Voices of Teachers and Teacher Educators

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About the Journal

The journal 'Voices of Teachers and Teacher Educators', an initiative of the Ministry of Human Resource Development (MHRD) (at present Ministry of Education) is 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 and also the National Education Policy, 2020 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 seeks to provide a platform and build a network for our voices, ideas and reflections. To enable this journal to reflect all voices, we must contribute to it in as many ways as we can. We look forward to many contributing with different experiences, questions, suggestions, perspectives as well as critical comments on different aspects of teacher education and schooling. The contributions could be in the form of articles, reports, documents, pictures, cartoons or any other forms of presentation amenable for print. We also seek comments and reflections on the current issue to improve publication and make it a participative endeavour. We must together make this journal truly reflective of our voices. We look forward to receive your contributions for the forth coming issue. We also look forward to your comments and suggestions. The contributions can be sent to the following:
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Contents

Editorial

This issue has many papers that focus on aspects emphasized in the NEP 2020. The effort towards putting the ideas enshrined in NEP 2020 into practice has begun and many processes are being initiated towards that objective. The papers in this issue explore some of these possibilities and some new ideas around making NEP 2020 work on the ground. They also explore the challenges that may need to be overcome in order to make the implementation effective

The other significant thing that has happened is the opening out of life subsequent to the retreat of Corona in India. As life and face to face interactions come back to what they were before the virus hit the human society things are coming back to normal. As a result of this easing out, schools have finally opened after a long gap. It is now time for the teachers to assess the effect of the long gap and find ways to ensure that the learning by children is continued. There are many stories about instances of teachers finding ways using self-constructed materials or modifying existing materials to focus on those ideas that form the base for further learning. As the teachers continue to engage with the task of ensuring learning of children, some of the ideas emerging during this period could be relevant for further explorations. The use of technology, its access, possibility, its strengths and limitations, when used for classroom teaching-learning has become an important concern. With these explorations, the questions of stage-wise and area-wise suitability of the use of technology have also emerged as an important concern. The use of ICT in education has always been a contested terrain and the NEP 2020 has put forward many critical points that have to be kept in mind while promoting the use of ICT to aid learning in classrooms. Among other things, NEP 2020 underlines the development of a holistic view of the child and his/her education. It emphasises the need to ensure that children remain curious and have the capability to learn more as they explore new horizons. It also reiterates the need to ensure conceptual development and ability to engage with new materials and sources of knowledge to be able to learn on their own rather than to be overburdened and forced into learning by rote and considering remembering facts equivalent to knowing and learning.

The NEP 2020 has made far reaching recommendations for teacher education as it has emphasised again the need for improving the quality of teacher training and has also pointed out the need to attract good quality candidates for the courses of teacher education. It has thus urged for more emphasis on the four year programme and making institutions engaged in teacher education more broad based and not remain just colleges imparting single teacher education courses. The NEP has also urged better control over the quality of the teacher education colleges.

In terms of the structure of school education, the NEP has suggested combining pre-primary years with the first two years. By this step it is placing an emphasis on foundational language and mathematics learning. It has suggested that choices available to students at secondary level and beyond should be flexible, allowing them freedom to pick up subjects, that are currently not considered to be from the same stream. Given the important radical suggestions made by the NEP 2020, the effort to understand how these would be put on the ground would continue. As these become operational, experiences from them would need to be continuously analysed and shared leading to the development of a deeper understanding. We would therefore continue to carry articles on this theme.

This issue of voices carries 19 articles, 8 of which are linked to the NEP 2020. These include papers by Nimrat Khandpur, Nidhi Gulati and Manish Jain, Gurumurthy Kasinathan, Yukti

Sharma and Priya Gupta, Kavita Sharma and Purnima Sharma, Pallavi Kaushik, Jasim Ahmad and Aerum Khan, Haneet Gandhi and the paper by Smriti Sharma and Kalyani Akalamkam. There are 5 articles that are related to teacher Training and its challenges , , these include the papers by Shamim Aara Hussain and Varinder Singh , Sindhu Mathai, Preeti Vivek Mishra, S Prabhu Shankar and the paper by Prasanna, E, and Thiyagu, K, There are 2 articles related to pedagogy. These include papers by M Jabir and the paper by M. Balamurugan. The article by Krishan Kumar Chauduri is focussed on the mental trauma of students due to COVID and the articles by Aarti Yadav on education of migrant workers. The next paper is by Kadeeja Sanam K.P. and. K. Abdul Gafoor is focussed on the claendar for anganwadi workers and the last paper by Emel Guler, Buket Karatop, Gülsün Kurubacak and Ramesh Chander Sharma on open and distance technology enabled environments

The paper in the first category include:

The paper by Nimrat KD with the title Flexibility and Choice: Imagining the Implementation of the National Education Policy 2020 for the Secondary Stage focusses on the restructuring school education into a 5+3+3+4 structure, with the last stage, comprising grades 9 to 12, viewed as a single stage as proposed by the NEP (2020). The paper also discusses the fact that the students would be empowered through 'increased flexibility and choice of subjects to study, at the secondary school stage. It brings out the point that NEP suggests no hard separation among 'curricular', 'extracurricular', or 'co-curricular' subjects, among 'arts', 'humanities', and 'sciences', or between 'vocational' or 'academic' streams.

The paper 'Local in Education Policy Discourse in India' by Nidhi Gulati and Manish Jain examines the way in which the stress on local context is placed in the NEP (2020). . They analyse the evolving concept of the local in the policy discourse. The paper indicates the urge for 'local' as an aesthetic and provides a historical overview of the idea of local in the context of and in relation to education from colonial to contemporary times. With attention to various policies, reports and 'innovative' programmes. The paper explains how local as a leitmotif operates in NEP, 2020 and offers suggestions as to how local may be given space in policy implementation.

The paper by Gurumurthy Kasinathan, 'National Education Policy 2020 – Imagining Digital Technologies as a Resource to Achieve Educational Aims', is focussed on the manner digital technologies maybe used to achieve educational aims. The paper points out that as per the National Education Policy, 2020 (NEP) education is fundamental for achieving full human potential, and for the development of an equitable and just society. The paper suggests that digital technologies can help create a rich learning environment in all subjects and at all levels. The paper points out that uncritical adoption of the latest craze of 'personalized learning' can derail the basic premise of education as social constructivism, and its purpose as social transformation. The paper also says that teacher development needs to enable teachers to become creators, visualizers, designers of digital technologies to their contexts, and not become users restricted to using products developed by business entities

The paper titled Nurturing Creative Potential of All Children: Exploring the Possibilities of Realizing the Vision of NEP 2020 in Indian Classrooms by Yukti Sharma and Priya Gupta focusses on aspects that would help to operationalize the vision of NEP 2020 with respect to the idea of creativity in education. The paper presents observations and anecdotes from Indian classrooms that show evidence for the creative potentialities amongst children and convey the possibilities of nurturing these potentialities.

The paper NEP 2020 and EVS Curriculum contributed by Kavita Sharma and. Purnima Sharma brings to our notice an analysis of the current EVS program (curriculum and the

text books) in the light of the NEP (2020). It analyses the curriculum load, nature of the EVS, pedagogical and assessment aspects using the existing literature, different policy documents and research studies and how people look at the issue. The study suggests that a misconstrued understanding of EVS and conventional approaches to its teaching learning and assessment lead to its poor implementation.

Pallavi Kaushik, Jasim Ahmad and Aerum Khan in their paper Teacher education in India viewed through the lens of National Education Policy-2020, studies and reflects on the perspectives of in-service teacher educators teaching in various teacher education colleges in Delhi regarding the changes proposed by the NEP (2020) with reference to the provisions and reinvention of teacher education. The paper suggests that there are tremendous possibilities in the suggestions of NEP (2020) but there are also apprehensions about the implementation and many challenges can be anticipated.

The paper Preparedness and Understanding required for the Attainment of Foundational Numeracy in India by Haneet Gandhi focusses on the need to strengthen the mathematical abilities following the National Education Policy 2020. The paper points out that the policy emphasizes on the development of mathematical skills from early years onwards and the development of 'foundational numeracy'. The article also emphasises the need for sensitivity to take 'numeracy' beyond numerical knowhow and developing a positive mathematical dispositions.

The paper A Study of School Teacher's Perspective on National Education Policy 2020 by - Smriti Sharma and Kalyani Akalamkam presents the responses to the provisions in the National Education Policy (2020) . The study attempts to unravel their perception and opinion regarding some of the issues about the policy that are being discusses. The study considers the teachers as the key stakeholders in this situation and covers both private and public school teachers. Presenting the analysis of the data under four broad themes the paper finds varying degrees of agreement of school teachers on aspects of NEP (2020). It also notes that the responses of public and private school teachers are statistically differently.

The papers in the second category include:

The paper by Shamim Aara Hussain and Varinder Singh Challenges with the title Bilingual Teaching among Teachers of Teacher Education Institutions of Punjab also focuses on the issue of language teaching and learning. The paper brings out the challenges of language diversity faced by teachers in the schools and the support structures available. Through the analysis of the responses of the teachers on this issue the paper underlines the need of intervention to enable possibilities.

Sindhu Mathai in her paper Examining our conditionings: a session with post-graduate students on Critical Pedagogy presents a study of the notion of inclusion among potential educators. She points out that opportunity for self-expression, dialogue and sharing about their own growing up and reflecting on that is helpful for helping them work on their own beliefs and attitudes. This helps unpack the conditioning that happens naturally and helps them modify their attitudes. This is essential in the wake of the expectation of the National Education Policy (2020 that schools would develop caring, inclusive communities.

The article by Preeti Vivek Mishra "Encouraging Teachers to Experience Emodiversity: A Reflective Retelling of a Mental Health Initiative presents the examples and analyses from experience of teachers regarding their interactions and their emotions. The author suggests that teachers need to be allowed to be human in their interactions. They should not be expected to behave like people devoid of feelings like anxiety, disappointment, unhappiness

etc. and should be allowed to share them. Besides this they should also keep away from the other extreme of emotional outbursts and knee-jerk responses without engaging with the conditions of the learners at that time.

The paper by S. Prabu Shankar titled Paradigm shift towards practical oriented teaching of mathematics highlights the need for practical oriented teaching of mathematics for better conceptual understanding and improved mathematical problem solving ability among students studying at the high school level. This paper also attempts to inquire upon the teacher's attitude, preparedness, the possibilities and the pros and cons of whether practical oriented teaching of mathematics is made possible.

The paper 'Virtual Internship training programme: pre-service teachers' perception' by Prasanna, E, and Thiyagu, K discussed the crisis faced by the education sector due to the COVID-19 explosion. It reflects on the basic challenge of providing school experience to trainees during this period. In the absence of face to face school experience being possible it points out the way in which e internship was tried out. The data of the study points to the fact that satisfaction with the quality of such an e-internship was low.

The papers in the next section are:

The paper by M. Jabir titled Role of Short Stories in Teaching English Listening Skill highlights the importance of short stories in Teaching English listening skill through classroom observations and experiences at elementary and secondary level in district Kargil (Ladakh). The paper reiterates the importance of dialogue in classrooms, particularly dialogues where the children also participate and feel free to express their thoughts.

In his paper Learning Anatomical Structures of Dicot Plants using Jigsaw Puzzles among Middle School Students, M. Balamurugan emphasises the need for teachers to try different pedagogical strategies in their classrooms based on the situation of learners. Using the example of a jigsaw puzzle to help standard eighth students understand and learn about the transverse sections of typical dicot stem and root based using labelled drawings. The study shows that using specifically designed jigsaw puzzles helps in being able to remember the structure and function of what has to be studied.

The last four papers are:

The paper by Krishna Kumar Chaudhuri in hindi has the title, "कोरोना महामारी के दौरान विद्यार्थियों की मानसिक स्थिति एवं बचाव के उपाय – एक विश्लेषण". The paper presents an analysis of the mental and emotional condition of the students during the COVID 19 spread. He discusses the kind of fears children have and the trauma they have been through and emphsises that due to COVID children have lost the possibility of face to face contact and most of their interactions have been online if at all they have had some. He argues for measures to respond to this situation. The paper entitled How accessible is education for migrant workers' children? A case study of an on-site school by Aarti Yadav considers the impact of interstate migration of construction workers on the education of their children. She points out that the children are often deprived of educational facilities due to interplay of several social and economic push factors due to several barriers in the educational path of these children.

The paper Implementing Thematic Calendar in Anganwadis of Kerala: Challenges Faced by Anganwadi Worker by Kadeeja Sanam K.P. and. K. Abdul Gafoor presents the experience and analysis from the study of the introduction of a thematic calendar for early years with

the objective of holistic development of the children of 3-6 years. This study found that the challenges faced by the Anganwadi workers in implementing the thematic calendar relate to enrollment, and availability of learning aids. There are also difficulties with, teaching-learning practices, infrastructure and logistical facilities, and administrative support functions.

The paper "A Strategic Decision Model Proposal for Open and Distance Flexible Technology-Enabled Learning Environments" by Emel Guler, Buket Karatop, Gülsün Kurubacak and Ramesh Chander Sharma presents the steps through which a flexible model using technology learning environments can be built. It draws attention to the need for taking into account the experience and perspectives of all persons involved in the transactions and attempt to build a synergetic structure. The model must have continuity as well as a dynamic possibility of change.

We look forward to your comments on the issue and also apologise for the delay in the uploading of this issue.

Flexibility and Choice
Imagining the Implementation of the National Education Policy 2020 for the Secondary Stage

*Nimrat KD Khandpur**

Abstract

The interstate migration of construction workers has a significant impact on the education of their children. Their children are often deprived of educational facilities due to the interplay of several social and economic push factors. The present research is a case study of an on-site school serving migrant workers' children and aims to know the educational status of migrant workers' children and understand their educational problems. The qualitative data reveals several barriers in the educational path of migrant workers' children such as low economic status of workers, safety concerns related to sending children to far off schools in migrated places, language barriers in school, lack of awareness about free education and other benefits provided in government schools and impoverished site school.
Keywords: School education, migrant workers' children, on-site schools.

Introduction

The National Education Policy (NEP) 2020 proposes some fundamental shifts in school education, including restructuring school education into a 5+3+3+4 structure, with the last stage, comprising Classes 9 to 12, viewed as a single stage.

Another shift the Policy posits, particularly in the secondary stage, is that students will be empowered through "increased flexibility and choice of subjects to study, particularly in secondary school – including subjects in physical education, the arts and crafts, and vocational skills – so that they can design their own paths of study and life plans. Holistic development and a wide choice of subjects and courses year to year will be the new distinguishing feature of secondary school education. There will be no hard separation among 'curricular', 'extracurricular', or 'co-curricular' subjects, among 'arts', 'humanities', and 'sciences', or between 'vocational' or 'academic' streams. Subjects such as physical education, the arts and crafts, and vocational skills, in addition to science, humanities, and mathematics, will be incorporated throughout the school curriculum, with a consideration for what is interesting and safe at each age" (GoI 2020, Para 4.9)

Further, "Each of the four stages of school education, in accordance with what may be possible in different regions, may consider moving towards a semester or any other system that allows the inclusion of shorter modules, or courses that are taught on alternate days, in order to allow an exposure to more subjects and enable greater flexibility. States may look into innovative methods to achieve these aims of greater flexibility and exposure to and enjoyment of

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a wider range of subjects, including across the arts, sciences, humanities, languages, sports, and vocational subjects" (GoI 2020, Para 4.10)

While we have to wait for the National Curriculum Framework for School Education (NCFSE) 2021 to be developed by NCERT to understand how these details will be operationalised, this paper attempts to imagine how these provisions will be actualised in the secondary stage.

Imagining the secondary stage

This section attempts to elaborate on certain key aspects of the secondary stage, based on the Policy but making some assumptions, before proposing a framework to operationalise the secondary stage.

Operationalising flexibility and choice

The underlying rationale of the Policy related to student flexibility and choice is that each student must get the opportunity to experience a variety of subjects and participate in a variety of learning experiences so that their later choices related to study and career are informed and personal, as opposed to being driven by what is socially popular or by their parents' aspirations.

In a sense, the Policy allows for each student to take charge of their learning and create their own curriculum within the larger framework of the school curriculum. To this end, the Policy gives equal status to all subjects and emphasises that the hard barriers between science, arts, humanities and vocational streams, and between curricular and the so-called co-/extra-curricular areas must be removed.

At the same time, the Policy speaks of 'essential subjects, skills and capacities', while catering for the 'large amount of flexibility in choosing their individual curricula'.The operationalisation of flexibility and choice extends to when to take Board examinations and what level to take them at. While there are several policy actions related to assessment reforms, one that indicates additional flexibility and choice is offering assessments in all subjects at two levels – standard and higher – beginning with mathematics. (GoI 2020, Para 4.38)

It is important to consider the implications for a framework that operationalises this flexibility and choice. First, there has to be some method for enabling these, since choice cannot be completely random; certain essential components must circumscribe this framework (as also indicated by the 'essentials' mentioned in the Policy). Second, the flexibility and choice must extend across all subjects – it cannot be seen as applicable only to 'electives'. In fact, the concept of electives, in some sense, contradicts the conception of the Policy. An elective is optional, not compulsory – it is something additional to the compulsory subjects. However, who is to determine which subject is essential? If a student is passionate about music, would that be an essential subject or an elective for that student?

At this point, it is also important to consider that the content of subjects is not an end in itself. It is acquisition of the associated competencies that is the objective of learning. With this as an underlying principle, it does not matter what subject one is studying as long as at the end of the stipulated time period, the desired competencies have been attained. This principle also enables the shift from the present stress of rote learning to the 'real understanding' referred to in the Policy as well as the ability of 'learning how to learn' (GoI 2020, Para 4.4). For example, if a desired competency is developing a scientific attitude, a variety of subject areas can help the student attain this competency, automatically enabling choice.

Competency-based learning and education

An implication of making the shift from 'learning content' to 'developing capacities associated with each subject' is that competencies will form the core of teaching-learning. The Policy recognises this and indicates competency-based learning and

education as the need of the hour (GoI 2020, Paras 4.6, 4.34). It assigns the responsibility for developing standards to a new institute that is to be set up – the Performance Assessment, Review and Analysis of Knowledge for Holistic Development (PARAKH) (GoI 2020, Para 4.41). These standards are expected to indicate the attainment of knowledge, skills and values associated with each developmental stage for each subject, expressed as competencies. Thus, each standard must be obtained, through its associated competencies. This, in turn, would imply that each student must attain these standards at the end of a given period, while allowing them flexibility and choice to attain the associated competencies at their own pace.

For example, if one of the standards for geometry for Classes 9-12 is *specify locations and describe spatial relationships using coordinate geometry and other representational systems*, associated competencies are: *(i) use Cartesian coordinates and other coordinate systems, such as navigational, polar, or spherical systems, to analyse geometric situations; and (ii) investigate conjectures and solve problems involving two- and three-dimensional objects represented with Cartesian coordinates* (NCTM, 2000). Similarly, if the standard associated with wave characteristics for Classes 9-12 is that students must know that *waves (mechanical and electromagnetic) are described by their wavelength, amplitude, frequency, and speed*, then associated competencies are that students must *(i) describe specific mechanical waves (for example, on a demonstration spring, on the ocean) in terms of wavelength, amplitude, frequency, and speed; (ii) identify everyday examples of transverse and compression (longitudinal) waves; and (iii) compare and contrast transverse and compression (longitudinal) waves in terms of wavelength, amplitude, and frequency* (Michigan Department of Education, 2015). A student would be required to attain the standards by the end of the secondary stage. This would imply a student could choose to study courses that would help acquire these standards at any point during the secondary stage. While assuring the progression of concept development, the student would not have to necessarily study a course at a fixed time. For example, the student could choose to do more mathematics courses before physics; or could explore languages towards the end of the stage while focussing on say music in the earlier stage. Of course, this would require a great deal of interaction between the student and teachers or counsellors, to ensure appropriate progression of conceptual development while ensuring that essential areas are covered.

Hence, the standards and associated competencies must make clear the expectations from learners across Class 9-12. They must also help identify prerequisites related to prior knowledge. Hence, standards should be expressed in terms of a continuum, each building on the previous one and becoming increasingly more complex.

While these examples are rooted in the subject, it is critical that standards include all domains of learning. Thus, *generate new questions that can be investigated in the laboratory or field; distinguish between scientific explanations that are regarded as current scientific consensus and the emerging questions that active researchers investigate;* and *evaluate the future career and occupational prospects of science fields* are equally critical (Michigan Department of Education, 2015).

At the same time, it should not be mandatory that all these competencies are assessed in the 'traditional' manner – the danger of tailoring teaching to what can be tested traditionally is well known to all. Hence, competencies that are not directly observable (for example, from the affective domain or non-content related competencies from the cognitive domain) must be given equal importance. This can be enabled through the holistic 360-degree multidimensional progress card that will include a range of competencies, some of

which can be assessed by peers, by self, and through activities that are different from the traditional paper-pencil format (GoI 2020, Para 4.35). With this approach, it can be assured that all competencies are of equal importance, and those that are rooted in the content or can be assessed through paper and pencil are not given priority.

Enabling flexibility and choice

While a great deal of effort will be required to both imagine and to enable transition to the kind of offerings available to students in the secondary stage, it may be useful to identify some key elements the stage must have.

The first aspect that must be considered is that the secondary stage from Classes 9-12 is to be treated as a single stage. The implication is that a credit-based system must be considered, wherein students are required to complete a certain number of credits by the end of the secondary stage. Each course will be assigned credits, and the total number of credits to be acquired by the end of the stage will be specified. Given that certain subjects are essential, (GoI 2020, Paras 4.23 to 4.29) the requisite number of credits would be assigned to these, and all students will be required to definitely attain these credits by the end of the secondary stage. In addition to these, students would have to acquire a minimum number of credits across other subjects – more details are available in the next sub-section.

Even within the essential subjects, students would have the option of studying the subject at two levels, starting with mathematics but extending to all subjects eventually (GoI 2020, Para 4.38). However, one thing must be clear – all students must be assessed for the purpose of certification (through Board examinations) on the curriculum they have studied. Thus, in alignment with other Boards, students should be assessed on the core curriculum that all students must study, or be given the option to study an advanced/enhanced/supplemental – the name can vary – curriculum. The credits each carry will vary, and the school leaving certificate will indicate the accumulated credits for each subject.

At this point, it is important to reiterate that there must be certain prerequisites for a student to choose a subject. For example, given the close connect between mathematics and physics, it would not make sense for a student to opt for physics without studying mathematics. Also, to study a subject, students must have been exposed to the fundamentals in earlier years. This aligns with the Policy action requiring exposure to a large number of subjects throughout schooling (GoI 2020, Para 4.10).

Framework to bring it all together

Based on the above discussion, the following key features will characterise this imagined secondary stage.

1. Comprehensive standards for each subject, including vocational subjects, arts, physical education, etc. that indicate competencies in the cognitive, psychomotor and affective domains.
2. Categories of subjects from which all students must choose. As opposed to streams, these categories will include all areas of study in the curriculum, thus ensuring that all students get exposure to some courses in each area. Thus, students would have to choose courses from vocational, mathematics, science, language, arts, humanities, social science or any other category that may emerge.
3. Credits will be assigned to courses, with each student required to attain a minimum number of credits in each area of study to obtain certification. These credits have to be completed by the end of the secondary stage.
4. Since it is unrealistic for schools to offer a very large number of courses, students can opt to take courses that are not offered in their school through private means or through NIOS, etc. Organisations/institutes like the National Science Center, Central and State Museums, Kala Akademis, National Book Trust, etc. could also develop courses for students

with appropriate credit structures. The Boards would have to cater for private students or count credits taken through an organisation/institute other than the school.

5. Students can opt for the core or advanced (or any other suitable word) in each of the subjects. However, there must be a minimum number of courses that they must take for the advanced level in subjects of their choice (these must include vocational courses and could range from mathematics, languages, sciences, etc. to arts, music, dance, physical education, etc.).

It is important to point out that this change will take time. Even after NCERT brings out the NCFSE 2021, there are quite a few challenges ahead.

Challenges

The transition is not likely to be easy. First of all, a cultural shift is needed. This can be enabled though appropriate dissemination of the importance of choice and flexibility, and for young people to be exposed to a variety of subjects. In an environment where the sports and 'co-curricular' periods are generally used for 'extra classes', stressing the importance of all subjects and convincing teachers and parents of the relevance of each subject will be the first challenge. Sharing the standards with all stakeholders in a manner that can be easily understood by laypersons, holding events in schools (particularly in rural and remote areas) would be useful. Improving the status of non-science and vocational subjects through expanding their ambit and indicating viable career choices based on their study must be done through interactions with parents and students, having eminent persons speak about these on social and mass media, and through guidance and counselling would be helpful in this aspect.

The next challenge is getting sufficient number of qualified teachers in a scenario where we are already faced with a shortage of teachers in science, mathematics, language, geography and vocational subjects. Added to this, are the varying service conditions of teachers within the same school, teaching the same classes as a result of teachers on contract or other forms of employment. While the Policy mentions master instructors, eminent persons or experts drawn from the community (GoI 2020, Para 5.60), they are meant to teach 'traditional local arts, vocational crafts, entrepreneurship, agriculture, or any other subject where local expertise exists, to benefit students and help preserve and promote local knowledge and professions'. Further, the Policy clarifies that they will undergo short courses before they start teaching (GoI 2020, Para 5.25). The Policy also emphasises the need for teachers to have quality service conditions, necessary learning infrastructure and resources, along with suitable processes for performance management (GoI 2020, Paras 5.8-5.14). Hence, investment in teachers as well as in their professional development are key to the transition. This becomes even more important when one considers the issues that exist related to equity and quality due to either teacher vacancies or non-availability of sufficient teachers across subjects, particularly in schools in remote and disadvantaged geographies. While school clusters/complexes are proposed as a means to address this aspect, the culture of collaboration and sharing will have to be built and nurtured by school leaders and education functionaries. This would require a shift in the leadership culture that prevails currently – due capacity building will be needed in addition to extensive guidelines that are localised to each context. Building capacity of the community, particularly the school (complex) management committees will be key in making this shift. The institutional development plans must also reflect these transitions.

To simplify and make explicit the changes, Boards will have to re-align themselves and support affiliated schools to make the transition. This will require

reflection and communication across Boards to ensure equivalence. While standards will help make this possible, caution related to narrow interpretations of these standards and the tendency to restrict textbooks and teaching to those that are easily assessed must be placed. This would require intensive handholding across schools, and frequent interaction.

Conclusion

The kernel of some of these practices already exists across Boards. For example, the Central Board of Secondary Education (CBSE) offers a range of subjects and has a provision for candidates who have opted to study privately to take examinations in subjects of their choice. The International General Certificate of Secondary Education(IGCSE) offers a number of subjects categorised as 'groups', with students having the choice to take a minimum or a maximum number of subjects from within these groups.

Hence, the change is possible. What we have to plan for is changes in phases, while supporting all stakeholders and providing ample opportunities for interaction and reflection. Close inquiry into how implementation is progressing, best practices that are emerging and flagging challenges will be key. Above all, time and patience will be required for the greater good of our children.

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Local in Education Policy Discourse in India

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Abstract

This article looks at how local, as a concept, relates to education in the framework of National Education Policy (NEP) 2020. To examine this, the paper is divided into five sections. It focusses on the urge for 'local' as an aesthetic. It provides a historical overview of the idea of local in the context of and in relation to education from colonial to contemporary times with attention to various policies, reports and 'innovative' programmes. It highlights how contemporary debates have been influenced by global players and ideologies. The paper explains how local as a leitmotif operates in NEP 2020 and offers suggestions to give space to it in policy implementation.

Introduction

The idea of local is a deliberate and political construct. As an idea, it has been employed at times as a strategy and at others as an approach and framework to refigure the relationship of education with the community in multiple arenas. This ranges from contextualisation and relevance of the curriculum and assessment, teacher recruitment and rootedness of the teachers in the community to address social distance between teachers and students and to ensure accountability.

The Government of India's (GoI) recent National Education Policy (NEP) 2020 lays out certain aspirations, poses a certain set of questions, articulates a particular conception of the problems, and sets forth a vision to address these goals. The relationship between the local and education has been the subject of long standing debates and concerns in the Indian education policy discourse. By making several references to the local, the NEP rearticulates, reframes and constructs new dimensions to this discussion.

This paper is concerned with understanding the idea of local and its relationship with education in NEP 2020 in a historical frame. To examine this, the paper is divided into five sections. The first section dwells on the idea of and the urge for 'local'. The second section provides a historical overview of the idea of local, decentralisation and education from colonial India till the National Policy of Education (NPE) 1986. The third section examines how the idea of local is configured in the context of several programme initiatives in education in India since the 1980s to the turn of the 20th century. In particular, it focusses on the Shiksha Karmi, Lok Jumbish, DPEP and SSA projects and programmes. It also draws attention to how the global actors and discourses have participated in framing the debate in the recent past. The fourth section is woven around the idea of local in NEP 2020. The fifth section offers certain

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suggestions to give shape to the idea of local in policy implementation.

The idea of local

The idea of local and the multiple meanings associated with it are closely tied to the history of modernity with its (post) colonial entanglements (Chatterjee, 1997). Before we begin unravelling these meanings, it may be useful to remind ourselves of two other concepts, the national and the global, in relation to which the local gets invoked and discussed. These two concepts also bear imprints of modernity and its history.

Modernity can be understood with reference to its three dimensions – political, economic and cultural. Emergence of the nation-state and democracy in modern Europe from the 17th century onwards were based on ideas of common culture and popular sovereignty. The idea of popular sovereignty implies that people are the source of authority of the government and the government has to be based on their consent. Industrialisation and capitalism are the economic facets of modernity. As global systems of production, relations and distribution, they came to dominate ideas and aspirations about development and progress. The rational, thinking and autonomous individual with capacity to refashion one's own life and social institutions in the light of individual and collective reflections constituted the universalist cultural dimensions of modernity (Kaviraj, 2000).

In comparison to the political universalism of the modern nation-state, the local simultaneously represents three things. First, it denotes another layer of the modern nation-state – its decentralised avatar. It promises participation, representation and voice in the exercise of democracy. Besides this, it is supposed to act as a training ground for both citizens and future leaders in governance at the national level. Second, in the colonial discourse, the confinement of native's loyalty to one's caste, religion and village, the local and not the nation, marked the difference between the colonised and the coloniser. Anti-colonial struggle aspired for and led to a national community and an independent nation-state in India. Confining oneself to the local denoted an inability to rise above the parochial and to embrace the nation. But to be a worthy member of this incipient national community, the native Indian needed to improve themselves (Srivastava, 1998). Third, in contrast to universalism, the local represented particularism, specificity and rootedness. In the post-structural framework, the local came to represent the fragment, which stood on its own and was neither a unit nor just a representation of the nation.

