्वपूर्ण नहीं है। यह भी कहते हैं कि कोई भी आम व्यक्ति अगर पढ़ाने की प्रेरणा और उत्साह से भरपूर हो तो वह विषय-वस्तु और उसे पढ़ाने का समुचित तरीका खुद ही ढूँढ़ लेगा चाहे वह दसवीं पास हो या एम ए हो।

इससे यह सवाल उभरता है कि क्या सेवापूर्व प्रशिक्षण से शिक्षकों को स्कूल की वास्तविक ठोस परिस्थितियों में पढ़ाने में कोई मदद मिलती है या वे जो कुछ भी सीखते हैं वे स्कूल में काम करते हुए व्यवहारिक स्तर पर सीखते हैं? अगर सेवापूर्व प्रशिक्षण जरूरी है तो उस प्रशिक्षण का स्वरूप और उसका शिक्षाक्रम क्या होना चाहिए?

इसके साथ-साथ शिक्षकों व उनके कार्य से सहानुभूति रखने वाले लोगों के भी कई सवाल हैं। सरकारी स्कूल के शिक्षक प्रशासन के व्यवहार से तो चिंतित हैं ही, इससे भी परेशान हैं कि उन्हें स्कूल में और स्कूल के बाहर भी शिक्षकीय काम के अलावा बहुत कुछ करना पड़ता है। राष्ट्रीय पाठ्यचर्या 2005 के बाद से (असल में तो पहले से ही) सभी ओर से पर खासतौर पर कई शिक्षकों की ओर से भी यह पुरजोर ढंग से कहा जाने लगा कि शिक्षक को न तो किसी भी तरह की परीक्षा लेने की और न ही विद्यार्थियों के साथ किसी प्रकार की सख्ती की इजाजत है। ऐसे में शिक्षक गुणवत्तापूर्ण शिक्षा को कैसे सुनिश्चित करें? सरकारी स्कूलों में जिन सामाजिक समूहों के बच्चे आ रहे हैं उनमें पढ़ने-लिखने की कोई पारिवारिक परम्परा नहीं है और वे अपने बच्चों की न तो घर में मदद कर पाते हैं और न ही पढ़ने-लिखने का परिवेश ही मुहैया करवा पाते हैं। ऐसे में हम क्या करें?

स्कूली तंत्र की सतह पर उठने वाले इन प्रश्नों के मूल में कुछ ज्यादा गहरे सैद्धांतिक सवाल हैं।

अजीम प्रेमजी विश्वविद्यालय, बेंगलूरु तथा अम्बेडकर विश्वविद्यालय दिल्ली द्वारा संयुक्त रूप से आयोजित तीन दिवसीय संगोष्ठी इन्हीं सवालों के परिप्रेक्ष्य में व्यापक विचार-विमर्श के लिए आयोजित की गई। इसे हिन्दी में करने का निर्णय अधिक से अधिक लोगों को इस विमर्श में सीधे जोड़ने के प्रयास के चलते भी था और हिन्दी में शिक्षा पर अच्छे स्तर की सामग्री तैयार करने के लिए भी। संगोष्ठी का आधार पत्र इस सबके आलोक में बनाया गया और उसे देश भर में फैली विभिन्न शैक्षिक संस्थाओं तथा शिक्षा, खासकर शिक्षक शिक्षा, में काम कर रहे व्यक्तियों तथा संस्थाओं तक पहुँचाया गया। संगोष्ठी में विषय को तीन प्रकरणों में बाँटा गया था।

भारत में अध्यापन-कर्म व उसमें बदलाव

एक अध्यापक के काम को ठीक-ठीक किस प्रकार समझें। अध्यापक के काम को उससे मिलते-जुलते अन्य कामों से कैसे अलग किया जाए? शिक्षण-कर्म की विशिष्टता क्या है? कल्पना यह थी कि इन प्रश्नों पर नए सिरे से भारतीय समझ व परिस्थिति के संदर्भ में तर्कपूर्ण विचार हो पाएगा और इन उम्मीदों पर सेमिनार खरा उतरा।

अध्यापक बनने की प्रक्रिया

दूसरा बिन्दु था, शिक्षक-शिक्षा का संस्थागत स्वरूप कैसा हो? शिक्षक-शिक्षा के लिए आज किस प्रकार की पाठ्यचर्या, अध्यापन-विधि और प्रशिक्षकों की जरूरत है? क्या अध्यापक का काम करते हुए निरंतर सीखना और उनका क्षमता-वर्धन भी है? क्या उसके पास इसके लिए समय है? आदि

अध्यापक की पहचान

इस भाग का प्रयास आधुनिक शिक्षा के प्रसार के साथ व नये संस्थानिक और प्रशासनिक ढाँचे के आलोक में बदलती व संकीर्ण होती शिक्षक की भूमिकाओं को समझने का था। इसमें हाल ही में नई तरह से निर्मित हुई शिक्षक की पहचान को व्याख्याइत व विश्लेषित किया गया व इसके निहितार्थों को समझने का प्रयास किया गया।