Several other meanings of the 'local' can be gleaned from its everyday use. It denotes familiarity, knowledge, insider knowledge about problems, issues, people, networks, language, lingo and myths and beliefs. Being local suggests rootedness, a place of belonging and growing up, not distance but being an insider and embedded in the community. With this locality, one can speak to and resonate with others, can draw on social connections and use it to assert power. Being local, one is expected to be sensitive to the nuances of culture. In forms of governance, it has been deployed for decentralisation. In its negative connotations, the local would refer to being parochial, particularistic, narrow, restricted to a particular location and absence of a wider framework, affiliations and commitments. The 'local' draws on dual meanings. It is a 'place', a geographical location and simultaneously connotes caste and class. Often geography is privileged over the caste and class locations to constitute and convey a distinct meaning. Identity locations based on spatial mask the social locations based on caste and class.

Local, decentralisation and education in history

Colonial India

There are two possible frames to discuss how the 'local' surfaced in the context of

education in colonial India. The first frame focuses on how the colonial state and Indians made meaning of and responded to the 'local'. The colonial state's response can be classified as pertaining to decentralisation (both financial and political), neglect of mass education, recognition and sensitivity to local needs, confabulation of the 'local' and 'people' to mean Indians and intervention in the decisions of the local educational bodies.

The Indian response focussed on using the political and financial decentralisation to enable their participation and control in decision making, expansion of educational provisions, indifference to local bodies, and use of local bodies to assert and counter entrenched social domination and stake claim over public resources. We discuss these multiple dimensions with reference to specific historical decisions and developments.

The first dimension pertains to decentralisation with implications for governance and fiscal control. The three levels of the colonial state, namely central, provincial and local, were involved in education in different ways. Chaudhary (2010, pp. 187-8) gradually traces the shift in responsibility of education from the government at the centre to the provincial and municipal to Indian hands. Until the mid-19th century, the central government had absolute financial control over the provision of education. Decentralisation began from the 1870s first to the provincial governments and in the 1880s to the rural district and urban municipal boards. A decentralised structure shared responsibilities across different levels of education. The responsibility of primary education lay with the local boards of education, and the control and supervision of secondary and collegiate education were in the hands of the provincial government.

With the system of dyarchy, introduced in 1919, Indian members were elected to the provincial legislatures and education became a transferred subject under their control. These members controlled land revenue, etc. and used it to increase the expenditure on education. The Government of India Act 1935 introduced provincial autonomy and concomitantly increased fiscal independence and greater investments in education.

The second dimension relates to the impact of colonial policies on the 'local'. This reflected itself in the idea of difference between the colonised and the coloniser. While in England, from the 1870s, various acts introduced compulsory education but in India the high rhetoric about the need and effects of education was not matched by resources. Paucity of funds was used to justify private funding and grant-in-aid system. Transferring responsibility of primary education to the local bodies who had very limited resources at their disposal had an adverse effect on mass education in India (Jain, 2018). Here, the 'local' came to bear responsibility for the neglect by the national government.

The third dimension draws attention to the fractures within the local, attempts to entrench social power or counter it and the ambiguous colonial policy about education of the depressed classes. The colonial government committed itself to 'mass education within a framework of equality and individual rights before law'. The Hunter Commission (1883) recognised that owing to local 'prejudice' not everybody, particularly the low castes, could access education. The commission recognised that the lower caste groups paid local cesses, therefore they had a stake and could 'claim some return for their contributions' (1883, pp. 513-7). However, in practice, the depressed classes were denied education through denial of admission and entry, physical violence, threats of social boycott (Constable, 2000, Nambissan, 2020, 128, Satyanarayana, 2002, pp. 74-75).

Constable (2000) in his historically rich narrative points out how the dominant caste groups having representation in local boards and municipal bodies stifled access of depressed classes to education. Depressed classes showed their own agency in countering such moves and asserted their right to and access to education. Beginning with the Satyashodhak movement by Phule in the

late 19th century, the anti-caste movements did not remain local and increasingly took regional and national forms during the 1920s and 1930s. Several questions can be raised such as, who is the local, who can stake a claim over public resources, what can be the nature and justification of these claims.

Independent India

In this section, we will look at four specific policy texts and programmes where the idea of local figures prominently to understand distinct meanings, continuities and shifts in the discourse about both the idea and relationship of the local and education in Independent India. Four key policy texts and programmes discussed in this section are Mudaliar Commission (1952-53), Kothari Commission (1964-66), National Policy on Education (1986, modified 1992) and the District Primary Education Programme (1994).

The idea of local figures in at least three ways in the Mudaliar Commission (GOI 1953). Of these three, two references were in relation to 'community'. One, the school itself is envisioned as community and second, the community refers to the local community outside the school with which school is to forge ties (pp. 21). In this latter conception, the local and community are both a geographical and social entity and are largely rural. By being embedded and rooted in it, the secondary school was expected to 'initiate the students into the many-sided art of living in a community', train students to assume 'leadership in their own social groups of community or locality' and 'enrich rural life' by creating a 'better social and cultural atmosphere' (pp. 24-25, 29, 39). The third reference to the local in the report pertains to the mother tongue, which 'may or may not be regional or central language' (pp. 59).

In the Kothari Commission (NCERT 1970) the idea of local figures in seven distinct ways. First, the 'local, regional, linguistic, religious and other sectional or parochial loyalties' are a threat to the nation (pp. 14). Second, it is 'traditions of the people', and when education is not rooted in these traditions, it leads to 'alienation' of the educated 'from their own culture' (pp. 14). Third, local is equated with diversity in a vast country like India justifying 'flexibility in the educational structure' (pp. 45). Fourth, it is the community outside school, which can use school in 'innumerable' ways throughout the year and the local community, in turn, can cooperate to improve the facilities in the school (pp. 61, 474). Fifth, along with certain minimum national parameters about service conditions and salary to teachers, local context is to permit 'variable pay' meaning additional remuneration to redress disparities and 'equalise opportunities between districts through a grant-in-aid' (pp. 70, 88, 315). Sixth, with increasing emphasis on community development, 'good relations with the local community' are expected to pave the way for 'improvement of village', contributing to the welfare of old, ailing and young (pp. 374). Seventh, school education is 'essentially a local-state partnership'. The local is conceived as another state structure to constitute district school boards (pp. 477).

NPE 1986 and its modified version in 1992 laid considerable emphasis on education as an agent of social change to counter 'accumulated distortions of the past' and achieve 'empowerment of women'. It recommended locating school buildings and balwadis 'in such a way as to facilitate full participation of the Scheduled Castes' (Government of India 1992, pp. 8-9). Taking note of the distinct 'social-cultural milieu of the Scheduled Tribes' and their spoken languages, it recommended development of curriculum and instruction material in 'tribal languages at initial stages'. In these articulations, local figures with attention to social marginalisation and diversity.

Local in 'innovative' programmes in education

For various reasons, state's investments in primary education continued to be

low in India. With increasing recognition and demand for universalising access to education, the idea of recruiting unemployed local youth as school teachers increasingly gained widespread policy attention. In this section, we discuss the historical antecedents of the 'innovative' programmes and practices, by both state and non-state players from the 1970s onwards, to give shape to this idea. We also examine the multiple ways in which the idea of local was employed to justify pan-India policy shifts operationalised at the local level.

In the latter part of the 1970s, centrally sponsored non-formal education schemes (like the Sahaj Shiksha Programme) employed teachers from the community for the first time. This teacher was often associated with the part time education programmes. The rationale of such part-time programmes was drawn from children who at the time, were not available for full time studies, and therefore, joined schools only for a smaller duration (less than three hours) than the regular school. Part-time teachers were employed for such schools and the teachers were paid about Rs 100 a month, which was later revised to Rs 200. Teacher training qualifications were not a prerequisite for appointment. Further, there were no provisions for intensive full time training. Instead a short duration induction training was imparted. This model underwent a significant change in the 1980s. Now teachers began to be appointed on a contractual basis at a lower salary in the regular schools without any prerequisite of teacher qualifications. This model, which became widespread, came to be known as the para-teacher model. It was adopted and known by various local names in different states[1].

1 This was seen in Gujarat (Vidya Sahayaks of the Vidya Upasak Yojana), Maharashtra (Shikshan Sevak), Andhra Pradesh (Vidya Volunteer Scheme), Rajasthan - DPEP (Shiksha Swayam Sevi Scheme) and Uttar Pradesh (Guru Mitra Scheme), Himachal Pradesh (Vidya Sahayak Yojana) and Maharashtra (Shikshan Sevak Scheme), etc.

The para-teacher was appointed in regular primary schools initially under the volunteer teachers' scheme of the state of Himachal Pradesh in 1984. The norms of school warranted at least two teachers to be appointed in every school. Most often, the second teacher appointed in a single teacher school came to be a para teacher. This kind of appointment later spread to other states. In Madhya Pradesh and Rajasthan, the state stopped most recruitment of regular teachers and instead appointed teachers on a contractual basis, which was done by the Block and District panchayats.

In the 1980s, Rajasthan was the first state to hire teachers on contract. The Shiksha Karmi Project (SKP) began in the Silora Block by the Rajasthan Government. The regular school teacher was substituted by a team of two local 'Shiksha Karmis'. The Shiksha Karmi project was recognised as an innovation to reduce teacher absenteeism, ensure teacher availability in remote areas, poor enrolment with special focus on girls, high dropout rate, and poor local relevance of the curriculum (Dayaram, n.d.). The government led project was supported initially by Swedish funds (Swedish International Development Agency, SIDA) and after Sweden's withdrawal, the British Development Aid agency DFID supported the project. Norms for appointment of shiksha karmis were lax. The eligibility conditions were eighth class pass or above boys/ men and fifth class pass girls/women. In SKP, the teacher was a voluntary worker with close ties to the community. The community was involved in the evaluation of the Shiksha Karmis work with the help of the Village Education Committee (VEC). Following the success of the project, the contract teacher or the local Shikha Karmi became the norm in Rajasthan and spread to other states. In states like Madhya Pradesh, regular teachers began to disappear. In these cases, the accountability of the state to primary education was diluted and 'decentralised' as the Janpad Panchayat or Zila Parishad appointed teachers. The SKP has been

able to "validate its key hypothesis that demand and a hunger for learning exists in all segments of society and that ordinary persons, appropriately selected, trained and supported can function effectively as teachers and agents for social change" (Ramachandran, 2000, pp. 5).

The Lok Jumbish project (LJP), also initiated in Rajasthan in the early 1990s, was based on a unique fund sharing model between an international donor (SIDA), the central and the state government. The focus and key strength of the project was the empowerment of local representatives, especially women. The project invested in formation and capacity building of the Village Education Committees (VECs). LJP brought together different government agencies, teachers, NGOs, elected representatives and the local people as allies and partners, as the core group working for achieving the goals of primary education. For the first time, partnerships with local communities were forged, multiple levels of local leadership were recognised and flexible participatory management with a concerted focus on processes was emphasised. Achievement of universal primary education was driven in a mission mode.

Jomtien conference on Education for All (1990) introduced and reconfigured a new set of ideas in the inter/national educational discourse and practice. In India, the District Primary Education Programme (DPEP) was initiated in 1994 by the Ministry of Human Resource Development (MHRD), Government of India as an umbrella scheme. It received funds from foreign agencies and disbursed them for primary education (Sarangpani and Vasavi, 2003). The DPEP aimed to provide primary education in 42 districts in seven states with low literacy rates, which later expanded to cover all elementary classes in 242 districts. The DPEP adopted an area specific approach where the local district is the fundamental unit for planning and strategy. The localisation of the efforts aimed to be responsive and conscious to local contexts and elicit community support. The DPEP aimed to fill gaps in primary education, by improving enrolment and reducing dropout of children from marginalised groups, particularly the scheduled castes and tribes and girls. In 2001, the programme goals were revisited and named Sarva Shiksha Abhiyan, which retained most of the DPEP goals.

The idea of local was used in different ways to justify the widespread adoption of this model from the 1980s onwards. First, local was equated with the local rural community. Major role was assigned to this community in appointments, accountability and remuneration of the para teachers in the schools. This was presented as a corrective measure of isolation of the school from the community and its participation in the running and management of schools. The legal dimensions of such appointments were questioned by the judiciary as they were made by authorities 'not competent to appoint', on honorarium basis, under non-statutory schemes and a 'stop-gap arrangement'[2].

Second, the local community was conceived as not just a community located in a geographic space but also socially differentiated. With increasing focus on the education of hitherto marginalised and excluded communities in both national and international education policy discourse, the local teacher, albeit untrained, was conceptualised as more invested in the community's development, more accountable to the local community and less distant. This was seen all the more significant for Dalit and Tribal children. The underlying assumptions of these projects was that "barefoot teachers belonging to the local community, once intensively trained and enjoying local community support can overcome the lack of formal educational qualification" (Vimala Ramachandran, 2000, pp. 7). The apologists for the para-teachers scheme argued that this will lead to reduced teacher absenteeism and more commitment on the part of the

2 See Richhpal Singh and Ors. vs State Of Rajasthan on 4 January, 2005 and West Bengal Primary Organiser ... vs The State Of West Bengal And Ors. on 7 July, 2006

teachers. The teachers in Ashramshalas, tribal schools, Education Guarantee Centre (EGCs) were invariably drawn from the community[3].

Third, local also became the vehicle to introduce political and administrative decentralisation. With the 73rd Amendment to the Constitution, the power to appoint teachers came to be vested in the Gram Panchayat. In a furtherance of decentralisation, most often it became the responsibility of the parents to find teachers for their own children. The process of recruitment of the teachers in the local schools in small numbers through the gram panchayat and the village education committees was expected to be faster than the lethargic recruitment process of large numbers of teachers undertaken by state bodies.

Fourth, this emphasis on local was seen as an egress by the state governments to address large numbers of teacher vacancies in regular schools. This accumulated shortfall had resulted in high and adverse pupil-teacher ratio (PTR) with the retirement of regular teachers and increasing enrolment.

Fifth, the local systems developed as a consequence of these projects were parallel to the mainstream structures. Issues of quality, parity and equity have been the concerns that harangue the discourse on the parallel local systems.

It is important to recognise the underpinning political economy in the deployment of local for these policy shifts. First, in the context of increasing fiscal constraints and unwillingness of the states to increase expenditure on education, contractual appointment of teachers from the local community and by local bodies promised to reduce the financial burden on the government. Kingdon (2000) has argued that for the cost of a regular teacher's salary more than five para teachers could be appointed. This precedent of state hiring para-teachers under different programmes was used as a justification by proponents to employ contractual teachers in the Public Private Partnership (PPP) mode to meet the PTR requirements of the Right to Education (RTE) Act 2009 (Jain and Dholakia 2009: 41, 2010: 80). Such recommendations mark continuity of under investment by the state in the training of teachers and keep teacher education in India weak and dependent on private players.

Second, in the neoliberal ethos, there was increasing emphasis on cutting down state expenditure, downsizing the state, promoting market and privatisation and adopting the market principles in recruitment and running of the public institutions (Jain and Saxena, 2010). Accordingly, multilateral bodies like the World Bank (WB) had also expressed concern about providing higher wages to state employees including teachers (Jain, 2004, pp. 36-37). In comparison to 39 other Asian countries where teachers' salaries were 1.7 to 1 with reference to per capita GDP, in India the ratio was 5 to 1 (World Bank 2003: 36).

Third, in the post-Jomtien discourse, local, community participation and decentralisation had emerged as buzzwords to enlist new participants in provisioning of education with 'flexibility'. Set in the backdrop of the World Bank's structural adjustment programme (SAP), the local actors and NGOs, the civil society were to fill the void created by increasing state withdrawal from several social sectors such as health and education. With the state conceding its failure to provide employment, growing 'informalisation' of the formal sector and WB increasingly funding self-employment and income-generation activities run by NGOs, the idea of recruiting local youth as teachers

3 Similar appointments of teachers drawn from the local community were deployed in small full-time schools in remote habitations. These were: Alternative schools (Assam and Orissa), Multigrade centres (Kerala), Education Guarantee Scheme (Madhya Pradesh and Uttar Pradesh), Vasti Shala (Maharashtra), Shishu Shiksha Karmasuchi (West Bengal) and Rajeev Gandhi Swaran Jayanti Pathshala (Rajasthan).

at low salaries provided a political gloss to these significant departures (Dayaram, n.d., Jain 2004, Kumar, Priyam and Saxena 2001, Prapanna 1998). This focus on the local community's involvement in running rural primary schools overlooked both economic pauperisation of the weaker sections of the community and the unequal power and resource division within it.

Fourth, with the contractual status of para-teachers and a local body based appointment, the possibilities of a state-wide and national collective resistance by teachers to the reform process could be scuttled (Govinda and Josephine 2005). In the subsequent decades, the state has been drawn into several court battles with demands for regularisation and welfare benefits, and has had to bow down to these demands.

Fifth, the contractual nature of appointment with no increments or medical, retirement or benefits was a significant shift from the Kothari Commission's recommendations for parity in service conditions and minimum pay. It formalised the informalisation of the teacher's labour and legitimised their exploitation in the name of local. The fact that it coincided with increasing demand for education by the poor and marginalised amidst the rising global assertions and funding for education for all and introduced such untrained teachers in public provisioning of education is not so benign. It is both ironical and contradictory in terms of commitment to equality and quality in/of education.

The local in NEP 2020

Recently, after a gap of 34 years and through several kinds of consultations, committee reports and drafts, the Government of India has unveiled the NEP 2020 (GoI, 2020). The local appears as a leitmotif in the new education policy, finding a total of 72 mentions. It figures in multiple ways, marking both continuities and shifts with the above discussed policies, practices and discourse.

We are analysing various references to the local in the NEP 2020 in three ways. First, we notice the differential emphasis as evident in the number of references to each idea about the local. Second, we look at what these ideas suggest individually and collectively. Third, we analyse the continuities and ruptures with the earlier policy discourses and practices.

The four significant moments in which the local appears are: as a geographical location with focus on decentralisation; with reference to local languages in the context of school; as emphasis on epistemologies through a recognition of local arts and crafts; and as community[4].

First, local emerges as a geographical location, as the site/area where schools, students and teachers are located. It finds repeated mention in the context of teacher recruitment, where teachers should be offered 'preferential employment in their local areas' (20). The local is the site for proposed shorter teacher education programmes, which must be responsive and flexible to cater to local needs. It also appears as the field-site of practicum training of B.Ed. programmes. It is also used as a site for prospective employment and a setting for vocational and adult education.

The policy's fundamental principles urge for 'respect for the local context in all curriculum, pedagogy, and policy' (5). The local is diverse and varied on 'account of culture, geography, & demographics' and 'issues facing local communities' (11). Both government and non-government organisations are directed to be alert to ground realities at the local level while setting up schools. The local, appears as the site where specific needs and issues can be gleaned for varied purposes. The data gathered from such exercises in

4 The local languages are also highlighted in the higher education institutions (HEIs), which is a continuity of school education. However, given the limited scope of this article, we focus only on the local languages in the context of school education.

context-specific barriers, skilling needs, gap analysis, mapping of local opportunities and the flexibility needed by each school in its decision-making about standard setting and regulation places the local at the fulcrum of planning and implementation in all areas related to education. The geographical location is privileged to place, assess, arrive at felt local needs and plan at the local level.

Workshops, opportunities for faculty capacity building and improvement are envisaged to be organised at local, regional, state, national, and international levels. The policy places the local School Complex Management Committees as the hub of 'improved governance, monitoring, oversight, innovations, and initiatives by local stakeholders' (29). At the local level, these Committees help operationalise a 'light but tight' regulatory framework to ensure integrity, transparency, and resource efficiency of the educational system' (5). The school complexes at the local level are also proposed to pool resources, build capacities, invigorate through this coming together of communities of 'schools, school leaders, teachers, students, supporting staff, parents, and local citizens' (29).

Second, the idea of local significantly cinches to the linguistic dimensions of schooling, finding expression as 'local' language with 37 mentions. The multiple references to languages in the policy document differentiate between home language, mother tongue, local and regional language. NEP 2020 recognises that 'home language is usually the same language as the mother tongue or that which is spoken by local communities' (13). It also includes 'local sign languages' and the development of a web-based platform/portal/wiki to document and preserve 'all Indian languages and their associated rich local arts and culture' (55). Local language has been used interchangeably as regional language or mother tongue.

The focus on local language finds expression in the appointment of teachers who are 'familiar with local languages' and incentivises their deployment in 'the areas with high dropout rates' (10). Selection of teachers will involve assessment about their 'comfort and proficiency in teaching in the local language' (20). Consequently, at least a few teachers 'in every school/ school complex' should have the ability to 'converse with students in the local language and other prevalent home languages' (20). This expectation about knowledge of local language(s) is not limited to teachers in the public schools but includes teachers in the private schools within its ambit. As far as possible, the textbooks and reading material are to be translated 'in all local and Indian languages' (9). To promote multilingualism, NEP 2020 proposes 'early implementation of the three-language formula' and commits to 'teaching in the home/local language wherever possible' (54). However, the use of punctuation (/) and repeated use of 'wherever possible' points to both challenges involved and the need of reaffirming the state's own commitment. 'Local language' is used interchangeably with mother tongue, regional, local, state, scheduled language, state language, Indian languages, and major Indian languages in the NEP. Local language becomes identical with regional or official state languages as defined in the Constitution's Eighth Schedule. The local language is aligned to the 1956 three-language formula and departs from the 2009 Right to Education Act, which reaffirmed the usage of mother tongue till Class 5 as far as possible.

Third, the local is a repertoire of knowledge, 'strongly rooted' in national and local 'ethos in terms of culture, traditions, heritage, customs, language, philosophy, geography, ancient and contemporary knowledge, societal and scientific needs, indigenous and traditional ways of learning' (16). From the pre-primary stage, the curricula and pedagogy must draw on folk songs, stories, games, recognise oral traditions where language is the bearer of this intangible cultural heritage.

The NEP puts the national at the core of discipline subject knowledge in textbooks,

with the local 'supplementing' or 'nuanced' it (17). While the local is continuously stressed and restated, it is articulated as a complement to knowledge domains rather than as the core. Local epistemologies are evoked in response to specific requirements, situations, resources, and choices. Thus, the 'local' manifests itself in the form of 'knowledge', curricula, and pedagogies. The policy defines 'Knowledge of India' as 'knowledge from ancient India and its contributions to contemporary India', as well as 'Indian Knowledge Systems' as 'tribal knowledge and indigenous and traditional modes of learning' (16). Local knowledge is held by 'eminent local persons' who are capable of promoting "local professions, knowledge, and skills" in 'local art, music, agriculture, business, sports, carpentry, and other vocational crafts', 'handicrafts', 'electric work, metal work, gardening, and pottery making' (24). Art and craft, as well as entrepreneurship, are key facets of expertise and knowledge that appear complementary to ICT and technology.

Fourth, community appears both as a proxy and as a suffix to the local in the NEP 2020. For the 'development of a strong, vibrant public education system', substantial investment and encouragement to the 'true philanthropic private and community participation' is one of the principles of NEP 2020 (6). Community refigures in the discussions about 'the current learning crisis' as the 'trained volunteers' from the 'local community and beyond' are enlisted by NEP 2020 in the 'mission of attaining universal foundational literacy and numeracy' (9). All the literate members of the community are expected to volunteer for 'one-on-one peer tutoring' to achieve this goal (ibid). Community is also to be involved in the 'nutrition and health of children' and in the community-based interventions for 'gender inclusion' (9, 26). Schools are expected to 'promote social, intellectual, and volunteer activities for the community' through libraries and other means (9, 30). Assessment of the teacher's performance will include their service to the community (22).

This discussion about the local in NEP 2020 marks both continuities and departures from the earlier discourse about local and education. In terms of continuities, there are parallels with the recommendations of the Kothari Commission about school complexes, teacher's involvement in the community and the role of the school in the revitalisation and development of the community. These recommendations draw upon previous concerns about control and involvement of the community as well as school as a modern institution with a pedagogic role beyond its students. The discourse about decentralised planning for the professional preparation and support of teachers, both pre-service and in-service, was mentioned in NPE 1986. How decentralisation can lead to improved governance is an idea reiterated in inter/national policy discourse and programmes since the 1980s and now it conjoins the republican spirit of volunteerism to aid state's efforts in nation-building.

There are certain crucial departures and new alliances at work in NEP 2020. First, the increasing global emphasis on performance, efficiency and accountability of teachers conjoins with the local community in their evaluation. Can human relationships be built on performance evaluation and what other mechanisms may be helpful, is a question worth thinking about. Second, NEP 2020 draws upon the postcolonial critique of western hegemony, distance and alienation of education and curriculum from the culture, knowledge systems and local communities. It equates indigenous with tribal. But along with these critiques, it privileges global discourses about education with focus on learning crisis, accountability, efficiency and performance. We need to examine how these two thrusts sit together, whether there are any contradictions between the epistemologies of the indigenous, tribal and local with the dominant western and global, and are the former supposed to substitute the later or just be an additional appendage to it.

Implementing local in NEP 2020: Some suggestions

To implement NEPs agenda of decentralisation, collation of district-wise disaggregated data and its analysis along several dimensions at the local level will be needed. Any community has ties that bind it together but it also has fissures and fragments. Accordingly, it is imperative that the social composition and educational demographics of each habitation, village, and district are captured. This helps define who represents what, who are residents of local and speakers of its different languages, and therefore, has a stake to participate in the teaching community. The animation of the local in discerning felt needs and field realities helps build into the rationale, perspective and content of the training, curricula and most importantly, attend to marginalised and disadvantaged communities.

This underscores the need to strengthen and promote research at the local level. There is an urgent need for knowledge generated from research to be fed back into the planning process of the school system, with liaison and linkages between universities and schools.

The local has the capacity and wherewithal to articulate the urgency, the need and the scope for reforms in education. This may be a shift from the local simply serving as a programmatic response to the provisions and changes in various government schemes. For instance, the Sarva Shiksha Abhiyan initially forayed into pan-India planning and later adapted to the local communities with innovative programmes[5].

5 Residential bridge course for domestic child labourers in Andhra Pradesh; boat school for fishermen community in Andhra Pradesh (2004); learning centres and residential bridge courses for street and children who participate in productive work in Delhi (SSA Delhi, 2009); special provision for children from migrating communities in Jammu & Kashmir; flexible schools, schools in tents or mobile units, evening schools in Karnataka (2005-06).

Also, several aspects of the policy need attention. For instance, for appointments, the implementation plan needs to define who is the 'local' competent authority with the mandate to make appointments and a clarity of working and service conditions, salaries and benefits and nature of appointments is imperative. We need to arrive at a concerted needs assessment-based 'local' plan for capacity building and attempt to bring parity among teachers already in the system.

Teachers also have a repertoire of knowledge from field experience and practice. Any exercise in needs assessment, planning and preparation of inservice programmes at the local level should include groups of teachers. Peer groups of teachers from the local school complexes must be legitimised as a community of practitioners (Lave and Wenger 1991, Wenger, 2000). This represents a paradigm shift away from hierarchical systems and toward small, creative, and independent groups (Barton & Tusting, 2005). These communities assist in addressing concerns of individual and collective identities coming together for social change, as discussed in the work of Bakhtin, Bourdieu and Vygotksy. In order to serve their members' active engagement with, and orienting to, the outside world, communities of practise emerge and are useful. Both the speech community (based on the socio-linguistic community of speakers) and the community of practice methods are important, and both can be deployed in tandem (Eckert, 2006).

Most initial orientation inservice training tends to be repetitive leading to fatigue, boredom and restiveness. The peer groups can go beyond the initial induction to include real classroom dilemmas and discussions around content and pedagogy and concerns of inclusion. Such recognised and empowered teacher communities can work to revamp service conditions, school culture, revision of curriculum and aligning it to the local, development of instructional materials, research in education, linkages between HEIs, particularly TEIs and ensure that

teachers' capacities to teach are augmented. The communities must become spaces of flourishing and care (Ramachandran, 2020).

Languages live through our stories, riddles, metaphors, melodies, ballads and myths, not dictionaries. Public discussion and performance of local languages preserve the oral traditions and histories. Both (i) the performing arts that serve as a thread linking local languages and local knowledge, and (ii) knowledge and practices about nature and the universe as part of our heritage need to be explicitly acknowledged in the policy implementation.

At the local level, a systematic mapping of the multiplicity of the home language(s) that children bring to the classroom is necessary. An examination of disaggregated data should inform the medium of instruction, availability of resources, printing of textbooks, employment of instructors, and translations. The policy's goal of recognising and empowering local languages must be grounded in a viable pedagogical approach.

The local teacher education plan cannot exist in isolation from the school system. Incorporating the challenges and needs of the school would help the teacher education institutions in becoming more relevant and symbiotic. The TEI and school system must evolve into an integrated and convergent system of academic gains at the local.

Conclusion

The above discussion navigates the local in the historical contexts and helps chart how the spread of education within local communities has informed and shaped the policy over time. The foregoing discussion has helped frame and understand the politics of education in the 'local'. Following the trajectory of the local up to the NEP 2020, the paper dwells and deliberates on the four different dimensions of the local delineated in the policy. The paper has also suggested some ideas about giving shape to the local in the policy.

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National Education Policy 2020 – Imagining Digital Technologies as a Resource to Achieve Educational Aims

*Gurumurthy Kasinathan**

Abstract

The National Education Policy, 2020 (NEP) asserts that education is fundamental for achieving full human potential, and for the development of an equitable and just society. Clearly, digital technologies are impacting our lives in all aspects - social, political, economic. The effectives of such impact in education would need to be seen against the extent to which its use can support in the achievement of educational aims. The NEP rightly visualizes that digital technologies can play a big role in creating, revising, curating, adapting and publishing of curricular resources in multiple languages spoken in the country, to create a rich learning environment in all courses at all levels, including through translation. While the NEP does emphasize the need for digital technologies to support teacher professional development, it sees it largely in terms of building skills of teacher to become 'users'. Yet critical perspectives on technology are most relevant, specially in the context of dangers to the aims of education through privatization and commercialization of education, hence teacher development needs to enable teachers to become creators, visualizers, designers of digital technologies to their contexts, and be restricted to using products developed by business entities. The NEP rightly points to the dangers of implementing unproven digital technologies (which has led to a very large number of failed projects), and recommends a process to screen digital methods. The dangers from the 'new guy' - "artificial intelligence" are not adequately emphasized in the NEP. Uncritical adoption of the latest craze of 'personalized learning' can derail the basic premise of education as social constructivism, and its purpose as social transformation.

The National Education Policy 2020 (NEP) begins with the assertion that education is fundamental for achieving full human potential, and for the development of an equitable and just society, thus emphasising that education must aim at social transformation. Historically, the Indian society has been afflicted by divisions and exploitation, including, on the basis of caste, creed, gender, and region. Reversing this exploitation and offering justice and dignity to hitherto marginalised sections is essential to build a just society. Education should also, as a by-product, enable citizens to acquire productive employment, which the popular imagination perhaps captures as the primary purpose of education. Yet, education is the primary project of society to establish justice and equity in an evolutionary manner. Hence, we need to understand 'quality education' necessarily as 'socially transformative education', which requires the redistribution of power, privilege, and resources. A national policy on education needs to be studied with reference to this ongoing project.

Such socially transformative education has four important components – infrastructure, curricular content, teacher,

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and community participation. The NEP discusses the second and third components in detail. This article will restrict itself to how the NEP explores the role of digital technologies (hereafter 'technologies') in supporting such transformative education.

The NEP asserts that the focus of integration of digital technologies would be to improve teaching-learning and evaluation processes, support teacher professional development, enhance educational access, as well as streamline educational planning and administration. This focus on technology as a resource to address accepted educational aims and priorities is a welcome departure from the usual 'we have technology, what can it do?' (hammer looking for a nail) kind of perspective that has often dominated the 'technology in education' discourse.

Curricular content

Eisner (1991) asserts that teaching and curriculum are the fundamental aspects of education, just as systole and diastole are to a beating heart. A rich, contextual, and diverse curriculum that is both appropriate and adequate is essential for good quality education. The NEP discusses the need and possibilities of such a provision in multiple sections.

The section on Early Childhood Care and Education requires the development of learning materials for early childhood education, while the section on curriculum and pedagogy, calls for the large-scale creation of resources in multiple languages, which are mediums of instruction in schools across the country. The NEP asks that enjoyable and inspirational books should be developed for students, in all Indian languages through translation processes that integrate digital technologies as well, and should be provided in school and local public libraries. Such development should factor in the need to contextualise local needs and provide bilingual textbooks and teaching-learning materials for mathematics and science to enable students to think and speak about these subjects in both languages. It rightly suggests that the widespread provision of books will support the inculcation of reading habits within educational institutions and in communities.

The section on assessment, calls for moving from testing rote-based learning to conceptual understanding. This requires an appropriate design of assessment processes and materials. Assessment materials should not be seen narrowly in terms of tests and closed-ended questions, but more broadly as a rich and varied set of 'quizzes, puzzles, exercises, application-oriented cases'. Though the NEP envisions this as a 'simple' process, it would require high levels of competence among the creators.

Each of these tasks requires vast and varied sets of curricular resources on numerous topics to be made available in all languages and for different learner contexts and levels. The digital technologies can enable this. Resources on a large scale can be developed through programs that engage school and college teachers and teacher educators to collaborate on (digital) networks and use (digital) tools to develop (digital) learning resources that can be easily re-used, adapted/contextualised, curated, shared, and published using digital methods. Complex, multilingual, multi-level, multi-purpose resource creation can be managed through digitally-mediated processes.

Secondly, India is a unique country with many languages. Preserving, protecting, and promoting these languages is essential not only for communicating and learning but also for the cultures of India's diverse communities. The threat to the regional languages of India is real and imminent and can be fundamentally attributed to the proliferation of digital technologies, mainly the Internet. English dominates the Indian Internet and other languages have a marginal presence, which is one reason why its power and prestige increases exponentially compared to other Indian languages. The NEP bemoans that Indian languages have been neglected due to which the country has

lost over 220 languages since Independence. The dominant regional languages that determined the linguistic organisation of the country into states are also under threat of being subordinated. UNESCO has alerted that 197 Indian languages risk extinction (see http://unesco.org/languages-atlas). The popular demand for English medium schools also arises from this power imbalance.

The NEP asserts that the teaching-learning of languages must be integrated with school and higher education. A continuous supply of high-quality learning materials including textbooks, workbooks, novels, poems, and plays would be necessary for languages to stay relevant and provide vibrant opportunities to students. The NEP suggests that such translations need to be a continuous activity because vocabularies and dictionaries have to be regularly updated and widely disseminated, to enable current issues to be meaningfully discussed in these languages.

If school and higher education are easily accessible in local languages, it would redress, to some degree, the craze for English and allow us to achieve the promise of 'home language' as a medium of instruction to some extent. This means that the education system must have in-built structures and processes that can continuously create educational resources in Indian languages. This will also support students' proficiency in multiple languages (going beyond conversational competence to include reading and writing as well) – an element that is stressed in the NEP.

The NEP calls for the creation of an 'Indian Institute of Translation and Interpretation'. Such an institute would need to bring in language, subject and translation experts to promote all Indian languages, and also integrate digital technologies to scale up the creation. The Government of India has initiated the 'National Language Translation Mission' for widespread and large scale translation of resources across languages, using digital technologies, including through machine learning. IT for Change has been attempting (Kasinathan, 2021), in modest ways, to support educational institutions in encouraging their faculty (student teachers, teachers, and teacher educators) to collaboratively translate content from English to Kannada using simple FOSS tools and platforms like MediaWiki. Principles from this approach could be taken up on a large-scale, within the school and higher education system, to meet NEP's ambitious recommendations in the area of content, and also support teacher professional development by encouraging teachers to engage with these materials during the trans-creation of e-content.

Programs for teachers and teacher educators, to develop multilingual learning materials, using digital platforms and tools, can also support large-scale trans-creation of art, literature and cultural resources from one language to another. The digital platform is indispensable to this huge, complex, and perennial resource creation process; sharing created resources freely (as Open Educational Resources) on digital platforms can help others re-use, revise/adapt these for their own use and publish their variations back on these platforms.

The NEP implicitly accepts that such materials must be accessible to all, without the constraints of traditional copyright ('all rights reserved' by the author/publisher). However, it does not explicitly call for the creation of Open Educational Resources (OER). Any content is OER if it is licensed using 'copyleft' or 'creative commons' licensing, which allows others to re-use, revise, curate, and re-distribute the content. The global OER movement has been working to ensure the easy availability of learning resources to all. In India, the Ministry of Education has set up the NROER and DIKSHA OER platforms. The principle of OER must be explicitly applied to all resource-creation processes and outputs. These rich and growing repositories can automatically become sources for digital libraries, which the NEP recommends as part of rejuvenating public libraries across the country, as well

as providing resources for schools, teachers, and students.

Likewise, although the NEP recommends that a variety of educational software applications should be developed and made available in Indian languages, it stops short of calling for the licensing of such software through the 'general public license', which is the popular license used by free software communities to develop and distribute free and open-source software (FOSS). FOSS and OER licensing make software and content 'public' resources that everyone can participate in creating, using, and sharing. Thus, the call in the NEP to invest in the creation of open, inter-operable, evolvable, *public* digital infrastructure in the education sector must be read as necessarily including FOSS, OER, open hardware and connectivity, as well as open standards in each of these.

Teacher Professional Development (TPD)

Although Eisner suggested that content and pedagogy are the systole and diastole of teaching, he added that "No curriculum teaches itself, it always must be mediated, and teaching is the fundamental mediator." This highlights the criticality of teacher agency. Material making, apart from being an end in itself, can also be instrumental for strengthening teacher development and agency. As teachers and teacher educators engage with materials/content and the complexities of marrying educational aims, contexts, and diverse learner communities, they will need to think of creative approaches to develop rich and contextual materials.

The NEP recommends that teachers should be encouraged to use bilingual teaching methodologies, using bilingual teaching-learning materials, as this would be relevant for students whose home language may differ from the medium of instruction. The process of material trans-creation can also strengthen teachers' multilingual capacities, essential for providing multilingual teaching environments in schools. Such an approach would be equally applicable to Science teachers in English medium schools across the country and to Marathi/Tamil/Telugu/Urdu 'minority language' medium schools in a state like Karnataka, and would support home language-based instruction at higher levels of schooling as well.

The NEP also recommends that digital technologies should be extensively used for teaching-learning of languages and to popularise language learning. Using FOSS applications to create picture stories, audio books, video stories on a large scale by teachers, can popularise language learning. ITfC , in collaboration with the Regional Institute of English, South India, has conducted workshops for elementary and secondary school language teachers to develop their abilities to create audio OER using the FOSS audio editor Audacity. The 'storyweaver' (https://storyweaver.org.in) and 'Karadi Tales' projects are good examples of multilingual approaches to language learning through image, audio and video resources, that can be implemented across the country.

Apart from using digital technologies to support teachers' in 'creating and learning', these technologies can also support teacher development through 'connecting and learning'. 'Creating and learning', 'connecting and learning' are themes for ICT integration in education, discussed in the NCERT National ICT Curriculum, 2013. The NEP suggests the substantial expansion in the use of technology platforms such as SWAYAM and DIKSHA for online training of college and university teachers as a part of their in-service continuing professional development. It recommends that teachers should be given continuous opportunities for development, including learning recent advances in their profession. Such development should be offered in blended mode, combining workshops and online courses. Digital platforms would also be needed to enable teachers to share ideas and experiences. Currently, WhatsApp is the most popular platform in India. However,

as a proprietary platform, WhatsApp is vulnerable to privacy, surveillance, and data security risks and there will be a need to encourage the adoption of FOSS platforms for enabling teacher interactions.

I have earlier emphasised, in this journal, the need to adopt FOSS online learning platforms such as Moodle Learning Management System and the BigBlueButton webinar platform (Kasinathan 2020a). These learning platforms can be deployed state-wide since they can be installed on teacher education institutions' or state government data centres' servers. However, proprietary platforms could become prohibitively expensive if implemented state-wide. More importantly, the risk of data surveillance and data theft on proprietary online platforms is real and must be avoided.

A critical perspective on technology

Technology is not new to education. It has always been considered a resource that a teacher can use in the manner she thinks appropriate. All teaching aids are technological artifacts. Digital technologies can be best used in education by being available to the teacher to use in a manner the teacher deems fit. Of course, teacher capacity building to make use of digital technology is essential since digital technologies may be too complex for all teachers to acquire purely through self-learning. Yet, capacity building cannot be restricted to the ability to use a tool, it must also include a critical understanding of when to use the technology, whether to use it at all, and what dangers/ risks its use entail. Building such a critical perspective to technology among teachers is as, if not more, important than simply imparting the knowledge to use it. This warning is important since most of us tend to see ourselves as 'users' of technology – we have no idea how it works, or what it does. In the case of digital technologies, ignoring the 'know-if and know-why' and focussing only on the 'know-how' can be positively dangerous and harmful. Two dangers are discussed below.

First, unlike technologies of the past, digital tools and platforms seductively sneak into our lives as 'free' (gratis or no cost) products, although they actually deprive us of the 'free'doms, which we exercise for other technologies. These freedoms include freely sharing them with others, customising them to our needs, etc. As 'users' of digital tools and not 'participants', teachers are locked into technologies over which they have no control, severely affecting their agency. This risk is mitigated by choosing FOSS technologies over proprietary technologies.

Second, unlike a pen or a book, which are inert, digital technologies can be interactive. Because of this, many programs focus on directly providing applications and content to students, bypassing teachers. There is a widely held belief that teachers lack willingness / motivation and ability, and are the problem in school education, and that digital technologies can help to provide education without teachers. While self-learning does have a role, it is futile to imagine that it can replace learning mediated by a caring and competent adult. During the school closure triggered by the pandemic, apps for student learning are being pushed big-time. While these apps may provide some structured interactions and may be useful when schools are closed, this should not be confused with real education in classrooms.

The so-called 'disruptive' technologies – machine learning with big data – will lead to an increasing emphasis on 'personalised learning'. This will further reduce the role of the teacher, both by encouraging learners to learn through direct engagement with the computer and also by 'suggesting' to the teacher what content and pedagogy should be followed for a particular learner. Artificial intelligence (AI)-based assessments of student learning, will tend to be narrow and fail to capture larger conceptual understanding. AI risks de-skilling teachers and converting education into a process of 'learnification', atomising conceptual

understanding into smaller and smaller bits of achievement, which machines are able to test (Kasinathan 2021b).

The dangers of AI in other fields are already being documented, including their inherently iniquitous nature (Flynn, S., 2020). AI in education can worsen existing social inequities, directly contradicting education's primary aim of social transformation, discussed at the beginning of this article. A rule I would propose is that no technology should be allowed to come between the teacher and learner. The best use of AI could only be suggesting diverse content and pedagogic strategies to a teacher, allowing her to make the final decisions. The NEP alerts that technological development is happening at a furious pace, hence it is not possible to foresee in what ways technology will impact education. While it calls for ongoing research and evaluation to assess the benefit and costs of digital technologies, it is must be clear that technologies and their functionalities will keep changing. Firm adherence to fundamental principles of education alone can enable us to stay clear on how to design the integration of digital technologies in education. Teacher agency and control over classroom processes is one such fundamental principle.

Neil Postman's (1998) principles of technology are useful caution in designing AI in education. Firstly, all technologies benefit some and harm others, and we need to investigate who is benefited and who is harmed. Technology companies can gain from the large school market, but education can suffer by integrating unproven products or services. Secondly, benefits are usually visible immediately but harms are often visible only over time. For instance, 'gamification' was hyped as 'the game changer' for self-learning, but the harms, including addiction (Andrade, 2016), as well as ethical harms (Kim, 2016), are being noticed over time. The NEP suggests that "activities involving coding will be introduced in Middle Stage". This too is an area where we must exercise caution. There has been an increasing hype around learning coding in middle school, as large commercial programs are pushed on parents who lack an adequate understanding of the issue (TDH, 2020). In addition, the danger of addiction to digital technologies is high, and younger children need to be kept away to reduce the possibilities and extent of addiction. Toyoma (2011) warns that "... there is a repetitive cycle of technology in education that goes through hype, investment, poor integration, and lack of educational outcomes. The cycle keeps spinning only because each new technology re-initiates the cycle."

Access to digital infrastructure is currently highly iniquitous. While most middle-class students, even from primary schools, have had some kind of online education during the pandemic, it is estimated that over 80 per cent of the students going to government schools have not been able to regularly access digital education (NCEE, 2021). The NEP stresses that we need to plan for a scenario where Internet-connected smartphones or tablets are available in all homes and digitally-enabled (smart) classrooms in all schools. Access is a prerequisite for enabling use. However, increasing access must be implemented simultaneously with developing digital literacy. Digital literacy includes critical perspectives to digital technologies, which can prevent schools and teachers from becoming passive appendages to digital infrastructure, including AI. Also, availability of device, electricity, and connectivity are three independent huge challenges, which need to be overcome through significant public investments. In the section on online education, added in light of the school and college closures triggered by the pandemic, the NEP correctly requires massive investment in public digital infrastructure to address the huge inequities in access to digital learning.

Such digital literacy is equally important for communities if, as the NEP recommends, they use the school digital infrastructure for 'adult education and lifelong learning'. There are cases of illiterate (and literate

but ill-informed) people being fooled into transferring their assets and rights to online scammers and 'making sense' of the digital phenomena is more important than merely the ability to use apps. Thus, for adult learning, building such critical understanding should be fundamental to the integration of digital technologies such as apps, online courses/ modules, satellite-based TV channels, online books, and digital technologies enabled public libraries. The NEP seeks teachers' professional development to engage with the online and blended modes of learning. However, it sees this largely as the 'ability to use' online tools than the ability to critically review and use (these tools) as deemed appropriate.

The NEP recommends the use of assistive devices and other digital technologies for children with special needs, to help them integrate into classrooms and engage with their teachers and peers. While all students are vulnerable to cyber exploitation and cyber abuse, these students are even more so. Building critical understanding as a fundamental component of digital literacy is essential for all teachers and students. As global democracies world struggle with an onslaught of fake news and propaganda through social media (Vaidhyanathan, 2018), it is clear that this onslaught can only be addressed in the long term by building critical thinking skills as a part of formal education. This is a necessary complement to legal and policy measures.

Education and technology – Bi-directional impact

The NEP asserts that technology and education have a bi-directional relationship at all levels. It rightly sees that "technology will impact educational processes and outcomes" but its assessment of the impact of education on technology is limited to educating Indians about technology ("will require extensive research both on the technological as well as educational fronts"). The educational aspect must include the ethical and normative aspects as well.

There is a vital additional component to the role education can and must play with respect to technology, raising and discussing the questions of "Technology – When should it be used? When should it be avoided? And to what extent should it be used?" Philosophers, sociologists, and political scientists have highlighted that technology must not be accepted as a given, but its scope and impact must be continuously interrogated and even consciously limited. A 'mythic approach', as described by Postman (Postman 1998), which involves the unquestioning acceptance of technologies 'as a part of natural order of things', must be avoided.

While the actual production of technology might still happen predominantly in industry, research, or free software communities, the role and scope of technology in our life needs to be shaped by informed public discourse, and higher education must birth and nurture such debates. Such debates must also be part of the mandate of the autonomous body, the National Educational Technology Forum (NETF), which the NEP recommends should be created as a platform that can support the free exchange of ideas in school and higher education, on the use of digital technologies to strengthen learning, assessment, planning, and administration. However, the NEP imagination of the decision-making at the NETF as restricted to national and international educational technology researchers, entrepreneurs, and practitioners is inadequate. It should necessarily include inputs also from educators with a background in various disciplines that contribute to education. This should also apply to the unit proposed by NEP to be set up within the Ministry of Education for the development of "digital infrastructure, educational content, and capacity".

These debates are particularly necessary around the latest trend of big data and machine learning (AI). Every time we consider the use of AI, we need to ask several questions including, what kind of decisions are to be made by the AI? How will

these decisions affect different sections of society? Who is likely to be harmed? Unless there is a common clarity that any harm or unfairness is not possible while using AI, it should not be used outside of testing. Real-life consequences cannot and should not be suffered by innocent people simply because technologies have to be used or matured.

The NEP alerts us that with rapid advances in science and technology, including the recent rise of big data, machine learning, and artificial intelligence; many unskilled jobs may be taken over by machines. It asserts that the need for a skilled workforce, particularly involving mathematics, computer science, and data science, along with multidisciplinary abilities across sciences, social sciences, and humanities, will simultaneously increase. This belief suggests that the extent of gain and loss will be similar.

However, a secular analysis of technology-related disruptions to work and employment suggests that the limits of nature, which new technologies continuously seek to exploit, have been reached (Bernstein, 2015). Even as the disruption of the industrial revolution (which displaced agricultural workers into industries, and replaced physical labour with machines) continues to be unresolved, especially in a country like India, the digital revolution will displace unskilled, semi-skilled, factory and white-collar jobs, and reduce the need for many modern professions as well (Mehta B.S., 2019). This hugely negative and iniquitous impact on employment will only be partly compensated by new jobs created by these disruptions, in few areas like data science. In addition, the profile of job gainers and job losers will be very different. As Postman warns, technology changes benefit some sections and harm other sections and "the winners always try to persuade the losers that they are really winners" (Postman, 2018).

Already, jobs have become the issue around which elections are contested in many countries. In India, we have been witnessing an increase in unemployment (Nath, 2020). This process is likely to worsen. In a labour surplus country like ours, the appropriate deployment of technology needs to be a matter of design rather than being determined by chance or left to the market. This example is to illustrate the perils of not adequately assessing risks from technology-induced changes.

The solutions to the problems of technology do not always lie in its increased use, but hard political choices about its appropriate use. The debates to create the thinking and impetus for such political choices need to lie in courses and research on technology and society in higher education, where learning about technology is not about its creation or use, but its place in society, and its place in education, to support social transformation towards justice and equity.

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Nurturing Creative Potential of All Children: Exploring the Possibilities of Realizing the Vision of NEP 2020 in Indian Classrooms

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Introduction

The launch of National Education Policy (NEP) 2020 was a historic moment for the country as the nation received a new education policy after 34 years. The policy is being deliberated upon, debated, and understood by various educationists and other stakeholders. One major concern has been how it can be implemented and how its vision can see the light of day. The policy being an exhaustive document has been developed around several themes that include many of the contemporary issues that education has delved with worldwide. One such concern has been to see education as a holistic experience to nurturing the potential in children rather than merely transmission of knowledge.

India has been struggling to provide education for all and being a diverse, large country has found it a daunting task. In this race, the quality of education in the country, in terms of nurturing the inherent potentialities, did not get much attention. This is the thrust area of the NEP 2020 policy, which states very explicitly that education should nurture the creative potentialities of each individual. It states that, *"Education Policy lays particular emphasis on the development of the creative potential of each individual. It is based on the principle that education must develop not only cognitive capacities – both the 'foundational capacities' of literacy and numeracy and 'higher-order' cognitive capacities, such as critical thinking and problem solving – but also social, ethical, and emotional capacities and dispositions"* (p. 4). Thus, the policy focusses on the developmental and inclusive perspective of creativity viewing it as a potentiality, which could be nurtured amongst all children.

The policy also advocates reducing the load of content so that creative ideas and creative processes can flourish. It states that, *"Education must move towards less content, and more towards learning about how to think critically and solve problems, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new material in novel and changing fields"* (p. 3). To achieve these goals, it suggests the evolution of pedagogy to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible, and, of course, enjoyable. Apart from this, it specifically mentions scientific temper and evidence-based thinking, and creativity and innovativeness as some of the skills and capacities that should be learned by all students to become good, successful,

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innovative, adaptable, and productive. Thus, the policy acknowledges creativity as one of the fundamental principles that will guide both the education system at large, as well as the individual institutions within it.

Creativity as an area already exists in education and has evolved over a period of time. It has developed into a construct that could be understood through multiple perspectives. Countries like the United Kingdom had long back envisioned nurturing creativity in their children and have in this process conceptualised newer notions of creativity specifically in the realm of primary education (Craft, A. 2001). Hence, to explore the possibilities one needs to look at the various perspectives of creativity and deconstruct the idea specifically for the Indian context. Thus, this paper attempts to operationalise the vision of NEP 2020 with respect to the idea of creativity in education. In this regard, the paper presents specific instances as well as anecdotes from Indian classrooms that provide convincing evidence for the creative potentialities amongst children and convey the possibilities of nurturing these potentialities. A synoptic view of various perspectives of creativity is also given as a reference point.

A synoptic view of creativity'Creativity' is a highly valued construct worldwide. Any human development in any field can only be possible through generation of new knowledge, new ideas and new ways of looking at reality. The importance of 'creativity' in education is explicit from the emphasis that various educational policies across the world lay on the development of creativity as one of the main aims of education. The concept of 'creativity' has many constructs that describe or explain it from different perspectives, which makes it challenging to define it in a few words or phrases. Traditionally, Rhodes (1961) concluded that creativity definitions existed in 4P's: PERSON – identification of the characteristics of the creative person; PROCESS – the components of creativity; PRODUCT – the outcome of creativity; and PRESS – the qualities of the environment that nurture creativity. Torrance (1976) has also observed that creativity has usually been defined in terms of process, product and at times personality or environment. A similar view was given by Simonton (2008) that provided four potential ways to study creativity. First, creativity can be viewed as a specific personality trait and can be measured with personality inventories. Second, creativity can be studied as a mental process and problem-solving technique. In this case creativity can be measured by divergent thinking tests. Third, creativity can be defined as a characteristic of a product and can be assessed through the estimation of the value of the product. Fourth, creativity can be described as a function of the environment. These ways to study creativity are mutually dependent and Simonton explained this inter-dependence by stating that *"Creative products are generated by creative persons using creative processes."*

The 4C model of creativity developed by Kaufman and Beghetto (2009) viewed creativity as a developmental process. The first C refers to extraordinary or high creativity displayed by geniuses with special gifts, often called 'high' or 'big C creativity' (BCC); the second C refers to more ordinary, everyday creativity, called 'little c creativity' (LCC). This basic distinction neglects two key levels – mini-C and pro-C. Mini-C is the creativity that happens in the learning process, and pro-C is expert level creativity. It might be someone who has composed music that is currently popular. Everyone has mini-C and most of us can reach little-C. Many of us can attain pro-C with enough work and training and only a few reach big-C. Generally, most conceptions of creativity tend to take one of two approaches: big-C and little-C. "LCC is different from BCC in that it is the kind of creativity that "we all share because we have a mind and can think" (Csikszentmihalyi, 1996, p. 7). In the context of little-C perspective of creativity, the potential of all human beings to be creative is called 'possibility thinking' by Anna Craft (2000). She asserts that *"Possibility thinking is at*

the heart of all creativity in young children, whether they are working alone, in parallel or in collaboration with others. Possibilities are generated by children (and adults) in all areas of learning, whether imaginative play, musical exploration and composition, cooking, mark-making or writing, outdoor physical play, mathematical development or early scientific enquiry. Possibility thinking is the means by which questions are posed or puzzles surfaced – through multiple ways of generating the question 'what if?'... Fostering children's possibility thinking can be seen as building their resilience and confidence and reinforcing their capabilities as confident explorers, meaning-makers and decision-makers." She defined little-C creativity as a capacity to route – find in life, to take action and to evaluate – what is effective or successful and considered it as a cross-curricular skill, which could be nurtured in any domain of knowledge through education. She believed that all children have the potential of little-C creativity and this potential could be nurtured. This perspective of creativity can be viewed as an inclusive approach to study creativity.

Runco (2003) also focussed upon creative potentialities amongst children (unfulfilled possibilities), which could be nurtured and may get manifested as creative performances. In the context of education, he defined creativity as, "*thinking or problem solving that involves the construction of new meaning. This in turn relies on personal interpretation and these are personal and new for the individual*" (p. 317). Runco (2003) stated that, "*a child's potentially creative work might very well be original and adaptive only for that individual child but unoriginal when compared with ideas or insights that other individuals have had. A child's creativity can be quite personal*" (p. 318). This perspective is similar to personal creativity and in consonance with Piaget's cognitive developmental theory. The major perspectives to creativity, as discussed, reflects that creativity is multi-dimensional and has a wide scope as it spreads across various domains with a broad spectrum of activities that can be described as creative. For instance, Einstein's theory of relativity, Newton's laws of gravitation, Planck's quantum theory are some of the renowned examples of creative ideas that manifests scientific creativity of the creative geniuses.

Clearly, these products/ideas are very different from how creativity is perceived in the artistic domain for example, Shakespeare's Hamlet, Vinci's Mona Lisa painting, Beethoven's fifth symphony, etc. Any individual can have one's own interpretations of the artistic works/ideas but to understand and interpret scientific theories the individual needs to have some basic knowledge of science. Whether creativity in different domains can be explained in similar terms is a relevant question that arises from this debate. The answer could be both 'yes' and 'no' as there are certain common features of creativity that are relevant to all domains but there are certain domain relevant specifications, which make creativity in that particular domain exclusive and different. In the context of education and learning, creativity is considered in relation to a specific domain. Though most of the earlier research on creativity recognised it as domain independent but learning related creativity is domain specific by nature; its functioning in one domain is unique and psychologically different from another. Also, creativity within specific domains is distinct from creativity as a separate process, applied within domains (Feldhusen, 1994). Thus, the knowledge of a particular domain, domain relevant skills, domain general creativity skills and creative thinking processes/skills are of great importance if one wants to be creative in a particular domain. As one proceeds to a higher level of education, such as graduate and postgraduate level, domain knowledge becomes highly specialised and creativity becomes more domain specific. However, in schools, the curriculum of various subjects/domains is more interdisciplinary that allows scope to nurture creativity general skills through different domains.

This synoptic view on creativity provides a brief description of various perspectives

about creativity that have evolved over centuries and the contemporary ideas of creativity that are most relevant to the field of education. The paper further explores how the vision transformed in the field of creativity education in the Indian context in terms of its educational policies up to NEP 2020.

Creativity education in India: Transition in vision up to 2020

India is a land of cultural diversities and has a rich heritage of ancient knowledge. The aim of education in ancient India was not just the acquisition of knowledge as a preparation for life in this world, or life beyond schooling, but for the complete realisation and liberation of the self, which was the ultimate philosophy of creativity. The ancient Indian education system produced great scholars and creative personalities, such as Charaka, Susruta, Aryabhata, Varahamihira, Bhaskaracharya, Chanakya, Panini, Gargi among numerous others, who made seminal contributions to world knowledge in diverse fields such as mathematics, astronomy, metallurgy, medical science and surgery, etc. Realising the importance of nurturing creativity, the educational policies in India have emphasised upon inculcating creativity and its associated skills amongst all children through education. For instance, the reports of Education Commission (1964-66), National Policy on Education, Programme of Action (1986,1992) and NCERT Curriculum Framework (1987, 2005) have all along emphasised the need to develop spontaneity, curiosity, independence in thinking, originality, courage to ask questions, in short, creative thinking skill and abilities.

It's been more than 15 years since NCF 2005 was implemented yet the situation has not changed to a large extent. NCF 2005 and earlier policies or commissions have discussed creativity merely in terms of reducing it to a kind of thinking, which is referred to as creative thinking. But NEP 2020 envisions it as a potential or a capacity in every child or individual. Where previous commissions, policies or frameworks have only focussed on the cognitive or thinking aspect in relation to creativity, NEP 2020 asserts that it cannot be solely developed as a thinking aspect. Rather, the creative potentiality has to be nurtured holistically by focussing on other aspects of the personality too, such as social, ethical, and emotional aspects. Literature on creativity too supports the idea. Several researches in the area of creativity prove that there are various other associated skills or abilities that facilitates an individual to realise one's potentiality and work towards it. Also, great Indian thinkers, such as Swami Vivekananda, Krishnamurti and Tagore have discoursed for a holistic development of an individual that is evolutionary in process. They have shown more concern about the kind of experiences offered to an individual and their development rather than their performance or contribution. The NEP 2020 also contextualises the idea of creativity for the contemporary times and acknowledges creativity as a prerequisite to adapt to the emerging field as well as the changing world. This idea is in congruence with the rationale given for the conceptualisation of little-C creativity by Anna Craft.