शिक्षक जिस प्रकार अपनी आत्मछवि गढ़ते हैं उससे उनका अध्यापन-कर्म प्रभावित होता है। अपने काम और परिवेश के अर्थ-ग्रहण में आत्म चेतना की महत्वपूर्ण भूमिका होती है। ऐसा लगता है कि आज मे समय में शिक्षक की आत्मछवि और उसकी जनछवि में बड़ी दरार पैदा हो गई है। सेमिनार के लिए बदले हुए परिवेश में शिक्षक की पहचान के विविध तंतुओं को समझने और उन पर नए सिरे से विचार करने की जरूरत महसूस हुई। सेमिनार में कई मसलों पर पर्चे लिखे गए; जैसे, आधुनिक शिक्षा-तंत्र के विकास के साथ शिक्षक की अध्यापकीय पहचान किन पड़ावों से होकर गुजरी है? भारत जैसे देश में जन्म आधारित अन्य पहचानों के साथ इस नई पेशेवर पहचान का क्या ताल्लुक रहा है? स्कूली शिक्षा-तंत्र में कौन-से वे घटक हैं जो शिक्षक की पेशेवर पहचान को सुदृढ़ करते हैं और कौन-से तत्व ऐसे हैं जिनसे शिक्षक की अस्मिता का क्षरण होता है?

कुछ वाक्य संगोष्ठी के आखिरी पड़ाव तक पहुंचने के रास्ते के बारे में। व्यापक तौर पर वितरित आधार पत्र में लोगों से एक तय तारीख तक पर्चे का मूल विचार भेजने को कहा। इस एब्स्ट्रैक्ट का अध्ययन आयोजन समिति द्वारा चुने गए अजीम प्रेमजी विश्वविद्यालय तथा

अम्बेडकर विश्वविद्यालय के प्राध्यापक विशेषज्ञों ने किया। इन एब्स्ट्रैक्ट में से उचित स्तर के व उपयुक्त कौन से हो सकते हैं कर आकलन कर चयनित प्रतिभागियों से संगोष्ठी के लिए परचा लिखने का आग्रह किया। इस प्रक्रिया में कई प्रतिभागियों से पुनः एब्स्ट्रैक्ट लिखने का अनुरोध भी किया गया।

कुल मिलाकर 184 एब्स्ट्रैक्ट प्राप्त हुए। इनमें से 116 लोगों से पूर्ण परचा लिखने का आग्रह किया गया। अन्तिम रूप से लगभग 100 परचे आयोजन समिति को प्राप्त हुए, जिनमें से 72 की प्रस्तुति इस संगोष्ठी में की गई।

परचों को 3 मुख्य विषयों के अन्तर्गत 15 उप विषयों में बाँटा गया। उप विषयों की विविधता की झलक नीचे दी गई है :

मुख्य विषय: भारत में अध्यापन-कर्म व उसमें बदलाव

उपविषय

- ◆ कक्षा में ज्ञान-निर्माण की प्रक्रियाएँ
- ◆ अध्यापन की वर्तमान चुनौतियाँ
- ◆ संस्थागत और शिक्षणशास्त्रीय प्रक्रियाएँ
- ◆ शिक्षण-कर्म का स्वरूप: व्यापक परिप्रेक्ष्य
- ◆ शिक्षण के विविध आयाम: सैद्धान्तिक विवेचन, शोध और अनुभव
- ◆ बदलते हुए परिप्रेक्ष्य में शिक्षक का काम

मुख्य विषय: अध्यापक बनने की प्रक्रिया

उपविषय

- ◆ शिक्षण के वृत्तांत
- ◆ शिक्षक बनने की पूर्व तैयारी: संस्थागत प्रक्रियाएँ
- ◆ सेवाकालीन सक्रियता: संस्थागत प्रक्रियाएँ और स्वैच्छिक मंच
- ◆ विविध अनुभव और सैद्धान्तिक विवेचन
- ◆ संस्थाओं के काम
- ◆ बदलते समय की जरूरतें
- ◆ अनुभव और विवेचन

मुख्य विषय : अध्यापक की पहचान

उपविषय

- ◆ व्यापक सांस्कृतिक-ऐतिहासिक परिप्रेक्ष्य
- ◆ व्यापक नीतिगत परिप्रेक्ष्य और शिक्षण के विविध अनुभव

परचा प्रस्तुत करने वालों में देश भर के विभिन्न हिन्दी भाषी क्षेत्रों के शिक्षक, शिक्षक-प्रशिक्षक, सरकारी तथा गैर-सरकारी शैक्षिक एवं स्वैच्छिक संस्थाओं के कार्यकर्ता, शिक्षाविद्, विश्वविद्यालयों के प्राध्यापक, शोध संस्थाओं के शोधार्थी तथा स्वतंत्र रूप से काम कर रहे शिक्षा-सरोकारी शामिल थे।