NEP 2020 also advocates a holistic and multidisciplinary education approach based on positive learning outcomes of previous assessment of integrated educational approach at undergraduate level wherein arts is integrated with STEM (science, technology, engineering and mathematics). The assessments revealed that such integration have shown increased creativity and innovation, critical thinking and higher-order thinking capacities, problem-solving abilities, teamwork, communication skills, more in depth learning and mastery of curricula across fields, increase in social and moral awareness, etc., besides general engagement and enjoyment of learning. NEP 2020 cites the example of word renowned Indian universities such as Nalanda and Takshila and extensive ancient Indian literature that enforces the idea of integration of knowledge across different domains. For instance, it refers to ancient Indian literary

works such as Banabhatta's *Kadambari* that considered knowledge of the 64 *kalas* or arts as good education. It considered not just the usual artistic domain subjects such as music or painting but also technical fields such as science and mathematics. To quote from Banabhatta's *Kadambari*, "among these 64 'arts' were not only subjects, such as singing and painting, but also 'scientific' fields, such as chemistry and mathematics, 'vocational' fields, such as carpentry and clothes-making, 'professional' fields, such as medicine and engineering, as well as 'soft skills', such as communication, discussion, and debate. The very idea that all branches of creative human endeavour, including mathematics, science, vocational subjects, professional subjects, and soft skills should be considered 'arts', has distinctly Indian origins." Looking back to our roots, that is the Indian traditional knowledge, ancient culture and the notion of 'knowledge of many arts', which is also called 'liberal arts' in modern times, NEP 2020 advocates that such an education system should be brought back and considered as the exact need of the 21st century education system. It also emphasises upon the importance of arts as a strong medium of imparting culture and nurturing creative abilities in individuals and suggests that it should be offered to students at all levels of education as early as possible. NEP 2020, thus, promotes the idea of STEAM, including arts in STEM subjects, to nurture the creative abilities of students and to make the education system more holistic and multidisciplinary.

In previous policies before NEP 2020, the concept of 'creativity' was limited to just another thinking skill that needed to be nurtured for the overall development of the child but different constructs of creativity that are relevant to children were not even mentioned. However, NEP 2020 has specifically and explicitly emphasised and focussed upon the contemporary ideas of creativity, such as creativity as potentiality and everyday creativity. This shift in the way creativity is conceptualised in NEP 2020 looks more promising in terms of nurturing a child's creativity. However, how this vision can be implemented at the grassroots level and how the hidden creative potential of children can be identified and nurtured in our diverse Indian classroom is an important area to be explored to understand the dynamics and various possibilities that it offers.

Nurturing the creative potential: Exploring the possibilities in classrooms

This section is based on some evidence that shows the creative potentialities amongst Indian children and the experiences through which they get cultivated. The idea of 'potentiality' itself is indicative that it is inherently present in every child. This implies that the educators, teachers, and parents need to understand the experiences that may provide opportunities to further develop their potentiality. The question then is what are these experiences that help the children to engage with novel and unconventional ideas? How diverse can creative potentialities be and how do children realise as well as develop their potentialities? The classroom is the most appropriate space where one can expect to get responses to these questions. The deliberate efforts made by the teachers or their spontaneous attempts may create instances or anecdotes that are worth analysing and are insightful. Thus, various instances and anecdotes found helpful in understanding the above concerns have been discussed. An attempt has also been made to capture the perspectives of teachers in this regard through their narratives. The teachers' narratives and instances shared by them from their classroom experiences have been included.

Brief overview of the project

The project aims at understanding the potentialities of creative and other associative skills amongst Indian children from diverse backgrounds and establishing its linkage with curriculum for their nurturance. The study attempts to develop intervention models for

nurturing their potentialities and realising the changes in the classroom processes. The study seeks to enhance our ground understanding of creativity, education and skills and enrich the discourse of education, skill and employment for informing the policy formulation for 21st century schools in the Indian context. Two of the research objectives from the project that relate to the theme of the paper are as follows:

1. To study teachers' perspectives of creativity as well as associated skills amongst Indian learners
2. To study teachers' perspectives about various ways in which creative potentialities in children can be nurtured Methodology for data collection and analysis

This project is under process and in the phase of data collection and preliminary analysis of the obtained data. A semi-structured questionnaire was prepared by the researchers and a pilot study was done with five teachers. On the basis of the analysis of the pilot data, the questions were modified and the tool was finally validated by an expert. Due to the lockdown and the persisting pandemic situation, the data could be collected through online mode only. The questionnaire was converted into a Google form. Random sampling was done and the form was distributed through snowball sampling technique to collect the data from school teachers across various states of India. In all, 50 teachers from Delhi, Haryana, Pune, Bihar and Odisha submitted the form. The questionnaire included 10 open-ended questions. Hence, the data is subjective in nature wherein teachers responded from their personal experiences and shared many instances from their classrooms in which they could identify creative potentialities amongst their students.

This called for a qualitative analysis of the data to provide some insights into the matter of our concern and major themes that emerged from the analysis have been discussed in the following section.

Qualitative analysis of teachers' narratives in response to the questionnaire

The data obtained from the teachers' questionnaire were analysed qualitatively and the following themes emerged from the data:

1. Teachers' notion about different perspectives of creativity and creative potentialities amongst students
2. Instances and anecdotes from classrooms that depict children's creative potentialities
3. Strategies adopted by teachers to nurture creative potentialities amongst students

Each of the themes has been explained individually.

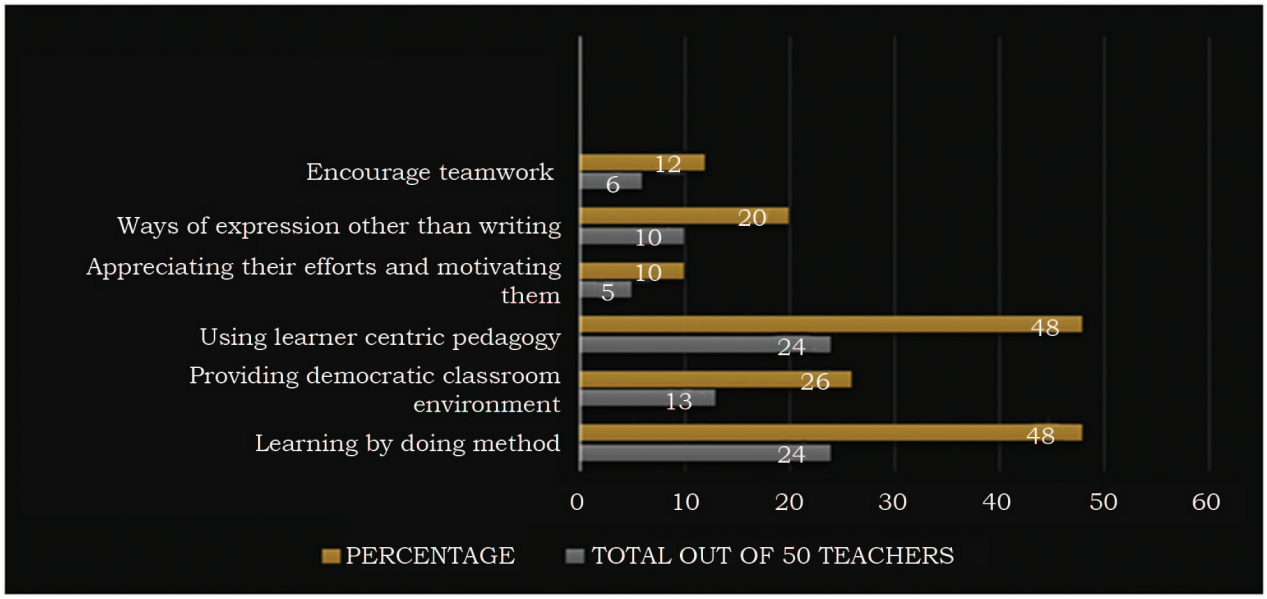
Theme 1: Teachers' notion about different perspectives of creativity and creative potentialities amongst students

The analysis of teachers' data about creativity revealed that teachers had multiple concepts about the idea of creativity that reflected different perspectives of creativity as discussed in the section on the synoptic view of creativity. The graphical representation of major sub-themes that emerged under this theme is shown in Bar Graph 1. Some of the responses were very few in number but relevant to the theme. They were also quoted and analysed qualitatively.

BAR GRAPH 1: Representation of frequency of teachers' responses and percentages for each sub-theme

Most of the teachers (48%) described creativity as an act of creating something new, which may not always be a tangible product obtained from turning imagination into reality but also new ideas or looking at things differently. Some responses from teachers are shared below.

"Creativity is the ability to create new things using your own ideas. It involves transforming your imagination into reality. It requires out of the box thinking."



"Creativity is the ability to come up with new ideas, to view the world and its patterns in a different and unique light."

"Creativity is looking at a thing differently. Being imaginative. Approaching things in an exciting way."

"Creativity to me is the ability to be imaginative and see things differently."

"Use of your individual talent and imagination to create something different."

The teachers' narratives quoted above reflect that the teachers believed creativity was an individual's ability that can be seen both in terms of the product created and as a process. They consider imagination and thinking divergently as important aspects of creativity. Some teachers shared that creativity was a potentiality amongst all individuals that can be nurtured, thus focussing on the developmental perspective of it. Some of the teachers' narratives in this regard are**:**

"*Creativity in the context of education can be seen as potentialities that engage a child to think, to act, to feel and to create something original. Here original is not in terms of original to the world but to that particular child."*

"Creativity is a wider term which can be used to describe one's potential in different manners in different domains."

"Every child is creative."

"Each person is creative in his own way."

"Creative means having a different perspective for a common thing."

"Creativity is hidden in every person. We just need to nurture it by encouraging the person."

These quotes reflected that teachers were more inclined towards Runco's ideas of creativity and Anna Craft's little-C perspective wherein they believed that everyone can be creative and viewed creativity as a hidden potentiality that needed to be explored. Also, the teachers are sensitive to the fact that 'originality or newness' may be subjective, that is it may not be new for the teacher or the world but may be new for the child. This shows that the teachers perceive creativity as an everyday perspective that is referred to as small-C in literature, which is dichotomous to the big-C perspective of creativity. This indicated that teachers perceived creativity as a potentiality that can be nurtured in every child and its manifestation can be seen as an idea or a tangible product that may be new for the child. Thus, this developmental

perspective as echoed in teachers' narratives too has implications for education. Contrary to this view, is the big-C perspective, which is an elite idea and is generally considered to be a prerogative of only geniuses or a selected few. Three teachers from the sample referred to creativity as an innate ability or an inborn quality as quoted below.

"Creativity is an innate ability that activates the senses of the child (person) by using imagination and ideas to come up with a solution to a problem. Creativity plays a significant role in development and success. Creativity should be nurtured."

"It's a born quality."

It is difficult to interpret from the above narratives whether the teachers' perception could be referred to as a big-C perspective. In educational psychology, the terms 'innate' or 'born quality' have an inherent implied understanding that the quality or ability is present from birth with the assumption that it couldn't be developed. This can be located in the discourse of the nature vs. nurture debate where it is presumed that the two views are discrete and dichotomous. In this context, the first quote either contradicts itself as it ends with a suggestion that *creativity should be nurtured* or perhaps it sees the convergence in the two views, thus, viewing creativity as an innate ability that can be nurtured. Hence, whichever may be the case, it can be said that most of the teachers view creativity from a developmental perspective and believe that education has an instrumental role in it. This is important as the teachers' perception is one of the influencing factors for educational planning for children.

Teachers' narratives also acknowledged creativity as a personal experience for children wherein they create their own meaning while learning something. Given below are some related quotes.

"Creativity is about constructing or making meaning of the world, which emphasises on the personal interpretation of the world."

"Creativity is something very personal, but it can be flourished further in a conducive environment."

"I think creativity is all about setting a person free about his views and we can say one is creative if the person constructs something or gives any idea, which is useful and something everyone was unaware of."

"It may or may not turn into a product but it definitely starts with an idea. It can be as evolutionary or revolutionary to the field. These differences occur, because we use different lenses to understand and explain creativity."

The perspective of personal creativity is similar to the idea that Runco asserts in context of children's creativity. As discussed above, meaning making and construction of new knowledge is also in consonance with Piaget's theory and constructivism. The last quote from the above stated teachers' narrative extends the personal creativity to big-C creativity, that is expressing one's view is the first step, which can gradually evolve into an idea that is new and useful for others too.

Along with personal creativity, a few teachers also explained the importance of the process aspect of creativity rather than focussing upon the product aspect only. Teachers considered creativity as a process that can be manifested across all domains of knowledge. Sharing a few responses:

"Creativity is involved with all the subjects. As a child listens to a story in language class, the child uses imagination and later creativity to extend the story. I can say that the nature of the subject and idea of creativity is related. For example, while teaching maths I see how different children take different routes to solve a mathematical problem. On the other hand, while engaging in Hindi class, I see how children make connections with the text, and interpret it within the frame of their experiences. How elaborately they express the meaning, constructed while interacting with the text, etc."

"When I was teaching primary grade children, I was supposed to teach all the

subjects and according to me all the subjects have scope for creativity, just the degree varies. Languages have scope for story making, poem making, giving multiple endings to a story, role playing, etc. EVS provides the scope for exploring the surroundings by being observant, looking for similarities and differences among plants or animals, it nurtures classification and categorisation skill, experimentation like making sun dial by observing the shade of the movement of the sun, etc."

Many of the teachers viewed creativity as a problem-solving ability (44%) and thinking abilities such as divergent thinking . For example:

"Doing things differently to find solutions to problems in a bid to improve quality of life."

"Thinking of new possibilities or ideas to solve the problems.".

Few teachers also acknowledged that creativity is a multi-dimension construct. To quote:"*Creativity is a multidimensional construct. Generally, few characteristics like newness, uniqueness in ideas as well as in products can be associated with creativity."*

"It doesn't have a fixed framework, drawing or artwork doesn't mean creativity. It changes as per subject, and content-level of children."

"Creativity has many faces. It comes in different forms, in different places and situations for and with different objects. Everyone is creative in their own way of thinking, persuading and acting."

In this quote, the teacher also explained how creativity varies across different domains through examples, hence indicating domain specific creativity.

Few teachers also considered creativity as an ability of understanding self and a form of self-expression. For example:*"Creativity is the freest form of self-expression. It generates curiosity and is a satisfying and fulfilling experience for children to be able to express themselves openly and without judgment."*

"Understanding self and others is my creativity. Be happy and spread happiness. Be positive and spread positivity."

Such quotes reflected that creativity is associated with positive words such as happiness and it leads to self fulfilment and realisation of one's potential. Such views were in consonance with Indian philosophy about creativity.

The narratives discussed above indicated that the teachers had contemporary perspective to creativity wherein they laid more emphasis on the process aspect of creativity than the product aspect and considered that there is a shift from traditional approach (big-C) to developmental approach to view creativity as a potentiality, which could be nurtured amongst all children. Hence, the ideas of Runco and Anna Craft's little-C (everyday creativity) perspectives of creativity echoed in the teachers' narratives.

Theme 2: Instances and anecdotes from classroom that depict children's creative potentialities

Teachers' shared a variety of experiences that indicated various creative potentialities, which they observed in the children. Teachers' narratives showed that most of the teachers associated creative potentiality to various abilities that ranged from children assigning their own meaning to the idea, to applying the concept in daily life, critical thinking and identifying issues, divergent thinking, use of imagination to create different ideas, and logical thinking. The narratives include contexts where children responded to the teacher's question or to an activity given by the teacher. The contexts also included instances where the students' responses were unexpected, and the teacher facilitated by encouraging and building up from those responses. This reflected the spontaneity required on the part of the teacher while teaching for creativity.

One of the teachers shared about her students' creative potentialities while referring to the lockdown period. She responded that various children in her class engaged themselves in different creative expressions at home, which reflected the potentialities present in them. This,

the teacher has referred in context to the lockdown period when children were spending time at home with their parents or families, which indicates that the teacher hinted on the role of the parents or family too in nurturing the potentialities in children that could be explored further. Her narrative is as follows: "*As the global health crisis has resulted in a prolonged period of a lockdown, most children in my class engaged themselves in artistic ways of expression. Some wrote songs, poems and stories while most others spent their time drawing and making craft. I was overwhelmed with their creative thinking and their ability to be highly productive during such testing times. It would have been absolutely easy for all the students to while away their time during the lockdown. However, they did not let boredom get the better of them. They made sure to get themselves involved in some form of creation in any capacity that they could from their homes.*"

This showed that the teacher acknowledged that all children had some form of creative potentiality in them and given the opportunity, they are able to find expressions for them.

Another teacher quoting an instance from her classroom showed how children could be encouraged to create their own meaning about a concept through learning by doing. Her response was:

"*Introduction of topic magnet in Class 6: I tell them to bring their own magnet and play with it and answer my following questions like the shape of your magnet, what happens when you bring two magnets together, etc. Now the students are able to give answers of their own and create something new and interesting related to magnet.*"

This showed that she gave them an opportunity to explore and experience the magnet and then engaged them with certain questions. This, according to her, gave them an opportunity to create their own ideas about the magnet, which she related to their creative potentiality.

Another teacher shared how children apply learnt concept and improvise on various everyday material to use them as the apparatus for performing experiments at home. The teacher said, "*The one, I remember the most is when we talked about buoyancy. Then a child went home and tried the concept taught in school by performing the same at home but using things available at home like, raw eggs, boiled eggs, salt water, RO water, oil, etc and then shared the observation in the group.*"

Her narrative showed that while relating a concept to their daily life, a child can think divergently (such as in this case use of different materials), which she associated with creative potentiality.

Other teachers too focussed upon divergent thinking abilities and considered it as an indicator for children's creative potential. For instance: "*A multiplication problem is given to students of Class 3. They use a different approach to solve the problem.*"

"*Children connect something abstract with a context. This can be done differently without a definitive right or wrong way.*"

"*While solving sums some children come out with different ways to arrive at the answers.*"

"*While teaching lines and line segments, just give two diagonal lines and ask the children to make a few things with the help of those two lines. Children come up with different ideas.*"

This showed that most teachers related divergent thinking to creative potentiality amongst children. This could be encouraged in children through various activities in different subjects as well as by giving them the opportunity to try the same thing in different ways.

One of the teachers also referred to a child with hearing impairment in her narrative. "*One of my hearing impaired students is extremely creative in making different designs. The creative designs she made are not ordinary and she made them with ease.*"

This indicates that the teacher expects creative potentiality in a child with impairment, which is an inclusive idea. Also, the teacher associated creative potentiality as an ability to think easily about an extraordinary idea (in this case in the form of design that she refers to).

Few teachers shared how children use their personal experience to think critically and identify issues in the society. For instance, one teacher said, "*While talking about letter writing, I asked the students to share their opinion about what important points we can add in a letter. They were aware that when we write a letter to the authority regarding any problem, we share the problem we are facing in detail. Children, without conforming to the 'guidebook', suggested that we incorporate issues that they face in real life regarding the same problem. For me, this was a creative manifestation of students."* Another teacher shared how children think critically of social issues and identify issues. *"Students actually raised the question about consumer awareness and asked that they should know about the ingredients used in the meal that is served in the dining hall."* The same teacher also gave another example and said,

"Students raised the question that if the government wants to promote education why aren't they providing facilities to the poor instead of installing LED TV in Bihar for election campaigns."

Most of the teachers shared examples wherein children used their imagination to create different ideas. "*While teaching about the advent of British Raj in India, I specifically remember the students coming up with scenarios of the reaction of Indians as well as British living in those times. They were curious about how the kings and queens of India would have reacted to their arrival, how their arrival would have affected the peasants, soldiers, etc. and how the British viewed India and Indians. We then created a few stories and role plays around this scenario. I consider this instance to be a form of creative manifestation because instead of chugging history, children used their own imagination to think of various scenarios. They not only imagined those instances but also made up some stories and dialogues related to it."*

"While teaching the lesson, Aladdin and the Magic Lamp, I asked the children to write about / draw any one magical thing that they would like to possess and the activities they would do using the magical thing. The children beautifully expressed themselves by way of pictures and write ups. Each child had own imagination about magic."

"For a recent lesson, I had asked children to come up with an animal that may have lived millions of years ago with the dinosaurs, was a carnivore and hunted them for food. The children shared some mythical creature drawings based on the body structure of the carnivores explained in the lesson. They gave ingenious names to the creature as well. The children were only explained about the structure of the teeth and digestive system of the carnivores. For them to imagine a creature that was powerful enough to kill large dinosaurs and draw it, also using nomenclature for it was an indication of their ability to think creatively."

"While making the maps of their homes, they visualised their homes in their minds and transformed them into a two-dimensional drawing. The task was common for all but the result or the maps were all unique and their own."

"In one class while enacting the story from their English textbook, a group of students framed the dialogues from the passive text. They also created some more dialogue, understanding the context of the story. Those dialogues were their creation and were original. They also improvised a lot by including more scenes in between because they felt that they will not be able to convey the story well without those scenes."

Some teachers shared examples wherein students used their logical thinking to manifest their creative potential. "*I had asked the students some riddles based on shapes. They had to identify the objects. Here, they*

used their listening skills. They could imagine the shape, apply logical and critical thinking and give the answer."

"While teaching Sudoku puzzles to focus on logical thinking, I encouraged children to come up with different creative ideas of creating Sudoku puzzles using shapes, fruits, etc along with numbers."

The teachers' narratives quoted above showed that the teachers acknowledged that the students have different kinds of creative potentialities that they may express in various ways. This is in consonance with the domain specific idea of creativity that creativity existed in different domains. The teachers' narrative also signified that they associated children's creative potentialities to the ability of assigning their own meaning or constructing their own idea about the given concept, which could be encouraged by engaging them in learning by doing. The teachers have stated instances where students have applied or improvised an idea to a real-life situation, which means they see this ability as a creative potentiality as it required divergent thinking. The other abilities associated with creative potentiality in children included the ability to easily think of an extraordinary idea, divergent thinking, thinking critically without simply conforming to the book and identifying issues from real life, imaginative and logical thinking.

Theme 3: Strategies adopted by teachers to nurture creative potentialities amongst students

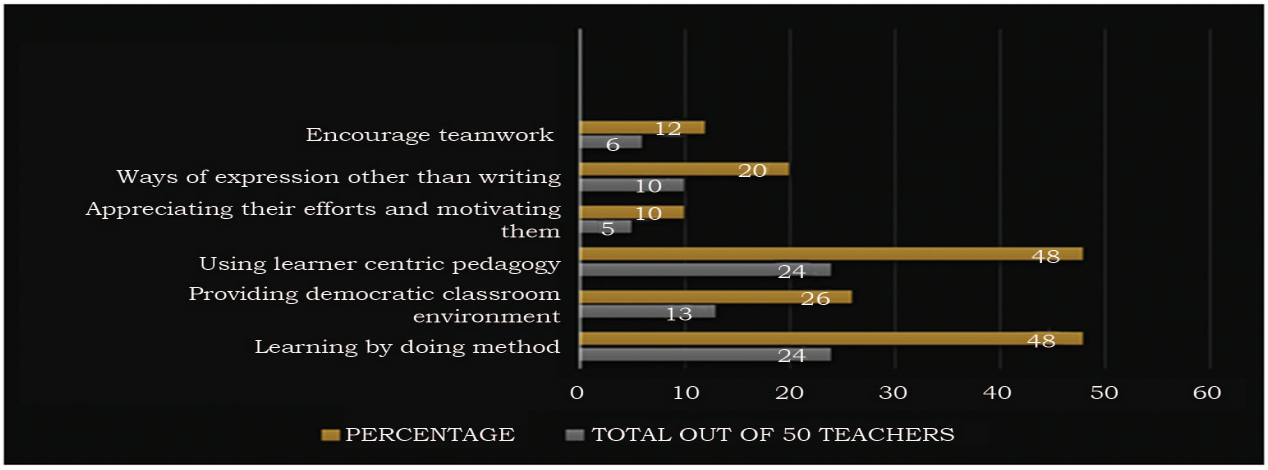
The teachers have shared diverse strategies in their narratives that they usually apply in their classroom to nurture creative potential amongst their students. These have been categorised into six sub-themes, which are explained further along with the phrases quoted from the narratives of the teachers. The graphical representation of these sub-themes is shown below.

BAR GRAPH 2: Representation of frequency of teachers' responses and percentages for each sub-theme

Learning by doing method: Teachers have shared various responses, which show that most teachers plan activities that involve 'doing', that is active involvement on the part of the learners for nurturing their creative potentialities. Various ideas shared by teachers in this respect include planning activities that involve observation, experimentation, hands on work, taking them out for exploration; giving inquiry-based instructions emphasising more on practical knowledge than bookish.

Providing democratic classroom environment: The teachers' narratives showed that they give a lot of emphasis on the nature of classroom environment, which they think should be democratic and should give space to the learners to think on their own. Different strategies shared by them in this respect include asking open-ended questions, assigning situations in which they can think differently, openness to new ideas, allowing the students to ask questions why and reasoning, giving them sufficient time to think and judge the questions and answers, and giving them the freedom to do their best.**Using learner-centred pedagogy**: The teachers' narratives show that they apply learner centric pedagogies for nurturing the creative potentialities in learners. They stated play way methods, experiences that gave them opportunity for visualisation, imagination, discussion, divergent thinking, creative thinking, problem solving, role play, etc., which is focussed on developing abilities in the learners.

Appreciating their efforts and motivating them: Some teachers have also stated that they appreciate and motivate their students for their efforts, creative initiatives or abilities and provide them motivation by giving them appropriate suggestions. They appreciated their creative capacities, suggesting improvements, and providing continuous motivation. Thus, the teachers see themselves as facilitators in this process by giving them independence but also guiding them at the same time.



Ways of expression other than writing: By involving them in activities such as drawing, painting, paper folding activities, poster making, etc., some teachers have indicated the role of alternate ways of expression for the children other than writing or speaking.

Encourage teamwork: Few teachers have also stated that they should be involved in team work such as group projects that provide the opportunity to work independently at the same time in coordination with others. This will help them to develop their interpersonal creative abilities.

A few responses by teachers:

"I try to include a scope of discussion in my pedagogy to provide opportunity to my students to nurture their creative potential, be it any mathematics problem, EVS related concept or language class. I think it is important to not provide readymade solutions at first. Initially, we should let children explore and then provide an opportunity to discuss their thinking, ideas or solutions over the same."

"Some common strategies which I employ to provide such opportunities to the children are to help them make stories or plays around the idea of significant historical events. I also encourage them to critically think about the present and identify the problems or gaps the society is facing and draw solutions from the past."

"Especially for primary children, igniting their curious minds is very easy. Demonstrating, making the topic interesting and by giving a personal touch by appreciating goes a long way. Recently when I was teaching patterns in nature, children tried several small activities, which were shown but also shared several other things they tried innovatively. Observing patterns in leaves, flowers, clothes made them look at patterns in a different way."

"I provide them free space and sufficient time to share their ideas and it was observed that students come up with interesting ideas. Activity-based teaching is done most of the time to concretise the abstract concepts, which helped to facilitate understanding, and hence increase the scope of participation and origin of new ideas."

"Giving the students space and scope for thinking and imagination, design a task that invites multiple perspectives and is open ended. Listen to students' ideas and respond positively. Provide space for group work, presentation and asking questions (not only to teachers but amongst themselves too), etc."

"With audio-visual aids, powerpoint presentations, subject enrichment activities, project work, etc. conduct various activities in class to teach a concept in a fun way. Our school conducts enhanced learning activities (dance, drama, tabla playing, skating, music, taekwondo) where students can further nurture their skills in a particular field."

The analysis of various themes showed that most of the teachers applied various strategies ranging from learning by doing to developing a democratic classroom

environment to focussing on learner centric pedagogy and providing them diverse ways for working as well as for expressing themselves for nurturing creative potentialities of learners. These were aligned to the various contemporary discourses on pedagogy that are based on various recent paradigms of learning and intelligence. This indicated that the teachers find a strong association between experiences that offer opportunities for independent and imaginative thinking, divergent thinking, questioning and critical thinking, autonomy in terms of pace at which learners work, conducive and accepting environment, etc. that are essential for the development of creative potentialities in children. They acknowledged that there may be chance factors in a learner's life that may create such opportunities for a child but in context of schools, these opportunities need to be created for the learners.

Findings and conclusion

The teachers' narratives reflect the ideas and initiatives that they apply in their classrooms. Thus, the study of their narratives to understand their perception of creativity and creative potentiality amongst children as well as various ways to nurture them led to the emergence of three themes. These themes as discussed above provided insights about teachers' perception about creative potentialities in their learners as well as the instances or anecdotes where they had witnessed its manifestation and the deliberate efforts in the form of various strategies that they used to nurture them. The responses and narratives in the three themes shared above substantiate each other to establish certain findings. It can be said that the teachers implicitly have the developmental perspectives of creativity and thus see it as a potentiality in every learner. The instances or anecdotes specified by them in their narratives show that they have a comprehensive idea of 'creative potentiality' as they associated it to diverse abilities in learners and not just a few abilities such as divergent thinking. Also, the teachers have quoted various processes that led to the nurturance of the potentialities, which shows their concern for the experiences that the learners should be given for nurturance rather than for merely assessing them. The responses in the last theme proved that the teachers employ a diverse range of strategies that they think would contribute towards nurturing the potentialities in their learners.

Thus, it can be concluded that the teachers' perceptions as gathered through their narratives are in sync with the ideas given in NEP 2020. The teachers see creativity as a potentiality amongst all learners that has been stated assertively in the policy too. The policy has recommended nurturance of high order thinking skills as part of the development of potentialities in children, which has been echoed in teachers' narratives. Further, the policy's focus involving children in experiential and holistic learning as well as on their social, emotional well-being is a concern for the teachers' too. The teachers' have expressed that continuous motivation and encouragement of the learners was essential for nurturing their potentialities. Hence, the vision and concerns in the policy regarding the potentialities and their nurturance amongst Indian children echoes in teachers' perception too. This is crucial as teachers' conviction is the foremost aspect for implementing or realising the vision of any policy.

Implications of the study

The teaching-learning process is closely linked to the way teachers perceive their learners with respect to their potentialities and also their perception and understanding about various constructs of creativity and its relation to the nature of the subject that they teach. Teachers should aim at cultivating students' curiosity and enhance their creative thinking abilities by providing an active learning environment through learning activities that involve implementation of their knowledge as well as creative processes. If students are engaged in

such activities in a meaningful way, it gives them the opportunity to work freely and to explore on their own without foreclosing the experience that will provide opportunities to nurture their creativity. Engaging students in these activities while learning will provide a start-up for evolving a creative process, hence these should be used as pedagogical strategies in classrooms to assist students in thinking creatively and generating original and novel ideas. Thus, students should be involved in creative experiences as early as possible so that they can question the validity of their previous knowledge and experiences about the phenomenon they observe in their surroundings and environment, find logical explanations and build conceptual change while they try to understand newer concepts. Students should be provided with freedom of expression and multiple opportunities to get engaged with these processes so that they can think creatively by generating new ideas, forming new connections or relations between various concepts. Though the potential for creativity amongst all students will be different, it can be developed by providing them equal opportunities and ample enabling experiences such as inquiry explorations, activities, experiments, project-based learning, exhibitions, etc.

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NEP 2020 and Environmental Studies (EVS) Curriculum

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Introduction[1]

The National Curriculum Frameworks, based on the National Policy on Education, provides guidelines for the curriculum, pedagogical approaches and teaching learning material for different subjects across all stages of school education in India. The new National Education Policy (NEP 2020), rolled out recently, is the third policy in India since independence and it seeks to envision an education system by revamping all aspects of education. It includes the structure, its regulation and governance aligned with 21st century education, including Sustainable Development Goal (SDG) 4, while building upon India's traditional and value system. NEP also paves the way for making appropriate changes or developing a new National Curriculum Framework (NCF), syllabi and textbooks in different subjects to enable our children to be at par with global standards aligned with the vision of 21st century education rooted in the Indian context. The curriculum and textbooks in different subjects are important vehicles for realisation of the objectives of the policy and it is crucial that these translate well in the curriculum framework, syllabi and textbooks. To enable these to be in tune with the contemporary local and global concerns, and for their effective implementation it is important to learn from our past as to what worked and what did not and why which can be done by understanding the challenges faced in earlier efforts. This requires reflecting on the existing curriculum and textual material of each subject so as to identify the prevailing concerns. This article focusses on the EVS subject, a mandatory curricular area at the primary stage as per NCF 2005 (preparatory stage as per NEP 2020), which has been analysed in the light of the concerns raised in the NEP 2020. The article can provide direction to the future exercises of curriculum and textbook development in this particular area.

For a critical reflection on the status, understanding and effectiveness of the existing EVS curriculum and textual material, it is necessary to peep into the historical aspect of the evolution of EVS as a subject in the Indian education system.

EVS: The background

The recognition of Environmental Studies as a separate subject at the primary stage by 'The Curriculum for the Ten-year School: A Framework' 1975, was the first step in the country after independence. It envisioned EVS to look at both the natural and social environment in the first two years of school education that is in Class 1 and 2. In Class

1 Note: The terminologies Primary Stage and Preparatory Stage are used for Classes 3 to 5 in the article. The former refers to the policy documents before NEP 2020 and the latter is as per NEP 2020.

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3 and 4 there was to be separate portions for social studies and general science termed as EVS Part 1 and Part 2. The National Policy on Education 1986 and National Curriculum Framework 1988 also propounded the same approach. The perspective that the child perceives the environment in a holistic manner while interacting with it and developing the skills and knowledge through building on past experiences, advocated an integrated structure of EVS curriculum, which both the NCF 2000 and NCF 2005 recommended at the primary stage. The latter, however, envisioned a thematic approach with an interconnected web of themes drawing insights from science, social science and environmental education holistically. Conceding the idea that it allows a better and deeper understanding of the concepts[1], the EVS curriculum is spirally woven around six themes (*Family and Friend, Food, Shelter, Water, Travel and Things We Make and Do*) and accordingly the NCERT textbooks in EVS include the content woven around these themes from Classes 3 to 5. Also, these textbooks mention that the learning opportunities that call for linking textual knowledge with the real lives of children through experiential learning in their environment, which ensure them to be in tune with the guiding principles of the NCF 2005, are included across different chapters of the three textbooks.

In consonance with the recommendations of '*Learning Without Burden*' (1993), the EVS curriculum reiterates the need to focus on *developing concepts and the ability to analyse socio-political realities rather than on the mere mugging up of information without comprehension*. Hence, direct information like set definitions and descriptions are avoided in the textbooks and learning situations that allow children to make meaning of their experiences for knowledge constructions are included. This requires them to be exposed to diverse experiences through a variety of sources within and outside the classrooms, ensuring their active participation and engagement in the learning process. This would require the teachers to use diverse pedagogical strategies rather than restrict to 'teacher centric' or 'textbook centric' teaching-learning processes.

NEP 2020 and approach to EVS curriculum

To recognise the considerations that will help to shape the EVS curriculum at the preparatory stage as per the concerns highlighted in the NEP 2020, it is important to explore the understandings behind the nature of this subject among different stakeholders especially the policy makers. EVS curriculum is an integration of Science and Social Science with infused aspects of environmental education along with art education, health and physical education, which are recommended to be integrated with this subject for reducing the curriculum load for children at the primary stage. Thus, it is imperative to explore not only the understanding behind the philosophy, concerns and strategies proposed under NEP 2020 vis-a-vis the aspects of multidisciplinary and integrated approaches to curriculum but also look at the pedagogical and assessment aspects that were proposed by the NCF 2005 and the new policy. In addition to these, it is essential to reduce the curriculum load to the core essentials, which is not just a concern of the new policy but has also been highlighted by different policy documents since the last many decades. The sections below throw light on the recommendations of the NEP 2020 on these aspects and to what extent these were incorporated in the EVS curriculum and the textbooks based on NCF 2005. The analysis provides insights into the policy makers and the curriculum developers across the country, engaged in the development of national/state curriculum framework.

Nature of EVS as a subject

There is a lack of clarity with regard to the nature of Environmental Studies as a

subject due to which, different functionaries and policy makers in states developed misconceptions that led to a percolation of a misconstrued idea to school level in many of the states. Some states like Delhi conceived EVS as Environmental Science and introduced Social Science, as a separate subject with its separate textbook at the primary stage. Many other states, like Delhi, have also introduced Environmental Education as a separate subject in addition to EVS, although EVS has integration of Science and Social Science with an infused component of Environmental Education (EE) as per NCF 2005 and the Supreme Court judgement (2002) on compulsory EE subject at all levels of school education. Till date, many educationists also consider EVS as Environment Science or Environmental Education and use these terms interchangeably. So there needs to be a thorough clarity on not just these terms but the epistemological stance behind it as it has large implications for the EVS curriculum.

It is evident that the New Education Policy (2020) does not mention Social Science or EVS categorically at the preparatory level. This raises the question; can we do without Social Science at the preparatory stage or how do we bridge the gap of Social Science curriculum that is the expectations to be accomplished through its teaching learning at the preparatory stage. If we carefully observe, the NEP 2020, very strongly emphasises on equity, inclusion, character building, socially desirable behaviours, indigenous knowledge systems besides integration of art education, environmental education and value education at the preparatory stage, which have strong repercussions on EVS curriculum. Hence, the curriculum frameworks at the national or state levels, currently being developed, need to take cognizance of this to offer a clear and coherent stand for the future discourse to allow an enabling EVS curriculum for our children.

Linkages in EVS curriculum and multidisciplinary and integrated approach under NEP 2020

It is a well-established fact that children in early grades do not compartmentalise knowledge but learn holistically. The integration of knowledge from diverse areas not only eliminates overlaps among different subjects but also helps children learn and develop holistically. The NEP 2020 focusses on the multidisciplinary and integrated approach across sciences, social sciences, arts, humanities, and sports for a multidisciplinary world in an age appropriate manner to make education **holistic** and fulfilling to the learner while ensuring the unity and integrity of all knowledge. The multidisciplinary and integrated approach of different subjects, such as sciences, arts, humanities, and sports as proposed by the policy is a significant step in this direction.

Different studies (Dogra, 2013; Kaur, 2019; Sharma and Devi, 2012) acknowledge that the current EVS curriculum and textbooks reflect the integrated and multidisciplinary aspects. The theme-based syllabus is arranged in a manner that draws the concepts rooted in different disciplines. The examples given below clearly depict the multidisciplinary aspect of the curriculum and accordingly the textual content of all the textbooks is also in line with this.

EVS Syllabus Class 3	
Theme: Water	**Key concept/issues (subject that it/these entail from)**
	• Storage of water in earlier times (History) • Sources of water (Geography) • Saving water, judicious use of water, water conservation • (Environment) • Properties of water (Mathematics and Science) • Unequal distribution of water (Political Science)

Fig. 1. Multidisciplinary nature of EVS **curriculum**The syllabus of EVS has appropriate linkages and is structured in a manner that the child will revisit certain concepts and themes with the varying level of difficulty and complexity as they progress from one class to the next. A similar approach to linkage of EVS curriculum is reflected across stages when the themes move spirally establishing interconnectedness from early grades to primary and to upper primary levels. The integrated aspect further reflects the EVS curriculum as the textbooks include content that not just blurs the rigid boundaries of science or social science but also depicts appropriate inter-thematic linkages within and across Classes 3 to 5 to facilitate a connected and interrelated understanding for holistic learning. So, instead of the compartmentalised concepts, themes and subjects,an integrated curricular material facilitates connection between the pre-existing and the new knowledge of the learners. Some examples from the existing curricular material are cited below from Class 3.

It is an established fact that any exercise of curriculum reform can only be effective with the help of teachers who are not only proficient but also have the zeal to take it forward. As per the studies (Dogra, 2013; Kaur, 2019; Sharma and Devi, 2012), the teachers lack appreciation and find it difficult to comprehend the inter-linkages due to their narrowed perspective of subjects having rigid boundaries. Devi and Sharma (2012) indicate the prevalence of such perceptions among the early grade teachers as well. Further, Devi and Sharma (2017) observed that a majority of the early grade teachers were unable to comprehend and appreciate the integrated and thematic aspect of EVS. A study by Kaur (2019) further strengthened the observation that the teachers are unable to identify the skills, concepts, issues and sensitivities embedded in EVS textbooks, which have their origin in different subject areas especially Social

Science and Science. Majority of the teachers find it difficult to understand the presentation of the text, hence fail to identify the inter-thematic linkages between the chapters. They fail to appreciate the thematic approach and the underlying linkages for the organisation of the textbook chapters as it made it difficult to comprehend the linkage with the EVS syllabus. It is obvious that though the EVS curriculum and the textbooks reflect the integrated and multidisciplinary aspect quite well yet there is a lack of clarity and appreciation among teachers for the same.

Curriculum load

To promote holistic and well-rounded development of individuals equipped with the key 21st century skills, the National Education Policy (2020) puts emphasis on bringing reforms in curriculum as well as pedagogy across all stages by moving away from the culture of rote learning to *'learning-how to learn'*. Further, the policy seeks to give ample space to art, and health and physical education in the school curriculum through a cross curricular approach with a

Theme (sub-theme)	Family and friends (relationships)	Family and friends (plants and animals)	Water	Travel
Key concepts/issues	Different eating practices in the family. Cooking and gender/caste roles in the family	Basic ideas of plants used as food; food from animals. Parts of plants that are eaten	Use of water in cooking (steaming, boiling, mixing), washing, drinking	Food From field to mandi, from market to house

Fig. 2. Inter-thematic linkages in EVS curriculum

special emphasis on sports while strongly advocating reduction in curriculum load and development of only core competencies for other subjects.

Although, the present textbooks include child centred learning opportunities aligned with the learning outcomes spelled out for each class, the ground reality reveals that teachers find it difficult to give adequate time and space to the physical and hands-on activities in the class as the chapters are too many and some are too lengthy and text heavy to be covered (Kaur and Sharma, 2017) in an academic session. Another study by Sharma (2019) shows that teachers' main focus is on syllabus completion instead of concept acquisition through constructive child participation in teaching learning activities. It is, therefore, so crucial for the new National and the State Curriculum Frameworks (in progress) to throw some light on these concerns while addressing the aspect of curriculum load. Overall, in view of all these concerns and the NEP recommendation to focus on accomplishment of the core essentials for different subjects, a fresh perspective on the curriculum development is an emergent need of the hour.

Pedagogy and assessment in EVS

It is important to understand the pedagogical practices recommended for EVS teaching learning and assessment in the past especially by the NCF 2005 to know what worked and what did not, so as to direct the future exercises of EVS curriculum development. The educational aims envisioned under NEP 2020 focus on all round development of individuals equipped with 21st century skills, which are not only cognitive but nurture character building based on courage, resilience, and scientific temper, compassion, empathy and creative imagination with sound ethical and moral values. To realise these aims, it seeks making education more "*experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centered, discussion-based, flexible, and, of course, enjoyable*", with positive changes in pedagogical approaches. Emphasising on development of 21st century skills as envisioned in the rubric of 5Cs that is Critical Thinking, Creativity, Collaboration, Curiosity, and Communication, the new policy puts the teacher at the centre of the fundamental reforms of the education system. As the aspiration of these skills can only be translated through a motivated and competent teacher in the classroom discourse using cross-disciplinary and interdisciplinary thinking.

A study by Sharma (2016) highlights that there is a strong link between the understanding of a subject and its pedagogical practices. A number of studies Dogra(2013), Kaur (2019), Kaur and Sharma (2017), Muralidhar and Sharma (2019), and Sharma and Devi (2012)) reveal that a majority of the teachers are not clear about the integrated and thematic approach to EVS and fail to internalise the philosophy of EVS and eventually the textbooks based on NCF 2005. This makes it imperative that they lacked an understanding of the pedagogical dimensions as well. Sharma (2018) pointed out that teachers have a limited understanding of Environmental Education and similar trends are also observed globally. Further, it highlights that some studies show that subject specialisation affects the teacher's competency on EE and teachers with science background are more likely to be familiar with EE. The component of Environmental Education is majorly addressed through EVS at the primary stage therefore it establishes a linkage of the academic background of the teachers with poor transaction of the interdisciplinary subjects like Environmental Education and EVS. The experimental study by Kaur (2019) on pre-service teachers substantiates this further when it states that the teachers are unable to identify the skills, sensitivities, issues and concepts embedded in a particular theme/chapter of the current EVS textbooks. Devi and Sharma (2012) too endorse the same that the teachers teaching

early grades fail to appreciate the integrated aspect of the subject due to their inability to identify and comprehend the issues, concerns and skills of EVS.

Thus, it is clear that teacher performance is directly affected by their knowledge of the subject and their competency in terms of the pedagogical skills. The teachers, from diverse backgrounds with varied academic abilities, for being trained in a specific discipline, lack the desired knowledge in EVS as it is an integrated and interdisciplinary area. The limited understanding of the subject of EVS translates into poor transaction.

The NEP 2020 emphasises on exploratory and experiential learning, which requires tapping different resources beyond textbooks and classrooms. The guiding principles of NCF 2005 also emphasise on enriching *the curriculum so that it goes beyond the textbook*, and the learners get ample opportunities to interact with the diverse sources of learning. However, it was observed that there is a mismatch on the practice level due to various factors at play. The study by Sharma (2018), mentions that teachers both across the government and private schools use conventional teacher centric pedagogical practices. It was observed in the study of Kaur and Sharma (2017) that there is a mismatch between the intent and the pedagogical practice at the ground level. A majority of the teachers put no significant efforts to go beyond the textbooks as most of the time children were asked to do activities, such as surveys or experiments at home. Further, the pedagogical practices of the teachers are confined to using only textbooks with merely *'literal translation of the text'*. They use textbooks as the only resource and transact it in a traditional manner ignoring the hands-on' and 'out of school' activities.

Sharma (2018) in the study illuminates that the teaching learning of EE is more successful by going beyond the textbooks and occurring in the real life setting,which facilitates the emotional connection with the environment. Although the textbooks provide a good scope for engaging children under constructivist philosophy, the teachers failed to comprehend the spirit of constructivism. The study by Kaur and Sharma (2017) highlighted that there is a mismatch in the intended objectives behind the textbooks and syllabus based on constructivist philosophy and

the pedagogical practices adopted by the teachers in the classrooms, which are highly teacher centric and conventional in nature. Sharma (2019) points out that the teachers complain about the lack of time to conduct the activities, based on constructivist philosophy, mentioned in the textbooks. According to them, completion of the syllabus consumes a lot of their time as the length and number of chapters is too many to be covered in one academic session for the EVS textbooks. Hence, it may be concluded that the textbooks, despite being child-centred, integrated, inquiry-driven, experiential and discussion-based are quite challenging for the teachers with respect to their pedagogical translation.

National Education Policy (2020) talks about assessment in terms of having a robust system of continuous formative/ adaptive assessment to make a shift to more competency-based. It also promotes learning and development for the students. Aligned with the learning outcomes specified for each subject of a given class, assessment '*as*', '*of*', and *for*' teaching learning will be done at all levels. Moreover, the policy notes the importance of children's holistic education and development, which will be well reflected in the *holistic* progress card. The policy envisions it as "*a holistic, 360-degree, multidimensional report that reflects in great detail the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domains*" that will form an important link between home and school to actively involve parents in the educational process. The primary purpose of assessment will indeed be for learning to help teacher and student, and the entire schooling system for consistently optimising the learning and development for all students. In tune

with the same, the EVS textbooks offer opportunities for divergent pedagogies to enable the learners *explore, observe, draw, categorise, collaborate, empathise, express,* etc. thereby, focussing on the process skills and abilities. Bansal (2017) highlights the non-synchronisation between the inquiry-oriented curricula and assessment patterns adopted by the teachers at the ground level. Further, Sharma (2019) gives it an impetus when it points out a huge gap in the expected and practiced, pedagogy and assessment practices in schools. It mentions that the conventional teaching learning makes it inevitable for the teachers to adopt the same approach for assessment. Further, there is high accountability pressure on the teachers to provide better results, which often leads to teaching the text, rote memorisation of facts, and paper pencil tests.

Findings

Based on the above, some important aspects emerge, which can help the future process of EVS curriculum and textbook development.

There is a lack of clarity with regard to the nature of Environmental Studies. It is perceived at par with Environmental Science, Environmental Education or Science. The different schools of thought prevalent are hugely responsible for the confusion in its understanding as a subject. Moreover, the NEP 2020 does not mention Social Science at the preparatory level categorically. This can have strong repercussions for conceptualisation of the new EVS curriculum.

The EVS curriculum and textbooks despite being child-centred, integrated, multidisciplinary, inquiry-driven, experiential and discussion-based, though fundamentally in tune with the NEP 2020, are quite challenging for the teachers to transact in their classrooms.

The teachers, right from the early grades, are unable to comprehend the expectations (objectives, learning outcomes) of EVS and identify the learning (concepts, skills, sensitivities, issues) embedded in any EVS content. They follow a conventional approach to teaching learning, which is largely textbook oriented and far from the inquiry-based and experiential learning. It is due to their inability to comprehend the aspects of constructivism, multidisciplinary, integrated, etc., reflected in EVS curriculum and textbooks. Their subject specific academic backgrounds and training lacking in interdisciplinary and constructivist paradigms further add to this. So, incompetence on both the content and pedagogical skills of the subject hampers the teaching learning of EVS.

The NEP 2020 has a huge concern for reducing the curriculum load and recommends focussing on the core essentials of all subjects to create more scope for sports, art and vocational areas. The existing textbooks are observed to be voluminous for the content to be covered in one academic session. The demand for completion of syllabus adds to teachers' strain, which further compromises their quality of teaching learning.

The assessment exercises in the EVS textbooks, integrated with the text, are in tune with the objectives of EVS learning and the principles of assessment '*as*', '*of*', and '*for*' learning. These are in accordance with the NEP 2020, which calls for holistic learning and assessment of children. However, the information and memory-based conventional teacher centric pedagogical and assessment practices at the ground level require a relook into the implementation aspects with innovative multi-pronged strategies.

Conclusion

It may be concluded that the ideas of EVS and Environmental Education as per policy law are construed from top to bottom, which led to their faulty implementation at the ground level. Further, the teacher performance is directly affected by their knowledge of the subject and their competency in terms of the pedagogical skills. The teachers, from diverse subject specific backgrounds with varied academic abilities, lack the desired

multidisciplinary knowledge and pedagogical skills needed for its effective teaching learning in EVS. The limited understanding of the subject and poor transactional abilities translate into poor transaction. Furthermore, it is clear that teachers trained through a constructivist approach in their trainingwere found to facilitate their students for developing the understanding of environmental concepts, issues and concerns whereas those trained through a conventional approach cannot be expected to realise the pedagogical skills under constructivist approach enshrined in the EVS curriculum and textbooks. Therefore, despite the textbooks being constructivist philosophy, embodying experiential, child-centred, integrated, inquiry-driven and discussion-based, are pedagogically translated effectively.

Suggestions

It is important that the curriculum frameworks at the national or state levels, currently being developed, need to take cognisance of the above to offer a clear understanding for the future discourse to allow an enabling EVS curriculum for our children.

The NEP 2020 does not mention Social Science categorically at the Preparatory Stage. However, keeping in view the objectives of Science, Social Science and EE and in the interest of children's learning and development, a judicious policy stance needs to be adopted by the National and State Curriculum Frameworks (NCF/SCFs) that are underway. Also, clarity needs to be provided with regard to introducing Environmental Studies and Social Science at the preparatory stage as separate or cross cutting subjects.

A collaborative approach to curriculum development for different subjects at different stages may be adopted to maintain smooth linkages across different stages.

The key or non-negotiable policy decisions must be identified and guidelines for ensuring their implementation may also be put in place. The states need to comply with the same while aligning their teaching learning materials with them while enjoying the flexibility to make them contextually relevant.

The interdisciplinary and multidisciplinary aspects and promoting higher order skills through experiential and activity-based learning, prevalent in the current EVS textbooks may be sustained, as the same is proposed under NEP 2020.

A rigorous effort for addressing the concern of NEP 2020 on curriculum load and reducing it to core essentials is needed. In this context, a fresh perspective to EVS curriculum development and identifying its core essentials needs to be prioritised.

It is obvious that any curriculum review exercise does not reach the grassroots levels until the teacher education reforms are made simultaneously. Hence, there is need for synchronised efforts towards planning of the curriculum, textbooks and teacher education programmes for the successful implementation of the new curriculumreview exercise based on NEP 2020.

Teachers' training should enable them to broaden their understanding of school subjects and look at them in a holistic manner and not just as a body of cold facts.

The classroom teaching learning cannot improve until the assessment/examination pattern is revised and the teacher training (both pre-service and in-service) is strengthened and improved simultaneously. The teachers need to be provided with training through the approaches such as multi/inter-disciplinary, inquiry-based, exploratory, projects, etc., that they are asked to practise in the classrooms. The in-service and pre-service courses on pedagogy of EVS and EE, handbooks and other digital resources must be updated and made available to equip teachers with appropriate knowledge and skills for improving their in classroom teaching.

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Teacher Education In India Viewed Through The Lens of National Education Policy – 2020

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Abstract

The current National Educational Policy was announced, passed by the Union Cabinet and implemented in 2020 after almost a year long debate on its draft, which was made public in 2019. The policy is revolutionary in outlook as it claims to bring great changes and breaks the stagnation by transforming school education system from 10+2 to 5+3+3+4 with the addition of three years of Early Childhood Care and Education (ECCE), integrated teacher education programmes, establishment of PARAKH, NTA, Higher Education Commission and many more new initiatives. School education is the foundation of the robust education system of the country and teacher education is the heart and soul, which prepare and pump teachers into the school education system. This paper reflects the perspectives of in-service teacher educators teaching in various teacher education colleges in Delhi with regard to the provisions and reinvention of teacher education as envisaged by the NEP 2020. A total of 30 teacher educators teaching in Delhi-based teacher education institutions were approached purposively. An open-ended questionnaire was administered using google form followed by an online interview with all the respondents to have cross questions and seeking clarity on their responses to the questionnaire. This paper presents the details of the study and its findings, which is encouraging but challenging and full of apprehensions as well.

Key Words: National Education Policy-2020, Teacher Education, Integrated Teacher Education Programme, Early Childhood Care and Education (ECCE), Elementary level, Secondary level, National Curriculum Framework

Background

The National Education Policy 2020 (NEP 2020), passed by the Union Cabinet on 29 July 2020, sets out the vision for India's new education system. The policy aims to transform India's educational scenario. NEP 2020 introduces a number of changes to India's existing education system. It aims to increase state spending on education from 3 per cent to 6 per cent of GDP. NEP 2020 prioritises many policy changes when it comes to teachers and teacher education. To become a teacher, a four-year Bachelor of Education will be a minimum requirement by 2030. The teacher recruitment process will also be strengthened and made more transparent. The National Council for Teacher Education (NCTE) has started working on the new National Curriculum

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Framework for Teacher Education (NCFTE) and the National Professional Standards for Teachers (NPST). Similarly, NCERT has initiated the process of developing a new National Curriculum Framework for School Education (NCFSE) in the light of NEP 2020. The policy aims to ensure that all learners at all levels of school education are taught by motivated, highly qualified, professionally trained, and well-equipped teachers. With all those fancy points, a lot of people have shown their apprehensions about the implementation of the policy at ground level. In view of the mixed reactions towards the policy, this small research was planned, which focussed to observe the reactions of the respondents towards some chosen areas covered by NEP 2020.

Objectives

This study was conducted to find out the perspectives of in-service teacher educators regarding teacher preparation programme in specific and school education in general with the following objectives:

1. To study the perception of teacher educators about NEP 2020.
2. To study the teacher preparation programme envisaged by NEP 2020 for ECCE.
3. To study the teacher preparation programme envisaged by NEP 2020 for elementary schools.
4. To study the teacher preparation programme envisaged by NEP 2020 for secondary level.

Design of the study

The researcher used the phenomenological research approach for this study. Phenomenology is the study of peoples' perception of the world as opposed to trying to learn what really is in the world (Willis, J. 2007). The focus is thus on understanding from the perspective of the people being studied. The purpose is to identify the phenomenon through how it is perceived by the participants in the situation. It means, gathering information and perceptions and representing it from the view of the research participants. Phenomenological approach is based on the paradigm of personal knowledge and subjectivity and emphasises the importance of personal outlook and interpretation. It seeks to describe rather than explain and to start from a perspective free from hypothesis or preconceptions. Existing literature (Kvale & Brinkmann 2009; Marshall & Rossman 2010) coincides in that the phenomenological approach addresses the phenomenon profoundly, providing a space of opening for the informants to express their experiences in detail, approaching reality as faithfully as possible. The detailed descriptions or elucidations brought by the participants in the profound-phenomenological approach should be as representative of experienced reality as possible. The main focus of the phenomenological approach is the description of the meanings of phenomena (Rubin and Rubin 2012). This study was conducted as an attempt to know the opinions of the teacher educators regarding NEP 2020. As a whole, the study followed the design of a descriptive survey and is qualitative in nature.

Population, sample and sampling technique

The population for the present study is the teacher educators of Delhi-based teacher education institutes, teaching students of various courses like B.Ed., M.Ed., B.El.Ed, D.El.Ed., etc.

The researcher used the purposive or deliberate sampling method. Purposeful sampling is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest. A purposive sample is a non-probability sample that is selected based on the characteristics of a population and the objective of the study. The sample size for the present study was 30 teacher educators chosen purposively from various teacher education institutes situated in Delhi.

Data collection and analysis

The researcher administered an open-ended questionnaire to 30 teacher educators/ student teachers across Delhi using Google form. After the collection of responses on the questionnaire, semi-structured interviews were conducted online to verify the responses and to get to know the things that couldn't be shared by the respondents in reply to the questionnaire.

Major findings

Objective 1: Perception of teacher educators about NEP 2020

In response to the first question of the questionnaire regarding the participants' opinion about the NEP 2020, there were varied opinions. They are being presented and discussed below.

Popular responses

'This is a landmark policy in the entire education history.'

'The new education policy promises to be more flexible and student friendly. The focus apparently has shifted to vocation more than rote learning.'

'NEP 2020 is a shift towards progressive education and it aims for universalisation of education from pre-school to secondary level.'

'A comprehensive document in which there is due emphasis on ECCE, foundational literacy and access to education at all levels.'

Interpretation and discussion

Looking and analysing the above responses qualitatively, it can be interpreted that NEP 2020 is said to be a good policy and considered as a visionary policy by many. Respondents have talked about the aspects of the NEP 2020 that make this policy better than the previous ones. The positive aspects include that this policy focusses more on the vocational part rather than theory. Other than that, it has talked about lessening the burden of the students as subjects and that learning has to be more playful and interactive rather than rote memorisation. This policy has shifted away from rote memorisation to learning by doing. Also, this policy aims at the universalisation of education from pre-school to secondary level, which makes it stand out as compared to other policies as universalising the education means that it ensures education for all, independent of the level or background of the learner. This policy provides more flexibility in the education system and it is more student friendly. In a nutshell, this policy is visionary and aims to be more flexible and has components required for the better development of the learners and enhanced education that is more experiential and not rote memorised. NEP 2020 focusses on the holistic development of the learner. These points can be seen reflected by the popular responses received from the participants too.

Popular responses

'The policy seems to be a move towards privatisation especially in the case of higher education. A lot of schemes are mentioned, it needs to be seen what will be the enablers in implementing them.'

'An ambitious, promoting and a neo liberal policy in education.'

'Education seems to be more linked with the economics of the country.'

Interpretation and discussion

Looking and analysing the above responses, we can see that some teacher educators are of the opinion that the NEP 2020 aims at the economy hence it is more linked with the economics of the country. If we say in simple words, the NEP 2020 leads to the privatisation of education, especially in the case of higher education. There are many schemes, policies, ideas that are mentioned in the policy as a whole, but it depends upon the implementation of the policy. The respondents have talked about privatisation, it is being said that the NEP 2020 promotes privatisation in lieu of making the education

and the education system better, but there is also a concern about the mode of implementation. It shows that people are concerned about the issues of privatisation and economic issues related to education.

Popular responses

'It's a very good policy on paper. Hoping for it to be implemented accordingly.'

'I think the idea is quite nice, however what matters the most is its implication.'

'Good reforms in the teacher education field.'

Interpretation and discussion

Some of the respondents have thought of this policy as a visionary one, but they have also felt that the real effectiveness of the policy has to be established. This will be possible only after its wider implementation, though it looks very visionary on paper, it is still to be seen how it will bring major reforms in the education system. It is said that it will be revolutionary in the field of teacher education as well. Reforming teacher education would ultimately lead to the betterment of the entire education system. Though, it is still to be seen how it will be implemented and what changes we will see in education through this revolutionary policy. The responses show how people are concerned about the policy implementation.

Changes in teacher education after NEP 2020

The next question in the questionnaire seeks the changes NEP 2020 will bring in the field of teacher education. The most frequent responses were:

Popular responses

'There will be more focus on teacher education now. Substandard teacher education institutes will no longer exist.'

'If this policy gets implemented rightly, it may bring a huge change in terms of our current outcomes of learning. The government claims to work on teacher education more and have also introduced a variety of courses mandatory for teachers. Teachers may become more aware about the purpose of assessments, including hands-on activities and experiences in their classrooms.'