इन व्यक्तियों की भागीदारी के मोटे विश्लेषण अनुसार सेमिनार में शामिल 14 राज्यों से आए 82 में से परचे प्रस्तुत करने वाले लोगों में 36 महिलाएँ थीं। यह जानना महत्वपूर्ण है कि पर्चा प्रस्तुत करने वालों में 12 स्कूल में पढ़ाने वाले शिक्षक थे, 23 शिक्षक-प्रशिक्षक थे। महाविद्यालयों व विश्वविद्यालयों में पढ़ाने वाले 26 संकाय सदस्यों द्वारा, 9 शोधार्थियों और एक अध्ययनरत छात्रा द्वारा शोध परचे पढ़े गये। शिक्षा में स्वतंत्र रूप से कार्य करने वाले 3 शिक्षक-शिक्षकों/ शिक्षा सरोकारियों ने भी परचे पढ़े। कुल मिलाकर पर्चा पढ़ने वाले 7 विश्वविद्यालय, 4 शिक्षक-शिक्षा संस्थान, 7 विद्यालय, 4 महाविद्यालय और 8 स्वयंसेवी संस्थाओं/ संगठनों से थे।

मुख्य विषय: भारत में अध्यापन-कर्म व उसमें बदलाव, के 6 उपविषयों में 28 पेपर पढ़े गए, दूसरे मुख्य विषय : अध्यापक बनने की प्रक्रिया, के 7 उपविषयों में 33 पेपर पढ़े गए और तीसरे मुख्य विषय: अध्यापक की पहचान, के 2 उपविषयों में 13 पेपर प्रस्तुत किए गए।

संगोष्ठी में विचार-विमर्श में परचा प्रस्तुत करने वाले प्रतिभागियों के अलावा लगभग 100 से अधिक व्यक्तियों ने श्रोताओं के रूप में अपनी उपस्थिति दर्ज करवाई। इनमें अम्बेडकर विश्वविद्यालय के विद्यार्थी भी शामिल थे। इन विद्यार्थियों ने संगोष्ठी के विभिन्न सत्रों में व्यवस्था बनाए रखने में सहयोग भी दिया।

70 परचों की प्रस्तुति के लिए 20 समानांतर सत्र रखे गए। हर सत्र में 2 से 4 व्यक्तियों ने अपने परचे प्रस्तुत किए।

कई व्यक्तियों ने अपने परचे की प्रस्तुति के लिए पावर-पाइंट माध्यम का उपयोग किया। प्रस्तुति के लिए क्रमशः 10,20,25 मिनट का समय दिया गया था। हर प्रस्तुति के बाद उपस्थित श्रोताओं ने प्रस्तुतकर्ता से सवाल-जवाब भी किए। इसके लिए पूरे सत्र में 30 से 40 मिनट का समय अलग से निर्धारित था। हर सत्र को एक सक्षम अध्यक्ष ने संचालित किया।

इस संगोष्ठी की एक खास बात यह रही कि निर्धारित प्रक्रिया के तहत परचा लिखने वाले व्यक्ति को ही संगोष्ठी में परचा प्रस्तुत करने की अनुमति दी गई। संगोष्ठी में लगभग 15 ऐसे प्रतिभागियों ने भी भाग लिया, जिनका परचा प्रस्तुति के लिए चुना नहीं गया था। इन्हें भी संगोष्ठी में भाग लेने के लिए आमंत्रित किया गया था, ताकि वे विचार-विमर्श में हिस्सा ले सकें, साथ ही यहाँ उभरी बातों को ध्यान में रखकर वे अपने परचे की स्वयं समीक्षा करें और उसे बेहतर बनाएँ।

संगोष्ठी में प्रस्तुत किए जाने वाले परचों के लिए लिखे गए पहले एब्सट्रैक्ट का लगभग 175 पेज का एक संकलन 'आरम्भिक विचारों की बानगी' भी संगोष्ठी के प्रतिभागियों को दिया गया।

संगोष्ठी के प्रतिभागियों के लिए संगोष्ठी की अवधि के लिए भोजन सहित आवास व्यवस्था आयोजकों द्वारा की गई। साथ ही उन्हें अपने निवास स्थान से दिल्ली आने-जाने के लिए रेल के द्वितीय श्रेणी वातानुकूलित का किराया दिया गया।

आयोजक संस्थाओं का विचार है कि वे 'शिक्षा के सरोकार' की इस शृंखला को आगे बढ़ाएँगे। इस संदर्भ में संगोष्ठी में अंतिम दिन समापन सत्र में प्रतिभागियों ने अपने सुझाव सबके सामने रखे।

संगोष्ठी के लिए आए परचों का एक चयन प्रकाशित करने की योजना भी प्रस्तावित है।

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
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