Interpretation and discussion

The respondents have considered that the field of teacher education will get better after the implementation of NEP 2020. The policy has focussed on the betterment of the teachers in terms of quality of teachers as they will become more competent in the subject matter. The practical work will increase even at the Ph.D. level. Also, student-teachers will have to be involved in field work. The standard of teachers will get better and the substandard teaching institutes won't have any place in the teacher education process. These moves will be revolutionary in terms of making the teacher education process up to the mark.

Popular responses

'Focussed teachers will be prepared in a four-year integrated teacher education programme.'

'It will be a combination of theory and practicum subjects. Focus will be more on activity-based learning wherein student-teachers will understand the importance of holistic development and integrated learning. Not only will education in a particular subject matter, but its pedagogy will be given equal importance. Since the course will be of four years, it'll give the student-teacher ample time and opportunity to understand child psychology, which will benefit them while engaging with students.'

'A four-year B.Ed. degree will somehow enhance the quality of teachers.'

'Role of teachers will change because they will be doing four years integrated B.Ed. where they will be given proper training to become a facilitator. Teaching will become the first choice instead of the last option.'

Interpretation and discussion

Looking and analysing the above responses, we get to know that respondents have talked about the NEP 2020 in terms of its move towards implementing the four-year integrated teacher education programmes. The respondents have talked about this four-year integrated programme many times and considered this as a revolutionary step in the betterment of teacher education in India. This will save time as well as make the teachers more competent and help them to learn better and then implement better as it will be integrated and will have theory as well as practical components. Increasing the time of the course by four years, will be an opportunity for the student-teachers to learn better and also to understand each and every component involved in the teaching-learning process hence making them competent teachers. This will also help the entire education system to have competent teachers as only the people who are genuinely interested in teaching will enrol in the course and get trained and not the people who get enrolled for the sake of getting admission and doing something and those who consider teaching as the last option. The students would not be spending four years in such a hectic course, which won't actually be of use or interest to them. Instead only those who are fond of teaching and who want to serve the nation by imparting education will get enrolled and become teachers. This will prove to be a boon for the children, because teachers are the pillars of the education system. The students get their education the way it is given by the teachers and if the teachers are not competent enough, it makes the children suffer and the entire education system as a result. The implementation of the four year teacher education courses will only attract students who have teaching as their first choice for a career.

Skill-based education and use of educational technology

Questions related to NEP 2020 have included components like use of educational technology, learner-centred classroom and collaborative learning. This is not only ensured by the curriculum of teacher education programmes, but also by the recruitment process as well. The policy advocates experiential learning, which makes education interesting and more meaningful. Skills are enhanced only by experiential learning and that's why the components of skill-based education are included in the teacher education programmes. NEP 2020 talks about the increased use of technology in education, be it school education, higher education or teacher education. Use of technology can be increased efficiently only when teachers are capable of using it in a way that helps in enhancing the learning experience in the classroom. ICT has been introduced as a subject in teacher education programmes to deal with the issue and it is already prevalent in the programmes running right now, but implementation of NEP 2020 will only make it better and help us all to be able to stand in this competitive world as a global citizen.

Some pertinent questions have also been raised by the respondents, which are required to be answered or to be taken care of by the policy makers, implementers and our education system. Look at the following response:

Popular responses

"Along with the other points that have been mentioned, add one more very important aspect which is the use of ICT in education. Using technology in education has great advantages as it assists the teaching-learning process. For that also, a teacher has to be educated in the sense of how to use technology effectively. For this, do we have enough funds? At senior secondary levels, NEP 2020 has recommended that there would be vocational subjects as well but where will we get resources from?'

"We already have programmes that include components like experiential learning, collaborative learning and learner-centred approach. Then what is the need for

introducing more courses? Instead, make the existing courses better in terms of resources, curriculum and upgrade them with inclusion of new concepts".

Interpretation and discussion

The responses received from the participants regarding the use of educational technology and ICT in education show that they understand that in the present scenario ICT is inseparable from the education system. But the gap between the haves and have nots is very big in our country, so while implementing any technology it is always needed to bridge the gap so that resource crunch may never hamper the urge to get educated. Few respondents are even concerned about the ways of imparting collaborative learning means and methods. They wish the authorities to be very sensitive about the feasibility of these methods for all at the time of implementation.

Objective 2: To study the teacher preparation programme envisaged by NEP 2020 for ECCE

The open-ended questionnaire followed by an interview with the respondents fetched the following important and most frequent responses.

Popular responses

'If the policy is implemented in an effective way, we can see positive results in the coming years.'

'Nursery Education/NTT will play an important role for ECCE.'

'Teachers will be provided proper training and will be treated at par with teachers at other levels unlike anganwadi workers who are mostly working unofficially in poor conditions.'

'A lot of focus is not given to early education but NEP 2020 recognises the primacy of early education.'

'Currently, the quality of the teachers engaged at ECCE levels are not that good because there are programmes like NTT and they are offered by many private institutes. There's nobody to monitor or supervise what they teach, how they get training and they are engaged with small children, which is not good. Small children are like moulding mud, they get moulded however they are shaped by the pot maker. We feel that NEP 2020 will bring about a change in the condition of the teacher education programmes as it has recommended a four -year B.Ed. programme for all the teachers.'

'Teachers who work in anganwadis work in miserable conditions as they don't have funds, they don't get enough salary and in return, they work in the same manner, which is not being serious towards their duties. After the implementation of NEP 2020, this situation will be better hopefully.'

Interpretation and discussion

Looking and analysing the responses above, we get to know that the respondents are concerned about teacher education for ECCE level and they believe that this will make the education process better. Earlier, more value was given to the elementary and secondary level teacher training as compared to ECCE. We can see how the *anganwadi* workers work in miserable conditions and the nursery teachers are usually recruited without any experience and proper formal training. They are provided teaching opportunities even if they have done a six months crash course from any institution, they get to work in schools without any experience or field work. What can we expect from teachers like these? Are they really going to do justice with the new learners? The answer is no. In many schools, there are first generation learners in nursery classes and if untrained teachers will teach them, would the children be able to learn up to the level they need and deserve? After the proper implementation of NEP 2020, this problem will be solved as only well qualified and experienced teachers will be recruited even at the ECCE level. This policy understands the value of quality education irrespective of the level, whether it is ECCE, elementary or secondary level. If learners get quality education from the very beginning of the process of learning, it will be very

beneficial for them in the coming years. Some of the respondents also said that the picture will be cleared after the implementation of the policy whether changes can be seen on the field or not, but we must have a positive outlook. Also the emphasis on the upliftment of *anganwadi* and *balvatika* workers is also discussed by some of the respondents, which shows the awareness and sensitivity of the people for every one providing services in the field of education. The broader categorisation of these concerns is as follows:

(i) **Well-qualified teachers:** After the proper implementation of NEP 2020, well-qualified and trained teachers will be made part of the system from the very beginning as teachers won't be recruited without a valid certificate or diploma in ECCE. Those who are already in service will also be trained for better output.

(ii) **Child-centred pedagogy:** NEP 2020 favours making the entire education system child-centred, be it the classroom atmosphere, language of instruction, pedagogies, etc. A lot of importance is given to the students of ECCE level because this is the foundation of the learner. It has to be sound enough to make learners good enough to withstand future situations and higher levels of education.

(iii) **Need of regular monitoring, supervision and inspection:** Some of the respondents advocated to have in place a regular monitoring, supervision and inspection for having better results and to achieve the set learning outcomes at all levels of education. Without constant supervision and inspection, and also objective, unbiased and corruption-free, it seems impossible to reach the desired goal of education for our generations.

Objective 3: To study the teacher preparation programme envisaged by NEP 2020 for the elementary level

To achieve this objective the open-ended questionnaire followed by an interview with the respondents were used. These fetched the following important and most frequent responses with regard to teacher preparation for elementary education.

Popular responses

'It would become more child-centred. Teacher education programmes will allow specialisation in the education of gifted children.'

'More indigenous languages will be promoted to create a sense of nationalistic identity. Mandatory Hindi or mother tongue at this level can create challenges for students who will be required to shift to English as the medium at a higher level'

'Not all the existing teacher education programmes educate teachers to cater to language and cultural diversity. Since it is an aim of NEP, teacher education needs to focus on it.'

'One of the most important and talked about components of NEP 2020 is multilingualism and how it glorifies the concept of multilingualism in Indian classrooms. It has recommended to provide education to learners in their home language at least till Class 5 and if possible then up to Class 8 but English is a language, which is universal and required at each stage all over the world and if children do not get exposure to English at their primary levels/ stages of learning then how will they be able to cope up with the situation? Does NEP 2020 have any monitoring committee for that? How does it ensure that children who have learnt in their home language will be able to stand out in the world without knowing English?

'We can see that the scientific attitude of children is being talked about in NEP 2020; that implementation of this policy will make learners more logical and rational than just being a product of rote memorisation. The coming years will be full of logical opportunities and this policy will help children stand out globally. For this, NEP has also focussed on the teacher education component because to make the learners learn, first the teacher has to be educated. NEP 2020 caters to that understanding and talks about adding this component in the curriculum of teacher education programmes.'

Interpretation and discussion

Analysis of the responses revealed that respondents agree that NEP 2020 focusses more on child-centred education. It focusses on discovery and activity-based learning. Teacher education for elementary level is more dedicated towards experiential learning as suggested by many progressive philosophers and educators. Ideas like child-centred education, discovery learning, activity-based learning and experiential learning, look very promising on paper, but need to be put into practice. It also caters to multilingual teachers and context specific approaches in teaching-learning and training. Much importance is given to the context of the learners in the classroom. Though some respondents are also of the opinion that courses/programmes like B.El.Ed already existed, which had all the recommendations given by the NEP 2020, including the progressive pedagogy and provision of the best training to the teachers in terms of being child-centred and activity-based; they are just going to be upgraded. Hence, there won't be much change after its implementation but some new aspects have definitely been added in the policy, which are going to make education and the education system better.

A very important hunch related to English language teaching is kept by a few respondents that mother tongue education once implemented may hamper the English language proficiency of the students and lessen their future prospects. This concern is to be addressed very sincerely so a conducive environment for all languages can be established.

Analysis of the response regarding the scientific attitude revealed that people are concerned about the inculcation of scientific attitude in the students, which is why they are talking about the concern of NEP 2020 about the importance of developing scientific attitude in children.

Objective 4: To study the teacher preparation programme envisaged by NEP 2020 for secondary level

On questions pertaining to the teacher education programme for secondary level as envisaged by NEP 2020, which happens to be the fourth objective of this study, the following popular responses were obtained.

Popular responses

'Teacher education will include grounding in sociology, history, science, psychology, early childhood education, foundational literacy and numeracy, knowledge of India and its values/ethos/art/traditions, and more.'

'There will be multidisciplinary study, greater critical thinking and flexibility in choices of subjects.'

'NEP 2020 will be a life changing policy for the secondary and senior secondary levels as it makes education more holistic and vocational. The focus of the study is more skill oriented than theoretical. In the current scenario, students have to choose a stream where there are a particular set of subjects and students have no choice but to study them. After the implementation of NEP 2020, students will have a wide variety of subjects where they will have the autonomy to choose the subjects that they want to study and being the subject of interest, students will be able to learn according to their pace and their levels. Also, it will make learners more confident and increase their competence as well because they won't be pressurised or disinterested. For that, teacher education will also have to work accordingly and the curriculum and recruitment process has to be taken care of to implement the recommendations of the policy properly to achieve the objectives of the NEP.'

Interpretation and discussion

The statements of the respondents reflect that this policy is being considered beneficial and fruitful in terms of teacher education for the secondary level. The shift has been there from a fixed and strict pattern of the subjects and what the children want to learn, to more flexible and towards vocational learning. The teacher education part will include subjects like sociology, history, geography, art and culture. They will praise the ethos/morals/

learnings of Indian culture and hence inculcate them into the students as well. For learners to be more confident about choosing a particular subject or stream, it is of utmost importance that the teachers be available as a support system. For the teachers, there has to be a strong teacher education from the best teacher education institutes and programmes in order to provide the best education. The NEP 2020 provides the opportunity to have a multidisciplinary approach. For that appropriate teacher education is important and hence, it is given a lot of attention. The teachers will also be made competent to promote critical, logical and rational thinking among the students. Making FYITEP (Four Year Integrated Teacher Education Programme) compulsory by 2030, will attract only the interested and dedicated people, who have teaching as their first career choice, towards the teaching profession.

According to the responses received during the research, it can be seen that many of the respondents were of the opinion that only talking is not enough. Most of them believed that only implementation of the policy will help us know better about the original condition of the teacher education and teacher education programmes. It is not appropriate to say anything right now without any concrete evidence. Some respondents were of the opinion that we already have existing teacher education programmes and they can be enhanced instead of introducing new programmes or policies.

Conclusion

Most of the teacher educators believe that NEP 2020 is a revolutionary policy and it will be a step towards changing the whole scenario of education. The concerns, which almost all the stakeholders have shown about the policy is regarding its implementation. No doubt the policy document is appreciated, but all are worried about the acceptance in the actual system. The very fact that the policy involves a child-centred approach towards education is a welcome point. It has also mentioned about the universalisation of education and the more the access to the education increases, the more will be the success rate. The research got varied responses from the respondents. While most of them believed that it is a visionary and revolutionary policy, few were of the opinion that it will deteriorate the quality of education and will lead to privatisation of education. This policy will make education costlier and hence would lead to the fact that education can only be accessed by the elite. It is contradictory that on one hand, the policy is talking about the universalisation of education and on the other hand, it talks about the privatisation of education. Although privatisation will be more prominent in higher education, this fact is arguable. In a nutshell, we will find that there are many hopes attached with this policy and its implementation. As far as the general views about teacher education are concerned, most of the teacher educators are positive about the approach that the NEP 2020 is bringing forward and they feel that it will cater to the issue of quality of teacher education in the coming years. If the policy gets implemented properly then it will bring huge changes in the process of teacher education. The policy has talked about raising the standard of the teacher eligibility tests in terms of both content and pedagogy and now substandard institutes will no longer exist. Also, the qualifications required to become a teacher have been set and the future teachers have to be in possession of those degrees or certificates to meet the essential requirements. The recruitment process is also going to be polished, and interview and classroom demonstration will be a compulsory part of the recruitment process, which will help in getting the best brains and most competent teachers in the system. The curriculum will also be revised and the provision of a four -year integrated B.Ed. programme has been recommended, which if implemented properly will provide the best teachers who can make

teaching-learning a great experience for the other stakeholders of education. Overall the responses reflected lots of hope in terms of proper and successful implementation of the policy. Notably almost everyone had words of praise for the policy along with a hope for its proper implementation to bring reformative changes in our education system.

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Preparedness and Understanding Required for the Attainment of Foundational Numeracy in India

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Abstract

With the announcement of the National Education Policy 2020, several new structures and concerns in the Indian education system got highlighted. One such concern is on strengthening the mathematical abilities of citizens of India. The policy emphasises on the development of mathematical skills from early years onwards. This paper takes cognizance of the urgency related to the development of 'foundational numeracy' and proposes introducing 'bhaashayi ganit' in the foundational years. Talking mathematics in a contextualised manner through stories may help strengthen foundational literacy and numeracy. The article also shares the sensitivity required for understanding the term 'numeracy' beyond numerical know-how and its relevance in developing favourable mathematical dispositions..

Much of what we know from the status, challenges and quality of education in our country, it is evident that a lot of focus needs to be given to the foundational years of learning as many delicate shifts and linkages happen during these years. Many national reports and policies have expressed concerns in bringing young children to the school system, retaining their interest, and making curricular experiences meaningful for them. The report 'Learning Without Burden' (GOI, 1993) states that children were not 'dropping out' but were being 'pushed out' of elementary school due to disconnect between school curricula and real-life expectations. Although for the past few years we are witnessing an increase in the enrollment levels of children in the school systems (NAS 2017), we are far from sustaining their interest and achievement levels. Survey reports such as National Achievement Surveys (NAS) conducted by NCERT and the Annual Status of Education Reports (ASERs) have time and again reminded us of the low mathematical levels among our children. Far too many children either leave schools or fail to demonstrate basic competencies in mathematics up to Class 3. The National Curriculum Framework 2005 also remarked, "a majority of children have a sense of fear and failure regarding mathematics. Hence, they give up early on, and drop out of serious mathematics learning."

It is, perhaps, with this exigency that the newly announced National Education Policy 2020 (NEP) stresses on establishing strong foundational numeracy in the pre-primary and primary classes. It emphasises foundational literacy and numeracy as priority domains for smooth induction and continuation of children in the education system. It states, "the very highest priority of the education system will be to achieve universal foundational literacy and numeracy in primary school and beyond by 2025. The rest of this policy will be largely irrelevant for such a large portion of our students if this most basic learning requirement (i.e.,

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reading, writing, and arithmetic at the foundational level) is not first achieved" (MHRD, NEP 2020 p.8). The policy clearly holds foundational literacy and numeracy as building blocks for the academic success of the children.

In this paper, an attempt has been made to understand the term 'foundational numeracy' so that a holistic yet targeted approach can be adopted for attaining foundational numeracy among young minds, as expected in NEP 2020.

Wide spectrum of understanding foundational numeracy

Since there is no universally agreed definition attached to the term 'numeracy', the term attracts various viewpoints. This paper delimits its scope in detailing the varied viewpoints associated with the term 'numeracy'. However, some key references are stated here to give a glimpse of its wideness, scope and interpretation. Each explanation differs from the other minutely yet profoundly.

To begin with, we take the one which is used most widely. The Programme for International Student Assessment (OECD 2019) uses the following definition of numeracy as an objective while forming questions for their assessment tests, "Numeracy encompasses a range of skills from basic arithmetic and logical reasoning to advanced mathematics and interpretative communication skills." In most of the large-scale assessment documents and manuals, early numeracy skills are centred on the recognition of numbers, knowledge of counting and performing simple arithmetic operations of addition and subtraction. In this document, emphasis is given on the levels of attainment of numerical know-how by the end of pre-primary or primary stages.

Mathematics educationists take a much broader view of the mathematical proficiency that needs to be developed in the initial years. Several studies consider early numeracy beyond procedural numerical know-how. The fact that children may know counting but fail to apply them is an indication of poor mathematical proficiency. Knowing numbers alone with little understanding of the relationships that connect them is not of any use. Gelman and Gallistel (1978) were probably pioneers in listing the development of numbers, quantities and relations among young children. Children have innate abilities to counting. They build relationships among the sequence of verbalising number-names, one-to-one correspondence and the principle of cardinality. These relations are essential elements in the scheme of counting. Other researchers such as Butterworth (2005) and Durand et al. (2005) added that for school children, comparing the magnitude of different numbers also becomes a crucial aspect of mathematical ability. There are others, for example, Geary & Brown (1991) who purported that knowing number facts, establishing number relations and making associations between numbers contribute to the mathematical affinity of the children. Similarly, Nunes, Bryant, Sylva, & Barros (2009) advocate the establishment of logical thinking, understanding of conventional counting systems and making sense of simple number-word sequences in primary classes. They consider providing meaningful contextual learning experiences as the basis for the development of a child's early mathematical proficiency. And, others urge on the principles of logical thinking and relate numeracy to the child's growing abilities to understand and make relational statements among numbers (refer to Smith, 2002). They visualise the emergence of numeracy skills well before schooling and believe that these skills continue to develop and strengthen throughout life by a variety of informal and unstructured experiences.

Tracing footprints in earlier Indian policies

In the Indian education policies and commissions, the term 'foundational numeracy' first appears in the NEP 2020 but its need was felt long before. Although

the term doesn't come out in the earlier policies as explicitly as it does through the NEP 2020, the fact that basic mathematical proficiencies are a must to be acquired by all children up to a certain grade has been mentioned in the earlier policies as well. The tone of expression was, however, subtle and not so emphasising.

The National Policy of Education 1986 expressed concern on the inculcation of basic numerical knowledge at the primary stages. It stated that to achieve skill-based literacy, the curriculum of mathematics for primary school students must include numbers, four operations and basic geometry. Thus, basic mathematical abilities are subsumed under 'literacy'. Subsequently, the policy launched minimum levels of learning (MLL) to be achieved in one language (mother tongue), mathematics and environmental studies for Classes 1 to 5. These MLLs served as guidelines for teaching and learning at the primary level as they defined the minimum learning outcomes in the form of competencies to be attained by the end of a particular grade. Defining MLLs gave mandatory directions for ensuring the attainment of certain mathematical competencies. The competencies listed under MLL by the end of primary grades included identification of basic number sense, idea of quantification and geometric thinking. The aim of MLLs in mathematics was more towards strengthening the numerical procedural know-how in the primary classes. There was an emphasis on helping children perform basic arithmetic operations and recognition of shapes.

Under the National Curriculum Framework 2005, a dedicated document expressing the status and recommendations for teaching-learning mathematics was launched. In the Position Paper on Teaching of Mathematics, NCERT urged on shifting the focus of teaching mathematics from narrow goals, dominated by procedural know-how, to higher goals aiming at 'mathematisation' of a child's thinking. The emphasis was on achieving clarity of thought, ability to handle abstractions and adopting problem-solving (NCERT, 2006, pp.1-2). The framework suggested that children should understand the basic structure of mathematics, use abstractions to perceive relationships, visualise patterns, reason out things and argue the truth or falsity of mathematical statements. It also cautioned that having functional know-how in mathematics must not be taken as a goal of learning mathematics. Doing mathematics in the real spirit would encompass possessing the right attitude for problem-solving and systematically approaching it.

Adopting child-centred approaches for teaching basic elementary mathematics to young children was the prime agenda of this document. In primary and pre-primary classes, children must learn with concrete objects to understand the connections between logical functioning used in their everyday lives with mathematical thinking. Children must be led to making sense of numbers, use composition and decomposition methods to understand the structure of numbers, play with patterns, measurement and data handling to make a mathematical sense of things around them. The position paper had put strong emphasis on relating mathematics, at least at the primary level, to the social-cultural milieu of the child. Every child must be encouraged to look out for instances of doing mathematics around the child's surroundings, and also recognise that the non-formal ways of doing mathematics has substantial effects in reducing the fear of the subject. The curriculum should be enriched with a variety of activities, tasks, experiential anecdotes of using mathematics in everyday dealings. Accordingly, arithmetic operations should be introduced contextually to be followed by the development of language and symbolic notations to help the learners form a meaningful link. For introducing a sense for numbers, the Position Paper on Teaching of Mathematics (2006) iterates that children enter school with a set of intuitive and cultural ideas about numbers and simple operations. Therefore, at this stage

emphasis must be given to the development of numbers sense and skills of estimation and approximation instead of solely depending on standard algorithms of addition, subtraction. Teachers must begin by acknowledging the maths learnt by children from their out-of-school contexts.

Although in the Position Paper of Teaching Mathematics there is no explicit mention of the phrase 'foundational numeracy' or 'early numeracy', the recommendations made by the framework are in cognizance to the spirits of promoting a profound mathematical sense among the primary children. The suggestions made in the framework are elaborate enough to be taken as guidelines for encouraging young minds towards mathematics.

'Foundational numeracy' in National Education Policy 2020

The NEP 2020 is the first document that explicitly highlights 'foundational numeracy'. The second chapter of this education policy, titled, '*Foundational Literacy and Numeracy: An Urgent and Necessary Prerequisite to Learning'* draws attention to the urgency of promoting basic literacy and numeracy skills from the early stages of a child.

To understand what the policy means by 'foundational numeracy' we need to first dig out the essence of 'education' that the NEP 2020 conveys. The policy accentuates, "With the quickly changing employment landscape and global ecosystem, it is becoming increasingly critical that children not only learn but more importantly learn how to learn" (MHRD, NEP 2020, p.3). The purpose of education, therefore, must be to move towards minimally required content with the acumen to learn and think critically. It is imperative to strengthen the abilities to solve problems, be creative and work in a multidisciplinary manner. The policy envisions the citizens of India to be innovative, adaptive and creative to imbibe themselves to varied challenges of life. Such an aim can be achieved through a pedagogy that is driven by the tenets of experiential learning, holistic and integrated presentation, and is inquiry-based, discovery-oriented, learner-centred, discussion-based and flexible outlook.

Particularly for the learning of mathematics, NEP 2020 recognises mathematics and mathematical thinking as indispensable ingredients for the future of India. One will have to start thinking mathematically from early years onwards. This does not mean increasing the content of mathematics. It means promoting the competencies of logical thinking, computational skills, reasoning, argumentation and decision-making capacities. The policy recognises the need to sow the seeds of mathematical thinking from the foundational stages of a child.

The policy states that schools and ECCE centres have laid little emphasis on foundational numeracy. School curriculum moves so quickly for young learners that all the learning in schools gets limited to rote memorisation. Schools are providing mechanical academic training to the learners and have completely ignored the foundational material essential for learning (MHRD, NEP 2020, p.15). The policy suggests that the principle of learning mathematics must be to provide a solid foundation in counting, arithmetic, mathematical and logical thinking, problem-solving and being creative so that mathematical learning becomes more enjoyable for learners.

The policy urges ensuring attainment of 'foundational numeracy' by the end of the primary stage by all students. It states that to overcome the learning crisis happening in India, children need to be equipped with the concept of numeracy and literacy, which most children lack when they enter school. The ability to read and write, and perform basic operations with numbers are necessary and indispensable prerequisites for all future schooling and lifelong learning. Once a student falls behind on foundational numeracy, all other areas of mathematics suffer making it difficult for the learner to catch up later. The fear, at times, becomes so huge that it emerges as a major reason

for not attending school or for dropping out altogether.

Adequate preparation needs to be done to develop basic numeral skills in early childhood education. NEP 2020 proposes setting up a National Mission on Foundational Literacy and Numeracy by the Ministry of Education. The purpose of this body will be to identify stage-wise targets and goals to be achieved by 2025, closely tracking and monitoring the progress of the same and speeding up the entire process. Plans are being proposed to provide schools with an adequate number of local teachers or those who are familiar with the local languages so that the children can learn the language they are comfortable with. It also appeals for ensuring the pupil-teacher ratio to be under 30:1 so that teachers can focus on all the learners and can achieve the goal of foundational numeracy and literacy well on time and in an effective manner. Some other ways for ensuring an early achievement can be one-to-one peer tutoring, which can be taken up voluntarily and as a joyful activity under the supervision of trained teachers. The policy recommends that if "every literate member of the community could commit to teaching one student/person on how to read, write, perform basic operations, it would change the country's landscape very quickly" (MHRD, NEP 2020, p.9). All the states and UTs are being suggested to establish innovative models to foster peer-tutoring and volunteer activities as well as launch other programmes to support learners in attaining foundational literacy and numeracy.

Explicitly addressing the concerns of foundational numeracy

Although the NEP 2020 recognises foundational literacy and numeracy as essential building blocks for a child's further attachment to school, both these terms need to be understood separately as the challenges and attainment of early literacy are quite distinct to those attached with early numeracy.

In terms of literacy, Ball, Paris, & Govinda's (2014) survey conducted on developing countries shares some significant insights related to the transition of children from their mother tongue to the language used for instruction in schools. They state that children who come from high-income or mid-income families face less trouble in making this transition. Children who have an environment of reading and writing at their home are already adequately acquainted with the acts of reading and writing before entering the formal school system. This means that such children do possess an 'orientation' towards the processes of formal reading and writing. Communities where children read storybooks or are engaged with the print media, may not face literacy issues.; The efforts are more with children who come from deprived sections. First-generation learners or children from print-deprived sections have to put in extra effort. These children get opportunities of getting 'orientated' to the simple acts of reading and writing only after they enter school. It is only after they enter the formal school structures that they get to avail the opportunities to 'start learning' to read and write. Thus, in terms of literacy, the social background of the children has a significant effect on the levels of attainment.

In terms of numeracy, the challenges of transition from out-of-school experiences to in-school learning are quite unique. During the pre-school stage, children gain experience in counting and familiarisation with number-words from their home. They get to know the counting skills, which become a quick and handy tool for doing simple addition and subtraction. However, to handle bigger numbers, the reliance shifts from counting to building a sense of numbers. This shift is the prime tenet of 'numeracy'.

Children gather simple traits of counting, adding and subtracting by observing their elders or by getting themselves engaged in everyday mathematically involving tasks. During the pre-school period, they get to learn a counting sequence. Based on it they

work with numbers. While being in school, the scope goes beyond simple counting techniques to familiarity with large numbers, which calls for a sophisticated numerical sense. For instance, children learn to recite number names through nursery rhymes. At first, they learn to pronounce number words rhetorically and gradually get familiarised with number words as an extension of their vocabulary. Through nursery rhymes, stories and songs, they learn to recite numbers in a sequence. 'One, two, buckle my shoe', 'ek, do, teen, char, aaj shani hai kal itwaar; paanch, cheh, saat, aath, yaad karoge saara path' (एक, दो, तीन, चार, आज शनि है कल इतवार; पाँच, छह, सात, आठ, याद करोगे सारा पाठ). 'Ten little fingers, ten little toes, Two little ears and one little nose'. While reciting number words, children get to know the sequence in which these need to be spoken. Then, there are incidental usage of numbers, such as 'how old are you', 'what is your house number' and such. Although such recitals may not contribute much mathematically, they help in remembering and recalling number names as a connected string of words. Later, these experiences contribute to the learning of counting.

One possible reason for low numeracy could be disconnect between number recitals and the essence of numbers. Children learn the skills of counting separately and their understanding of quantities and number relations is taken up independently. Children often learn numerical procedures without understanding their conceptual basis. Overemphasis on repetition of numbers without understanding the principles behind them leads to a dislike towards the subject from an early stage. Piaget's theories were centred on the premise that children develop an understanding of quantities and relations before knowing what a number is. He claimed that children's abilities to form logico-mathematical relationships become strong criteria for doing mathematics. According to Piaget (1976) and others, the development of logical thinking helps in the development of numbers. The principles of conservation of numbers, classification and seriation contribute to synthesising number sense.

Additionally, there are also social and cultural diversities that make the transition from out-of-school mathematics to school mathematics challenging. For instance, Walkerdine (1990) quotes how mothers of certain working-class families use the phrases 'more/no more' rather than 'more/less'. For this community, largeness in quantity is expressed in a contra-positive manner, indicating a negative association with the term 'more'. This example indicates that even in early mathematics, the term 'more', 'less', 'no more' can have different meanings for children. Often such subtle differences go unnoticed by curriculum makers who assume mathematics to be a 'culture neutral' subject. In the early years, mathematics seeps in through recreational engagements and by indulging in elementary computations in schools, there emerges a huge gap in experiences related to mathematics. Children's early understanding of dealing with numbers is grounded in their everyday experiences, gathered from their surroundings, interactions with adults and from their social and cultural contexts.

We, however, also know that mindless recreation of contexts and over-emphasis on activities in the name of providing concrete experiences also leads to a detachment to the subject (Gandhi & Garg, 2018). Concreteness may not always lead to meaningfulness. Often it is observed that the games and activities undertaken in the primary classes add little to the development of disciplinary aspect. In the name of 'enjoyment', the essence of mathematical thinking gets distorted. "The teaching of mathematics has to be such that ideas and concepts, even though they can, to begin with, be related to the experiences of the child and are useful in the transactions of daily life, must move away from everyday experiences as the ideas themselves are inherently abstract and ideal constructs" (Dewan, 2019). School mathematics is not the same as home mathematics. Efforts will have to be made to put abstract mathematical

ideas in easy-context driven situations, but with extreme caution to not dilute the mathematical essence while doing so.

Thus, in the early years, the transition from the way mathematics is done at home to the way it is dealt with in schools has to be handled with utmost care and sensitivity. This transition has been universally identified as a tumbling stage for many young children. Rampal & Subramanian (2012) accepted that designing elementary mathematics curricula for schools, in as diverse and iniquitous circumstances as is in India, is indeed a challenging task. Further, a large number of our children enter school not being familiar with the formal instructional language owing to which they struggle to meet the basic numeracy levels. The language used in school mathematics is quite distinct from that used in daily dealings (Dewan, 2019). We have to be sensitive to the language and the cultural aspects of the child, but along with umpteen dedications will have to be given to strengthening the epistemic roots of the subject.

Bhaashayi ganit (भाषाई गणित): A promising pedagogy for foundational numeracy and literacy

We agree that the seeds of thinking mathematically get sown at the pre-primary level. It is, therefore, important to understand what initiating reasoning abilities in young minds means and the pedagogy that may help in doing so.

Nunes, Bryant, Sylva, & Barros (2009) consider mathematical reasoning as a fundamental trait for better mathematical development. "Mathematical reasoning, even more so than children's knowledge of arithmetic, is important for children's later achievement in mathematics". They distinguish arithmetic and reasoning in the following way. Arithmetic or numerical ability, according to them, is 'learning how to do sums and using this knowledge to solve problems; whereas, mathematical reasoning is 'learning to reason about the underlying relations in mathematical problems they have to solve' and can include both additive and multiplicative reasoning. Promoting reasoning about mathematical relations should be the goal of the primary school curriculum. This conceptualises that mathematical development at early stages is not limited to dealing with numbers alone. It encompasses relations between numbers, processes of approximation of space, comparison of magnitudes, logical connections of statements and dealing with symbols. There is no doubt that processing numerical information is potentially crucial for the early development of mathematical abilities, and along with this, domains of handling shapes, space and quantities, and relations must be given due importance.

Although during the early stages children may not delve into rigorous reasoning skills, they must be inducted to perceive elementary connections between mathematical ideas and facts. At this stage, mathematical reasoning would implicate acts of confirming, reconstructing, generating, and reorienting. So, the teachers may ask children to confirm their responses and help children recognise the correct phenomenon. Even an act of agreement confirms the validity of the procedure. Reconstructing may involve relooking at things by paying attention to facts such as, when a child confirms 26 + 9 is 35, the child may be asked to solve (26 + 10) - 1 without doing any calculations, as a follow-up. This would involve noticing facts that were not noticed earlier. Similarly, in the acts of generation and reorientation, children can be led to investigate more facts and properties such as, will the shape change if its orientation is changed, or completing an incomplete figure, or co-joining shapes to create a new shape. Activities related to composing and decomposing shapes, as well as numbers, also prove fruitful.

A crucial point that needs to be mentioned here is that no reasoning can be initiated in a silent, non-participatory class. Children must be encouraged to talk mathematics from their early stages itself. At the foundational

stage, a lot of emphasis must be given to verbal mathematics or '*bhaashayi ganit*'.

Let me explain what I mean by *bhaashayi ganit* and how it can help in building a strong mathematical foundation at an early stage. First, the phrase should not be taken as a synonym or alternative to 'oral mathematics' or मौखकि गणति. Oral mathematics tends to get procedurally oriented. Often when teachers are asked to do oral mathematics in their classrooms, they tend to regard it as an alternative to written practice work. Children are seen doing the same work, which they would otherwise be doing in a paper-pencil environment. Oral mathematics is misunderstood for practicing sums quickly or for speaking out the memorised facts. Such practices need to be discouraged. Instead, we want our children to speak out their thoughts. We need to encourage our children to share their work, speak for themselves and participate as active actors. Children have great imagination powers and these must be strengthened in young years. Let children speak their mathematics. Instead of writing mathematics, children at the foundational stage must be encouraged to do mathematics by talking and imagining. For example, while listening to the story of three bears, children build imaginative figures of the bears, their sizes and three-ness. Many mathematical talks can be initiated within the story, such as comparing the shapes and sizes of the father-bear/child-bear to themselves, drawing the three bears, pretending to be the three bears and discussing the portion of food they would eat, laying the table for food and such. Let them perceive the connections between numbers and shapes and the world around them. Children must be able to look at the mathematical facts in an open environment with scope for talking and expressing themselves. van Oers' (1996) suggests that asking simple questions like "are you sure?" proves to be a powerful route for encouraging thinking in young children. Questions like "is this right", "how did you get this", "can you do it again", "what happens when I break this apart/ put these together", "how do we compare these two", "what is the smallest part/unit", "do you see anything repeating" help in reconfirming, reconstructing and generating relationships. In addition, open-ended talks at home and at school have the potential to increase the thinking abilities of children. In other words, when children get opportunities to speak and talk mathematics, they tend to learn better.

Imbibing *bhashaayi ganit* is a lot of work. It calls for an overhaul of orientation to our perception of teaching mathematics, especially at the foundational stages. Teachers as well parents will have to learn to 'talk mathematics'. A lot would depend upon them. Elders must start trusting the young minds. Listen and interpret what they are saying. Teachers must be oriented to initiate math talks with the young minds. Teachers at the foundational stage will be required to show both mathematical knowledge and an open attitude to listen to children. This calls for a change in the mindset of the teachers and parents. Widespread series of workshops and training programmes will be needed to induct elders (both teachers and parents) to accept the voices of young minds. They need to be oriented to listen and pose valid open questions to the children. Teachers and parents will have to be prepared to hold mathematical discussions with children.

It is hypothesised that *bhashaayi ganit* will provide a source for strengthening both, foundational literacy and foundational numeracy as children will speak and do mathematics. By verbalising their ideas in their own local language, children will gain confidence to talk aloud rather than getting burdened by the pressure of using correct, formal language. Use of local stories embedded within the local context in local language should be the key to *bhashaayi ganit*. Inculcating a habit of thinking, speaking and talking mathematics from an early stage will, in due course, develop into strong reasoning abilities. *Bhaashayi ganit* will also support aspects of experiential learning, visual thinking and development of good communication skills, which have

been termed as non-negotiable aspects of education in the NEP.

A need for teachers' orientation and preparation

Attaining foundational numeracy is incomplete without attending teacher education. The policy recommends constant support with the continuous professional development of teachers to impart foundational numeracy and literacy. The curriculum for primary teachers' education will have to be relooked to ensure inclusion of concerns and challenges related to foundational numeracy and literacy. Teachers' preparation and development programmes must cover updated pedagogies related to foundational numeracy and literacy. Of course, experiential learning, multilevel activity-based learning, cultural integration and using storytelling-based pedagogies will be an integral part of such curriculum. Challenges related to both literacy and numeracy in basic years will have to be looked at in tandem. The curriculum must be drawn from the researches done in these areas to help teachers understand the finer nuances in achieving foundational numeracy. There is a severe need to study the concept of foundational numeracy, its relevance in developing countries like ours. It would mean critically looking at certain existing pedagogies of early mathematics such as holding mindless activity-based classrooms, and overemphasis on recitation of number names. Teachers at this level will have to understand the challenges related to early education, handling transition from home-mathematics to school-mathematics, and incorporate 'discipline-oriented' early-childhood pedagogies.

There is also a need to bring out a focussed map of building foundational numeracy and literacy from the early stages, beginning from Early Childhood Care and Education. NEP 2020 envisages that before the age of five (that is, before entering Class 1), every child should attend 'Preparatory Class' or '*Balvatika*', which would have ECCE-qualified teachers (MHRD, NEP 2020, pp.7-8,). Teachers engaging at this level will have to undergo training relevant to handling very young children. It attempts to prepare an initial cadre of high-quality ECCE teachers in Anganwadis by training them through a systematic effort following the curricular and pedagogical framework. "All the Anganwadi workers who have qualified their 10+2 and above will be given a 6-month certificate in ECCE, and those with lower educational qualification will be given a one-year diploma covering early numeracy and literacy" (MHRD, NEP 2020, p.8).

NEP also recommends creation of a national repository of high-quality resources on foundational numeracy. These resources will be available to teachers on a single platform, Digital Infrastructure for Knowledge Sharing (DIKSHA). Technological aids will serve as an important medium to overcome the language barriers while acquiring foundational numeracy. Along with the national repository, the onus of creating learning resources should be shared with local teachers. Teachers should be encouraged to prepare resources keeping in mind the local needs, learner's need, and availability of resources in their schools. Local teachers should be encouraged to prepare their own resources as per their learner's need and context. Focus should shift from developing readymade materials to preparing contextualised content and material. In addition, the potential of community radio may be harnessed for connecting with the community.

NEP also encourages building school clusters for better management and sharing of resources. The scope of school clusters must be expanded to foundational years. Anganwadis, ECCE centres must be made part of school clusters of their region so that there is a smooth transition of content and pedagogy from pre-primary to primary and formal schooling. Likewise, the schools will get connected to the local needs ensuring no lapse occurs in the transition of children

across grades. Local schools and pre-primary centres can be affiliated to school clusters to share the responsibilities, and the existing schools can mentor these local schools. Pre-primary school clusters will help develop an effective social and emotional ecosystem for the child.

There is also a need to make an elaborate teachers' manual rather than textbooks. Manuals must talk about ECCE teachers' beliefs and mindsets, working skills, dealing with young minds, and creating sensitivity towards local issues. Since in the early stages most of the experiences are gained through local, community-based milieu, teachers' recruitment and training must also be the responsibility of the states/ zones and if possible, of panchayats. While preparing teachers, there is a need to focus on promoting multilingual instructions so that the prospective teachers can easily acquire the language of their learners.

NEP makes a strong appeal for improving the mathematical abilities of people right from early childhood. The intent will be successful if the approach taken in achieving the goal is more holistic. A lot of work in terms of teacher's preparation, parents' outlook and on early mathematics pedagogy needs to done. Educational institutes need to encourage good maths researches in understating and implementing foundational numeracy in our country. The approach taken to do so must not be centred on strengthening the numerical abilities alone. Early numeracy must be seen as a subset of early mathematics cognition.

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A Study of School Teacher's Perspective on National Education Policy 2020

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Abstract

The National Education Policy (NEP) released in 2020 has been the topic of much public debate ever since the draft of the same was circulated in the wider public in 2019. Responses to the policy have been mixed with the policy being hailed as a commendable reform on one side and critics questioning the policy for its commitment to universal and equitable education on the other. Much of these deliberations in the public forums, however, have been confined to discussions amongst academicians and scholars. Given that teachers are key stakeholders in the educational reforms, the present study attempted to find out school teachers' understanding of the NEP 2020 policy and their perception and opinion of the same. The research is broadly rooted in critical theory and the methodology is mixed methods research. Data was collected from 151 school teachers through the use of an online questionnaire. The analysis of the data is presented in four broad themes –'early childhood care and education', 'curriculum and pedagogy', 'assessment', 'governance and systemic issues'. The findings reveal varying degrees of agreement of school teachers on these aspects of the NEP 2020 policy. Triangulation with qualitative data highlights teachers' apprehensions with respect to implementation of the policy. Statistically, no significant differences were found in the opinions of government and private school teachers.
Keywords: National Education Policy 2020; mixed methods research; perception of school teachers

Introduction

National Education Policy 2020 (NEP 2020) was approved by the Union Cabinet on 29 July 2020. The long overdue policy that comes after a gap of three decades (the last national policy being National Policy on Education (NPE 1986), which was subsequently revised in 1992), is meant to address the challenges of the twenty first century. The process for the formulation of the policy had been initiated way back in 2015 and a comprehensive draft was proposed in 2019 on which the Government of India called for nationwide suggestions and comments. The draft policy generated an overwhelming response from the public. The final policy, which has a few major departures from the draft policy, was approved in July 2020.

The final NEP 2020 policy also generated mixed response from the academia and the public. While on the one hand several institutions plunged into organising webinars and online workshops to unravel the policy for the various stakeholders, academics took to writing in the print and social media besides broadcasting their opinions via videos

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and podcasts. The responses to the policy in this public discourse have been mixed with extreme opinions[1] being expressed in hailing the policy as a commendable effort or critiquing it on various accounts. The policy has been applauded for numerous initiatives prominent of which are: according 'emphasis on early childhood care and education'; 'mother tongue/local language as the medium of instruction'; 'focus on foundational literacy and early numeracy'; 'rearrangement of curricular structure'; 'pedagogical reforms' and for highlighting the 'need for digital education'. However, on the flip side of this commendation is the view of the critics who argue that the layered policy document is contentious. Hence, there has been little agreement on the effectiveness of the proposed reforms in the public discourse. To cite an example, the inclusion of the age group 3-6 years in the ambit of school education has been welcomed as commendable reform especially since the Right to Education Act 2009 does not include children in this age bracket; yet the critics allege that the policy's silence on the extension of the RtE 2009 in this context is ominous (Right to Education Forum, 2020). Critics have also urged that the policy be understood as being situated in the broader socio-political economic context and the commitment of the policy towards universal and equitable access to education be examined through a nuanced analysis of the various proposals made in the policy (Batra, 2020; Govinda, 2020; Jha and Parvati, 2020).

Much of the debates and deliberations made on the NPE 2020 in the public discourse have remained confined to views from academicians, scholars and intellectuals mostly in the field of higher education and teacher education. The absence of schools teachers' voice in this educational discourse is conspicuous. This phenomenon wherein school teachers are often looked at as 'mere implementers' of policy reforms is not new (Batra, 2005; Kumar, 2005).

Critical theorists (Apple, 1995, 2000; Giroux, 1988, 2001) argue that policy makers have sought and brought changes in the educational discourse in the neo-liberal era that have led to a drastic shift in the work of teachers. This redefining of a teacher's role has been referred to as 'deskilling' by Apple, wherein the teacher's task is reduced to execution of the bureaucratic policies focussing more on administrative affairs rather than on pedagogical concerns that surround teaching. Several Indian scholars (Batra, 2005; Kumar 2005; Sarangapani, 2003) contend that limiting the role of teachers to implementation of the policy reforms planned by higher placed bureaucrats further exacerbates the 'intellectual isolation' of the teachers (Batra, 2005). Though there have been a few empirical researches on understanding the work of teachers in the larger socio-political context, such as that by Majumdar, 2011, not many researchers have focussed exclusively on understanding the perceptions of school teachers on major educational policy frameworks.

Research objectives

Acknowledging the dearth of teachers' voices in the educational discourse, this research aimed to explore the notions of teachers pertaining to NEP 2020. The specific objectives of the research were twofold: to assess the understanding of school teachers about the NEP 2020 policy and to find out teachers' perceptions about certain key propositions in the policy pertaining to school education[2] 'early childhood care and education'; 'curricular and

1 This research study does not attempt to analyse or examine the National Education Policy 2020 critically, though key featutres of the policy have been identified and delineated on which the opinion of teachers was sought.

2 Even though other aspects, such as language, focus on Indian culture and ethos, provisioning for socio-economically disadvantaged groups; teacher education; philanthropic, private and community participation are considered to be important in terms of the policy recommendations of the same and data has been collected for these. The analysis pertaining to these have not been included in this paper by delimiting the scope of the study.

pedagogical reforms'; 'assessment'; 'school governance and systemic issues'.

Methodology

The research is situated in an interpretive framework as the intention of the researchers was to find out the understanding of the teachers and seek their opinions rather than testing a hypotheses (Flick, 2007). The subjective responses of the respondents are considered to be imperative in the interpretive research framework. The overall design of this study is mixed methods research (MMR) and the methodology and the analysis have been designed according to application of the MMR in an interpretive framework (Hesse-Biber, 2010).

To understand and analyse the school teachers' perception regarding NEP 2020, it was decided to use an online questionnaire as the tool for data collection. The questionnaire was chosen to collect data from a larger pool set and to give anonymity to the respondents so that they could give their candid opinions on the policy without any inhibitions (Lumsden, 2007). The questionnaire was hosted on Google platform and the link for the form was circulated via social media and personal contacts (including school teachers, mentor teachers, headmistress, principal and other administrators). The method of sampling was snowball and data from a total of 151 school teachers across India[3] was finally collected. Even though this method of sampling could lead to sampling bias, the above method of data collection was chosen to gain a wider reach in an economical manner.

The online anonymous questionnaire was divided into two distinct sections and hosted in such a manner that the respondents could go to the second section only after filling the responses in the first section. The first section included questions on the demographic profile of the respondents and open-ended questions on NEP 2020. The purpose of these open-ended questions was to seek the respondents' understanding and opinions on the policy. The second section of the questionnaire had questions based on the Likert type rating scale. Key thematic categories were identified on the basis of key proposals made in NEP 2020 and respondents' opinion in terms of agreement with those specific educational reforms was sought. The four key themes were, 'early childhood care and education'; 'curricular and pedagogical reforms'; 'assessment'; 'governance and systemic issues'. Specific recommendations from the policy were identified in these four clusters and put forth as statements to the respondents. Pilot testing of the questionnaire was undertaken to avoid any ambiguity in terms of language and for comprehension; subsequent to which minor language changes were made in the questionnaire. The reliability of the tool was statistically calculated. The Cronbach alpha came out to be 0.95 and since it is greater than 0.7, the tool is found to be reliable.

The analysis of the data was undertaken in a mixed methods framework. The data obtained through open-ended descriptive questions was coded using thematic analysis while the data sets from Likert rating scale type questions were subjected to quantitative analysis. Quantitative analysis was carried out by using both descriptive and inferential statistics employing the SPSS software. The process of qualitative analysis of the data was iterative wherein the coding itself was a part of the analysis (Miles and Huberman, 1994).

As the research is conducted almost one year after the NEP 2020 was made public, it is presumed that the teachers had enough time to reflect, discuss and deliberate extensively on various facets of NEP and its implications for school education. Hence, the research is significant in terms of reflecting the opinion of the teachers despite the delimitations of a limited data set of respondents and the methodological limitation of questionnaire as the tool of data collection.

3 Since the researchers are based in Delhi, majority of the sample (about 90 per cent) was from Delhi-NCR.

The analysis is presented thematically as per the four aspects of the policy on which teacher's opinion was sought. Each of these themes includes quantitative as well as qualitative data and an attempt is made towards data triangulation. A description of the sample is necessitated before discussing the findings and the inferences.

Sample

The sample for this study comprises 151 school teachers who are currently teaching. The demographic details of the sample are represented in Table 1.

Table 1: Demographic details of sample (N-151)

Demographic aspects	Sample distribution (N=151)			
Gender	**Male**	**Female**	**Others**	
	22 (14.6%)	129 (85.4%)	Nil	
Age (in years)	**20- 30 years**	**31 – 45 years**	**Above 46 years**	
	40 (26.5%)	62 (41%)	49 (32.5%)	
Type of school	**Government**	**Private**	**Alternate/Non-governmental**	
	63 (41.8%)	80 (53%)	8 (5.2%)	
Designation	**Primary**	**TGTs**	**PGTs**	**Administrators**
	85 (56.3%)	25(16.5%)	31(20.5%)	10(6.6%)
Teaching experience	Less than 1 year	1to 5 years	5 to 10 years	Above 10 years
	19 (12.6%)	27 (17.9%)	15 (9.9%)	90(59.6%)
Academic qualifications	**Graduation**	**Post-graduation**	**Other higher qualifications such as M.Phil., Ph.D.**	
	52 (34.5 %)	85 (56.2%)	14 (9.3 %)	

As is evident from the above table (Table 1) a majority of the respondent teachers were female. Most of the teachers were above 31 years of age and can be called 'seasoned teachers' since 70 per cent of them had a teaching experience of five years and above. Most of the teachers were employed as primary teachers though there is a significant number of PGTs and TGTs as well. The professional qualification mentioned by 60 per cent teachers was B.Ed., about 21 per cent specified B.El.Ed., 6 per cent chose D.El.Ed./D.Ed., and the remaining, chose 'any other qualification'.

A fair representation of teachers in government schools (42%) and those teaching at private schools (53%) is included in the sample. Since the number of teachers teaching in an alternate school or a school run by a non-governmental organisation, this set has not been included while making statistical comparisons between teachers as per the school they are teaching in.

The data set had only a small percentage of males (15%), therefore, the data has not been analysed from the perspective of gender differences. Deeming the school in which the teachers were teaching, government and private to be an important factor in a teacher's perception of the NEP 2020 policy, statistical comparison of the responses on this parameter was undertaken. To find out differences in the responses of the teachers as per the years of teaching experience and academic qualifications, qualitative analysis of the responses was undertaken.

Results and discussion

Before delving into the analysis on specific themes on which the opinion of teachers was sought, it is pertinent to discuss the primary sources from where the teachers got their understanding about the policy. On a multiple choice question that provisioned for the teachers to 'check' multiple options, almost half of the teachers 'checked' workshops and training sessions on NEP as the main source for information. This was closely followed by reading of the original policy (43%), newspapers (42%) and TV and social media (43%). A significant number of teachers (40%) also mentioned discussions with other teachers and stakeholders while some (31%) stated circulars from the administration as the source. It is interesting to note that while 43 per cent teachers mentioned original policy document as the source of information, only 23 per cent teachers have read the original document completely while 62 per cent reported having read the document partially.

In an open-ended question seeking the opinion of school teachers on the NEP 2020, majority (70%) were appreciative of the policy and used phrases such as 'good', 'need of the hour', 'great proposal', 'revolutionary', 'milestone'. A few teachers elucidated their responses: "NEP 2020 seeks to align itself with the Sustainable Development Goal of ensuring inclusive and equitable quality education for all in the next 20 years"; "NEP is a progressive policy given the need of the neo-liberal world. The foundations of the policy can be traced back to the NCF 2005 document"; "The policy is comprehensive, holistic, far-sighted and will certainly play a great role in the nation's future growth".

This affirmative response of the teachers to NEP 2020 was evident when asked to mention 'positive and negative aspects of the policy' since quite a few teachers did not specify any 'negative aspects'. A few teachers acknowledged that they needed to 'read more to comment on the negative aspects of the policy'. Moreover, some teachers stated their apprehensions about the policy in terms of the challenges of implementation particularly mentioning funding, infrastructural requirements and recruitment of teachers. When specifically asked about the challenges of implementation of the policy the responses of the teachers included funding; resources such as infrastructure (especially laboratories and digital equipment; inequitable distribution of resources); pedagogical concerns (huge student-teacher ratio; migration of children; shift to inter-disciplinary studies; mother tongue as the medium of instruction); teachers ('most teachers have a mind-set that is fixed rather than a growth mind-set'; training of teachers specially to be able to implement modern skills and technology; proficiency of teachers in mother tongue of the children); and lack of a clear-cut road map.

The next sub-sections discuss the findings of the teachers' responses on the specific chosen features of the policy, such as 'early childhood care and education'; 'curriculum and pedagogy'; 'assessment'; 'school governance and systemic issues'.

Early childhood care and education

NEP 2020 makes a compelling argument for early childhood care and education (ECCE) and advocates that children in the age group of 0-6 years be covered in this ambit. While proposing delivery mechanisms for the same the document emphasises on the need for 'play-based, activity-based and inquiry-based pedagogical approaches'. This focus of the policy on ECCE has been widely publicised especially in the wake of the Right to Education Act 2009 having excluded this crucial age group and denied a vulnerable category of children their fundamental right to education.

The analysis of the teacher's responses revealed that 92 per cent teachers agreed (with more than 50 per cent expressing a strong agreement and others agreeing somewhat) with the focus of the NEP 2020 on ECCE (Figure 1). Apart from the specific

responses of the teachers on their agreement/ disagreement (on a 5-point Likert Scale) with this feature of the policy, several teachers mentioned ECCE as a revolutionary feature of the policy in the open-ended questions and greatly welcomed it. However, a majority of teachers agreed with the focus on ECCE, but in comparison the number of teachers who were in agreement with the beginning of school at age three was considerably less (64%). This is an interesting finding since it means that even though most teachers are in favour of ECCE yet they do not endorse the beginning of the school at age three (26% teachers expressing their disagreement).

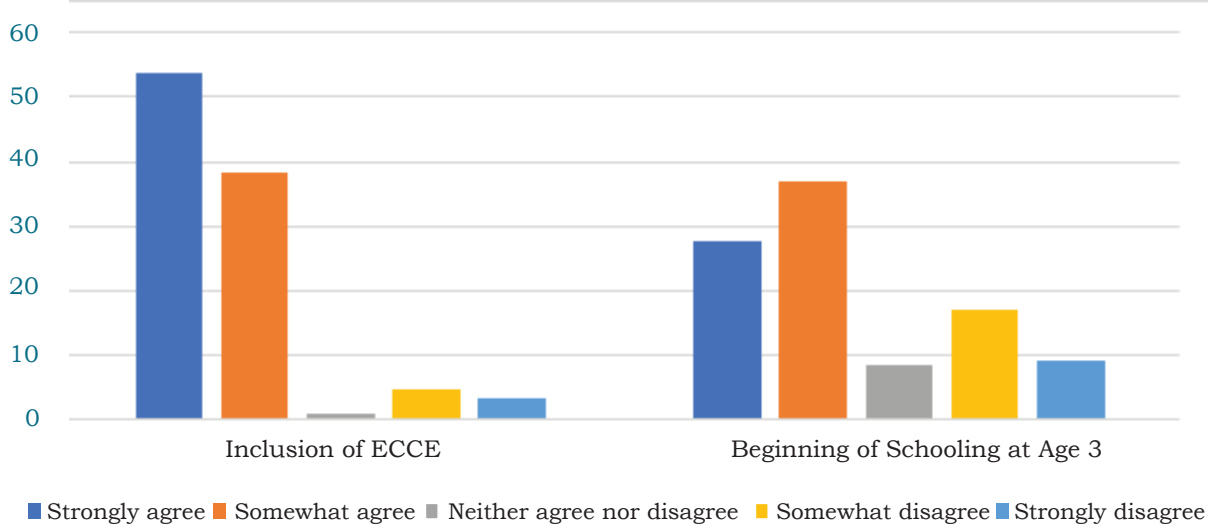
Curriculum and pedagogy

'Modification of the school structure from 10+2 to a new pedagogical and curricular restructure of 5+3+3+4' is considered a major delineating feature of the NEP 2020 policy. Another significant curricular and pedagogical proposition is 'attainment of foundational literacy and numeracy by making it an urgent national mission'. This aspect has also garnered a lot of public attention especially since the media has been harping on India's poor performance in the various international and national tests to measure learning outcomes. The policy also makes a strong advocacy for 'multi-disciplinarity' and suggests 'breaking down of hierarchies' by calling out for 'no hard separation between arts and sciences'; 'curricular and extra-curricular activities'; 'vocational and academic streams'. Apart from the above features, a few others were identified as important for seeking the specific opinion of the teachers on the same 'integration of vocational education'; 'introduction of activities pertaining to technology such as coding at Middle Stage'; 'move to semester system'; and 'flexibility in subject choices at secondary level'.

The responses of the teachers on these various recommendations have been presented as percentages in Figure 2. As is evident from the figure, there seems to be an overwhelming agreement with certain key aspects of the policy. The percentages of disagreement (strong and somewhat combined), is not beyond 10 per cent for any parameter. The agreement of the teachers for almost all aspects is corroborated by calculation of mean and standard deviation of the responses of the teachers (Table 2).

In continuation with the discussion on ECCE and schooling at the age of three, it is notable that compared to the other parameters the responses of the teachers to the modified structure of 5+3+3+4 are not overwhelmingly in agreement. Similarly,

Figure 1: Teachers' Perspective on NEP: Early Childhood Care and Education`

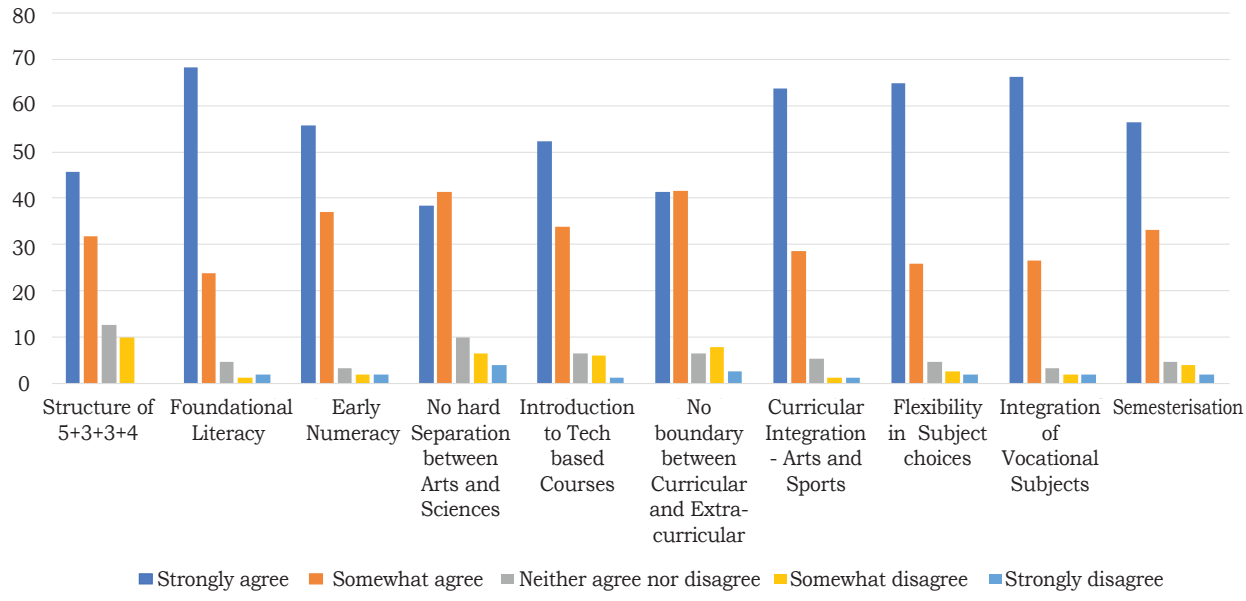


while 68 per cent teachers strongly agree with the focus on foundational literacy, 56 per cent expressed their strong agreement with emphasis on early numeracy (Figure 2). It needs to be noted here that a few teachers (about 10%) also mentioned foundational literacy as one of the 'positive aspects' of the policy in the open-ended question about the same.

The percentage of teachers strongly advocating for no hard separation between arts and sciences is 38 per cent, which is the lowest 'strong agreement' amongst all the other aspects. However, it is interesting to note that 65 per cent teachers expressed strong agreement with offering flexibility to the students in their choice of subjects. Integration of vocational subjects was seen as an apt recommendation (66% strong agreement), which was also expressed by a few teachers in open-ended questions. Arguments posed for vocationalisation were that it would help students to choose their direction of life early on, and hence, they would be able to realise their potential; it would help students to get better opportunities for employment and help in curbing unemployment; would change the outlook of the people wherein education will no longer be considered as a burden. A few teachers, however, were concerned that the emphasis on vocational education and provisioning for the same would "shift the focus to building of skill-set only" thereby putting "learning in the backseat".

Curricular integration of arts and sports was strongly agreed with by 63 per cent teachers while dissolution of boundaries between curricular and extra-curricular activities was strongly agreed with by 41 per cent teachers (Figure 2). It is imperative here to discuss the perspective of teachers regarding the 'focus on skills and practical knowledge' since this generated mixed response. Some teachers conveyed that this is a much-needed reform as evident from the following response: "The present education system is in shambles. The output is generations of students who can be best termed as paper tigers without relevant skills. Hence, NEP 2020 is a step to eradicate the problem of getting degrees without skills." A few other teachers were apprehensive as they believed that this could lead to dilution of focus on learning. A very interesting response in this context is: "…the manner in which 'coding' is presented as a mandatory and necessary intervention might find deeper roots and

Figure 2: Teachers' Perspective on NEP: Curriculum and Pedagogy



undermine the entire effort of building the area of mathematisation".

To find out differences in the opinion of teachers teaching in government schools and those in private schools, the data was subjected to statistical analysis and on the basis of results based on two-sided tests assuming equal variances with significance level 0.05, it is concluded that there is no significant difference between the responses of government school teachers and private school teachers (Table 2).

Assessment

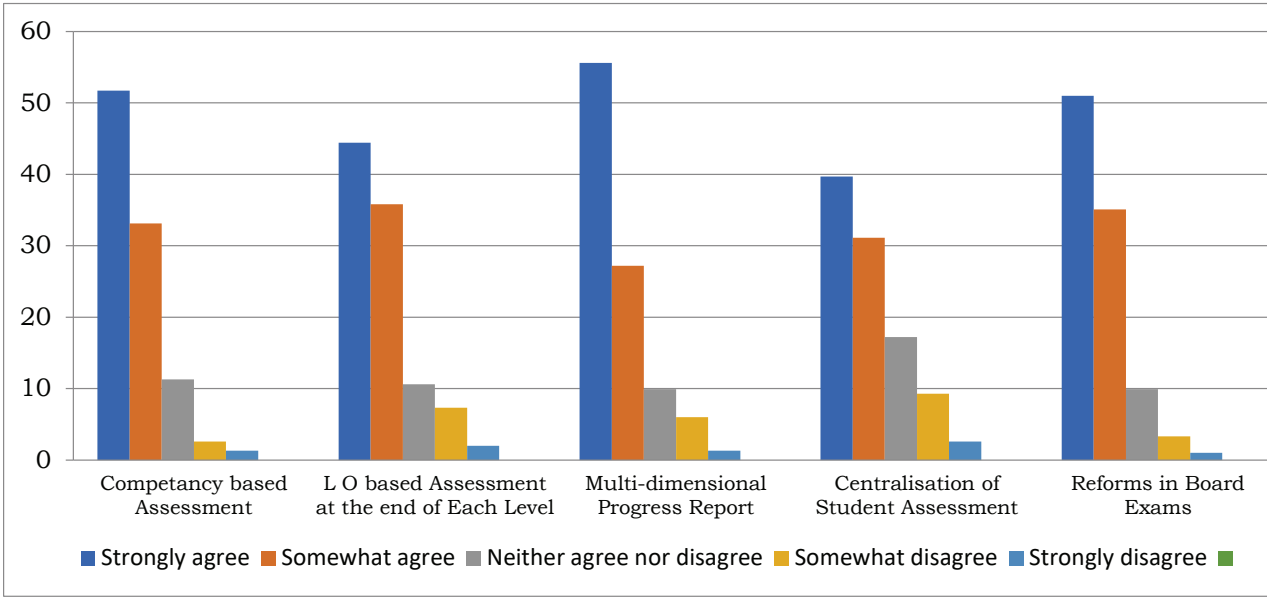
The policy seeks to 'transform assessment for student development' through various measures, such as 'shifting to more competency-based modes'; 'testing for achievement of basic learning outcomes at the end of Classes 3, 5 and 8'; '360-degree multidimensional progress card for each student'; 'reformation in Board exams by offering semester/modular systems' and 'redesigning the test in two parts – objective type and descriptive type'; 'centralisation of student assessment and evaluation through setting up of a standard body – Performance Assessment, Review, and Analysis of Knowledge for Holistic Development' (PARAKH).

About half of the teachers are in strong agreement with the various aspects of assessment (Figure 3). It is interesting to note that quite a few teachers have been non-committal in their response in this area especially when compared to the responses of teachers on other aspects such as curriculum and pedagogy. Assessment, thus, can be highlighted as a contentious issue especially since the teachers mentioned

Table 2: Comprative Analsyis of Teachers' Perspective : Curriculum and Pedagogy

Aspect	School teachers	Mean	SD	t	Level of significance at 0.05
Proposed structure of 5+3+3+4	Government	4.30	0.91	1.617	Not significant
	Private	4.00	1.02		
Focus on foundational literacy	Government	4.60	0.9	0.669	Not significant
	Private	4.50	0.71		
Focus on foundational numeracy	Government	4.48	0.97	0.927	Not significant
	Private	4.35	0.69		
No hard separation between arts and sciences	Government	3.98	1.11	0.288	Not significant
	Private	4.11	0.94		
Introduction of technology-based courses such as coding	Government	4.35	0.99	0.907	Not significant
	Private	4.21	0.90		
No boundaries between curricular and extra-curricular activities	Government	4.12	1.01	0.334	Not significant
	Private	4.07	1.00		
Curricular integration of arts and sports	Government	4.53	0.89	-0.048	Not significant
	Private	4.50	0.69		
Flexibility in subject choices at secondary level	Government	4.43	1.02	-0.728	Not significant
	Private	4.54	0.73		
Integration of vocational subjects	Government	4.56	0.96	1.265	Not significant
	Private	4.49	0.78		
Semesterisation	Government	4.48	0.83	0.749	Not significant
	Private	4.29	0.96		

Figure 3: Teachers' Perspective on NEP: Assessment



challenges pertaining to decontextualisation of assessment (and thereby learning) by virtue of centralisation. Less than 40 per cent of the teachers have expressed strong agreement with centralisation of student assessment. A few teachers expressed their apprehension about this aspect in response to the open-ended questions as highlighted in this response: "Assessment would get highly centralised and could be insensitive to learners' real context. For example, if the question asks for an essay on 'rains a boon' it would alienate the learner who faces floods in their region and the marking of this essay would be done by a centralised body who may or may not consider the learner's answer due to the centralised body's own limitation to their context as the question itself is not sensitive to diversity of opinion based on experiences." The recommendation of learning outcome-based assessment at the end of each level (Classes 3, 5, 8) was also critiqued by a few teachers especially in the first two levels stating that it seems dichotomous to teach these children in play-way method and then subsequently expect them to 'undergo the pressure of board exams' and that this change could lead to an epistemic shift from 'learning to scoring'.

By and large then, agreement to reforms, pertaining to assessment, has the agreement of fewer teachers when compared to the other aspects. These findings are corroborated through data triangulation since only six teachers out of the total 151 rated 'assessment mechanisms' as the most important aspect of the policy when asked to rank certain key aspects of the policy in terms of their importance.

In the aspect of reforms pertaining to assessment, no significant difference (calculated via two-sided tests assuming equal variances with significance level 0.05) was found between the responses of teachers in government and private schools as evident from Table 3.

Table 3: Comparative Analysis of Teachers' Perspective: Assessment

Aspect	School	Mean	SD	t	Level of significance at 0.05
Competency-based assessment	Government	4.32	0.94	-0.338	Not significant
	Private	4.27	0.83		
Learning outcomes-based exams at the end of Classes 3, 5, 8	Government	4.09	1.19	0.358	Not significant
	Private	4.15	0.86		
Multi-dimensional progress report of students	Government	4.31	1.06	1.102	Not significant
	Private	4.60	0.51		
Centralisation of student assessment	Government	4.06	1.06	0.654	Not significant
	Private	3.80	1.09		
Reforms in board exams	Government	4.35	0.91	1.806	Not significant
	Private	4.26	0.79		

School governance and systemic issues

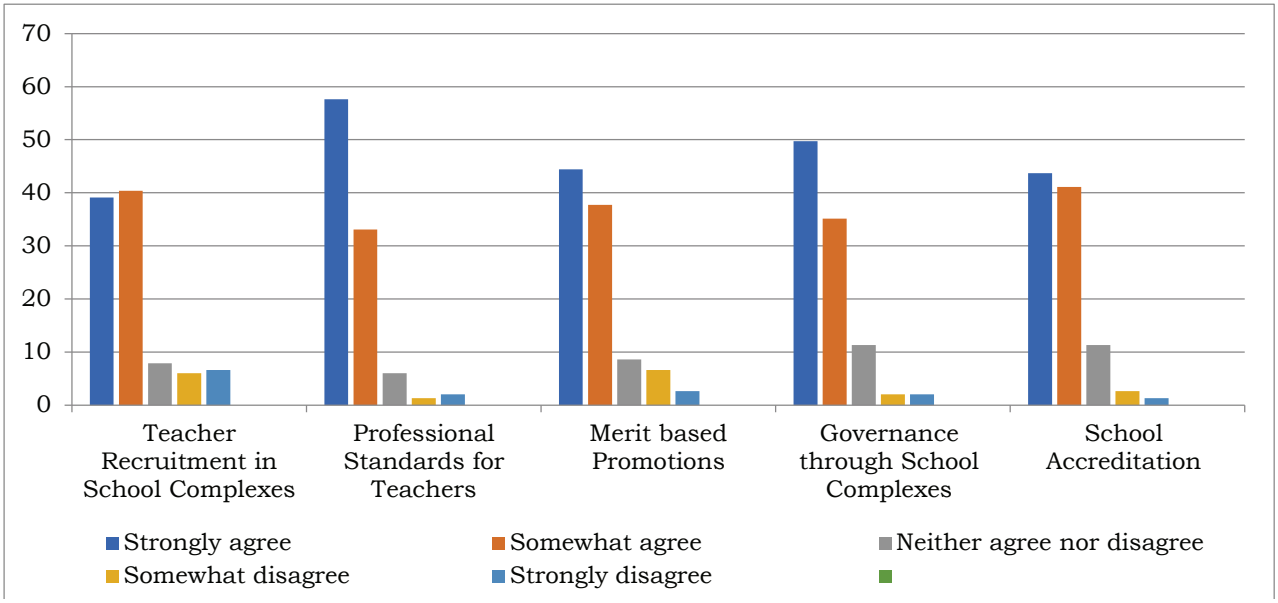
The policy recommends a 'tight but light' regulatory framework for school governance and monitoring. Referring to the various challenges arising due to 'small schools', NEP 2020 recommends 'establishment of a group structure called 'school complex' consisting of one secondary school together with all the other schools offering lower grades in its neighbourhood'. These complexes are envisaged to play a 'pivotal role in efficient resourcing and effective governance'.

While lamenting on the present quality of teacher education, recruitment, deployment, and service conditions, the policy recommends several measures, such as 'development of robust merit-based structure of tenure'; 'promotion and salary structure'; 'provisioning of vertical mobility for teachers'; 'development of a common guiding set of national professional standard for teachers'.

The overall responses of teachers to these various aspects of school governance indicate some agreement with these proposed reforms (Figure 4). A noteworthy observation is relatively high percentage of agreement with setting up of professional standards for teachers (combined strong and somewhat agree being 91% and a high mean value). Again this response is triangulated with teachers' qualitative responses since several teachers expressed their reservations about the preparation of teachers for the implementation of NEP 2020 and advocated for measures to undertake the same. Digital measures to facilitate teacher education at the pre-service and in-service level were also critically mentioned by the teachers.

The construct of 'school complex' is central to school governance in NEP 2020 and interestingly apart from one teacher it has not been mentioned anywhere in the open-ended responses of the teachers. A look at Figure 4 reveals that there is somewhat agreement with aspects pertaining to governance through school complexes. By and large, the teachers in their qualitative responses showed reservations about 'centralisation', arguing that instead of "handing over certain responsibilities to the central bodies, they (the policy makers) should move to the states and districts to cater to the diverse needs of diverse learners coming from various backgrounds; giving the opportunity to the teachers to be a part of curriculum designing and development, textbooks, and assessment strategies."

Figure 4: Teachers' Perspective on NEP: School Governance and Systemic Issues



On the basis of results based on two-sided tests assuming equal variances with significance level 0.05, it is found that there is no significant difference between the responses of government school teachers and private school teachers on the various aspects related to school governance and systemic issues (Table 4).

Table 4: Comparative Analysis of Teachers' Perspective: School Governance and Systemic Issues

Aspect	School	Mean	SD	t	Level of significance at 0.05
Teacher recruitment and resource sharing in school complexes	Government	4.14	1.08	1.211	Not significant
	Private	3.87	1.18		
Setting professional standards for teachers	Government	4.56	0.92	1.397	Not significant
	Private	4.27	0.74		
Merit-based promotions and tenure track	Government	4.17	1.04	1.010	Significant
	Private	4.06	1.00		
Governance through school complexes/ clusters	Government	4.40	1.09	0.631	Not significant
	Private	4.15	0.78		
School accreditation	Government	4.32	0.92	1.390	Not significant
	Private	4.12	0.80		

Conclusion

The study found that a significant number of teachers expressed varying degrees of agreement with the chosen aspects of the NEP 2020 policy presented to them. The aspects of the policy on which there was a strong agreement of the teachers (above 70%) include, 'inclusion of ECCE'; 'focus on foundational literacy'; 'curricular integration of arts and sports'; 'flexibility in subject choice'; 'integration of vocational subjects'. Almost half the teachers, who responded, strongly agreed to the various

aspects pertaining to school governance and systemic issues. Various aspects pertaining to assessment reforms were also agreed upon by the teachers (50% or less than that) though not as strongly as the above aspects. Triangulation of data revealed that some teachers were apprehensive about the proposed reforms in NEP 2020 as they felt that this could lead to dilution of learning and also raised concerns about their ground-level implementation.

Though the analysis of quantitative data informs us of the strong agreement of teachers with chosen aspects of the policy, there were a few voices of dissent on the policy. These few teachers presented powerful arguments rooted in the socio-political understanding of education. Two major thematic areas that were highlighted in the context of the implications of the policy to perpetuate status quo were digital education and focus on mother tongue/local language as the medium of instruction. Teachers reasoned that digitalisation would lead to 'furthering of the existent social and economic inequalities' and 'depriving government school children of the opportunity of English language would make them lag behind their private school counterparts' in a societal structure deeply seeped in the hegemony of language. Majority of the teachers talked about the challenges in implementing the policy at the ground level. The teachers, however, suggested that with a clear-cut road map, the vision of the policy can be transformed into reality.

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Challenges in Bilingual Teaching among Teachers of Teacher Education Institutions of Punjab

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Abstract

The teacher, the most vital element who can maximise learning outcomes of students, gets overlooked. Teachers hold a key position in any educational reconstruction programme. Various research, education commissions and policies have elaborated the effectiveness of learner-centered instruction, especially mother tongue-based education. It is also recommended to adopt bilingual approach in teaching learning process. But only limited empirical research has looked deeply at challenges faced by teachers especially in bilingual classrooms. Therefore, it is quite important to know whether content teachers are adequately prepared to address the rising number of bilingual students in their classrooms. To find out the challenges in bilingual teaching among teachers of teacher education institutions, researchers constructed an online five-point rating scale with 26 positive and negative items related to challenges in bilingual teaching. The sample consisted of 28 male and female teachers of different teacher education institutions of Punjab. Descriptive analysis was used to describe the basic features of the data and to provide simple summaries about the sample. After analysing the received data, it was found that most participants agreed that they get very little support from the administration regarding bilingual teaching; half the participants admitted that they have difficulty with technical terms and academic vocabulary in two languages during the lecture; most participants felt the lack of quality learning resources like books in both languages; and more than half the teachers admit that they face difficulties in using ICT while preparing lesson plans and providing instruction in a language other than English (as ICT generally supports only English language). It is recommended that there should be pre-service and in-service teacher training programmes that can sensitise the teachers to deal with bilingual situations in an academic environment. Such training programmes must equip teachers with strategies that can be used to tackle the bilingual or multilingual classroom situations. Also, developing, applying, and sustaining a bilingual educational programme demands leaders who are attentive about bilingualism, bilingual education, bilingual teaching, and emergent bilingual student population. Moreover, there is need to encourage the publishers to produce authentic study materials in different language for immediate use. In addition to this, research in the field of bilingual or multilingual education must be supported and promoted so that various solutions can be drawn to deal with challenges concerned with bilingual teaching.

Keywords: Teacher education, Bilingual teaching, Challenges

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Introduction

Multilingual ambience is an essential feature of Indian diversity. Indian linguistic diversity is marked not only by the number of languages spoken but also by the way these languages are exhibited in writing, speaking, cultural symbols, political, ethnic, and social markers. India has witnessed the multilingualism due to the arrival or invasion by several ethnic, religious, or political groups and races since ancient times. The invasions led to the migration of people from one society to another. As a result, people exchanged their culture, script, and language.

In many cases, a language attains enormous power due to the cultural aspiration of people, spoken by the elite class or the ability of language to contain within itself the identity, attitudes, and culture. Also, some socio-political factors give tremendous power to a language and make it more prestigious than other languages. Thus, a demand for a language drives national and state policy, like today, English is considered as the language of power in the whole world. It is seen as the gateway of opportunity across the world. In addition to this, the world itself is now entering into the phase of globalisation where the phenomenon of multilingualism has become the norm to meet the global needs. Parents also prefer to educate their children in the language of power. Similarly, at state levels various languages are spoken, but due to cultural reasons, people's aspirations or the standard form of languages, the selected language wins the place as the medium of instruction in schools. Also, the multilingual, multiethnic, and multicultural character of Indian society demanded the inclusion of several languages in the school curriculum, and at the university level. Moreover, various educationalists, education commissions stressed on imparting education in the mother tongue. Due to this, the Indian education system is moving towards addressing or promoting multilingualism or bilingualism in classrooms.

Bilingual education, in simple terms means teaching the academic content in any two languages. The basic aim of this bilingual education programme is to help the learners to learn in their preferred languages and empower them to master the curriculum. This is done through explicit instructions in reading, writing, listening, and speaking in the target language in all the academic areas. Bilingual education implies the use of two languages as the medium of instruction for a child in part or all the school curricula (Cohen 1975).

The concept of bilingual education in India cannot be discussed without discussing the national sociolinguistics scene.

From the educational point of view, India has the following typology of language:

1. Regional languages
2. Classical languages
3. Mother tongues other than regional languages
4. English as a foreign language
5. Hindi as a national language

The three-language policy suggested by Kothari Commission has currently been implemented to accommodate the above-mentioned languages. As the mission suggested, from Class 1 to 10, regional language or mother tongue is taught as mandatory language. From Class 5 to 10, Hindi or English is taught as a compulsory second language. If either Hindi or English was not taught in the previous years, then either or one is taught as a third mandatory language from Class 8 to 10.

Bilingual education in the Indian context

As discussed above, bilingual education, especially in India is generally termed as the instruction through regional language and English. The demand for English as a medium of instruction in India is increasing day by day. A majority of Indian parents want to provide English medium education as it is considered a more privileged head start in

life (Boruah 2015). Also, lack of instructional material and lack of modernisation of Indian languages contributes to the increasing demand for English. The options provided for students to attain education in a regional or local language is also well intended. The education in regional language helps students from rural areas where their previous instruction was in a regional or local language. Higher education institutions also allow students to adopt the mother tongue or regional language as a medium of instruction to help students grasp the concept better.

Need of bilingual education in India

India has been a multilingual country from the Vedic period to the current scenario. Multilingualism is a product of arrival or invasion by several ethnic, religious, or political groups and races since ancient times, migration of people from one society to another, and a reflection of its diverse cultures on different societies. The multitude of languages came into being when millions of men and women with their children from different states moved to another state to earn their daily lives. Therefore, such movement of people gave birth to language diversity. Moreover, the Indian Constitution in the 8th schedule recognised 22 Indian languages. Also, there is a demand for the inclusion of 38 more languages to the 8th schedule of Constitution.

In many cases, a language attains enormous power due to the cultural aspiration of people, spoken by the elite class or the ability of a language to contain within itself the identity, attitudes, and culture. Also, some socio-political factors give tremendous power to a language and make it more prestigious than other languages. Thus, a demand for a language drives national and state policy. As today, English is considered as the language of power in the whole world. It as seen as the gateway of opportunity across the world. In addition to this, the world itself is now entering into the phase of globalization where the phenomenon of multilingualism has become the norm to meet the global needs. Parents also prefer to educate their offspring in language of power. Similarly, at state levels various languages are spoken, but due to cultural reasons, people aspirations or standard form of languages, selected language wins the place in medium of instruction in schools. Poor grasp of English adds to the demand of regional and local language as a medium of instruction. Therefore, the education system has to offer feasible options to choose the medium of instruction according to the demand of language and diversity among learners.

Review of Related Literature

Ali, Motbaynor & Mulat (2019) in their study assessed the problems and possibilities of multilingual classrooms in North and East Shoa zones of Ethiopia**.** Simple random sampling techniques were employed to select 260 primary schoolteachers and directors. Majority of respondents were familiar with the concept of multilingual classrooms. It was found that most teachers did not know languages other than their own mother tongue. There was no such special consideration and support for those students who could not speak the medium of instruction, which may have resulted from a teacher's inability to speak another language other than the medium of instruction. So, 36 per cent of respondents disagreed that they could easily communicate with all the students in the classroom, even though the students were multilingual.

Petron, Ates & Berg (2019) in their study on the topic, 'You Just Sit There and Be Quiet: Latino/A Bilingual Educators in Texas' explored how bilingual Latino teachers construct and narrate professional lives as a bilingual educator while dealing with the power relations that exist within the school. Three main themes emerged from the findings. The first theme denoted challenges to provide instruction due to lack

of resources. The second theme pointed to the isolation and marginalisation of educators as well students from the mainstream. The third theme dealt with the education practice that makes them a failure.

Mudenda & Nankamba (2017) studied the challenges of using the local language as a medium of instruction in a multilingual setting. The data was collected from purposively selected 50 teachers of Class 1 to 4 using semi-structured questionnaires. Of them, 72 per cent teachers were found not prepared to teach using local languages.

Manjusha (2016), in the study, investigated the problems of education in multi-religious and multilingual poverty-stricken slum areas of Calcutta. The stratified random sampling was employed to collect data. The sample included 400 school going children, 300 housewives and 575 working class people from three slum areas of Calcutta. The inquiry form of the questionnaire was used as a tool to collect data. The study revealed that a different linguistic background of children adds to their educational problems.

Raosaheb (2016) in his study investigated the different aspects of bilingualism and its impact on English teaching and learning at the undergraduate level. The researcher randomly selected 20 colleges of Swami Ramanand Teerth Marathwada University Nanded. He found that 80 per cent of the teachers perceived the difference in English language competence of students from rural and urban areas. Moreover, a majority of the teachers opined that students are not comfortable with English language.

Rasheed, Zeeshan & Zaidi (2017) carried out a study to find out the challenges faced by female secondary school teachers in teaching English in a multilingual classroom. The purposive sampling was employed to select the participants. The data was collected through classroom observations and semi-structured interviews. They found that English was the learner's third language. Most students belonged to different linguistic background, so they did not have exposure to the English language. This increased anxiety in them and made them passive listeners.

Gul and Aziz (2015) examined the English-speaking competencies of 350 schoolteachers. The study also explored the causes of weak language competencies of teachers. Structured interviews were conducted to collect the data. The teachers were found confident to speak in English, while their fluency and pronunciation was average and they were weak in vocabulary and grammar. Overall speaking competency of the teachers was below average.

Farooque (2015) conducted a study on English language competence of teachers and students' achievement in English medium primary schools of Kannur district. The study aimed to measure the English language competence of teachers and the achievement of students of Class 4 in English, Mathematics and EVS. The sample consisted of 833 students and 108 teachers. It was found that there was no significant difference between mean score of male and female teachers in English language proficiency in comprehension. Female teachers had better English language communication ability than male teachers.

Rajkhowa (2012) in his study titled 'A study on the methods of teaching English for developing teaching competence of the secondary school teachers of Assam' studied the professional and academic qualifications of secondary level English teachers. He found that most of the teachers used marking as a way to provide feedback to students. Also, majority of teachers use bilingual methods to teach English in teacher education institutions.

Rationale of the study

The latest National Education Policy (NEP) 2020, in its recommendation states that the medium of instruction up to Class 5, and preferably till Class 8 and beyond, should be home language/mother tongue/local language. Therefore, the education system has to offer feasible options to choose the medium of instruction according to the

diversity among learners and demand of language they know best. The multilingual and multicultural character of Indian societies demanded the inclusion of several languages in the school curriculum. Due to this, several states are moving towards addressing or promoting multilingualism in classrooms. Similarly, Punjab School Education Board introduced English as an 'optional' medium of instruction from 1 April 2018 in primary, middle and secondary schools with the objective of meeting the public demand, improving the quality of education, bridging the gap with private schools and increasing the enrollment of children in government schools. Earlier, Punjabi was the primary medium of instruction, followed by Hindi medium. Private schools in the states are also offering three mediums of instruction mainly Punjabi, Hindi, and English, while Punjabi and English are being offered as a medium of instruction in state public schools.

In addition to this, in higher education institutions also, including teacher education institutes, students can choose any one language as the medium of instruction out of three options – Punjabi, English, and Hindi. Quite often the most vital element, the teacher, who can maximise learning outcomes of the students, gets overlooked**.** Teachers hold a key position in any educational reconstruction programme. Various researches have elaborated the effectiveness of learner-centered instruction and student teacher relationship-building practices in educational settings. Only limited empirical researches has looked deeply at challenges faced by teachers especially in bilingual classrooms. Therefore, it is important to know whether content teachers are adequately prepared to address the rising number of bilingual students in their classrooms. Therefore, the present study will advance the current literature by exploring the challenges faced by teachers in bilingual classrooms.

After studying the related literature and reviews, the researcher has found a huge gap in the studies related to challenges in bilingual teaching. Hence, the study titled 'Challenges in Bilingual Teaching among Teachers of Teacher Education Institutions' was selected by the researcher.

Methodology

Objective: The researcher has framed the following objective for the present study.

To study the challenges in bilingual teaching among male and female teachers of teacher education institutions

Research design: For the present study, an online survey was conducted by the researchers in Punjab.

Population: The population of the present study was all teachers of teacher education institutions in Punjab.

Sample: The sample consisted of 28 male and female teachers of different teacher education institutions of Punjab.

Tool: To find out the challenges in bilingual teaching among teachers of teacher education institutions, the researcher has constructed an online five-point rating scale, which has 26 positive and negative items related to the challenges in bilingual teaching.

Data analysis, interpretation and discussion

A descriptive analysis was used to describe the basic features of the data and to provide simple summaries about the sample. Data was interval in nature and was reported in mean score. Of the teachers, 28 completed the 26 quantitative items in the survey as shown in Table 1.

Table 1

Item no.	Statement	N (Total no. of teachers responded)	Mean score
	I feel comfortable while teaching in bilingual classrooms	28	4.03
	I can efficiently implement appropriate lessons in my bilingual classes	28	3.67
	I find that time of class is too little to teach in two languages	28	3.7
	There are inadequacies of instructional materials in both languages to address the academic needs of a student	28	2.89
	I feel lack of language competency in both languages	28	3.21
	I find lack of administrative support for bilingual teaching	28	2.14
	Dealing with the students of two mediums does not disturb the classroom environment	28	3.14
	Preparing question papers in two languages puts extra burden on teachers	28	2.82
	I find equal participation of students of both medium in teaching learning process	28	3.45
	I was informed about the bilingual nature of classrooms at the time of recruitment	28	3.50
	I have received sufficient pre-service training for bilingual education programmes	28	3.25
	I find it difficult to code-switch between languages while delivering instruction	28	3.07
	I could find enough time during the day to plan lessons in two languages	28	3.07
	Bilingual teaching puts extra burden on teachers that directly impacts the working conditions	28	2.75
	I find difficulty with technical terms and academic vocabulary in two languages during the lecture	28	2.82
	I get enough support from my senior for bilingual teaching	28	3.25
	I have received in-service training for bilingual teaching	28	3.03
	During the recruitment process, I was asked to demonstrate the proficiency in both languages for bilingual classrooms	28	3.03
	Students of two mediums in the same class do not cause discipline problems	28	3.42
	I can provide equal attention to students of both medium in a bilingual classroom	28	3.78
	The lengthy curriculum is a big challenge in a bilingual classroom	28	2.71
	Bilingual classroom negatively affects the academic performance of students	28	3.50

	Extra duties in addition to my instructional roles constrain my effectiveness in bilingual teaching	28	2.96
	There is lack of quality learning resources like books in both languages	28	2.26
	I find enough time during class to address the individual academic needs of students of both mediums	28	3.53
	I find difficulty in using ICT while preparing lesson plans and providing instruction in a language other than English	28	2.59

Interpretation and discussion

1. *I feel comfortable while teaching in bilingual classrooms*
   Mean score: 4.03. It means that most participants agree that they feel comfortable while teaching in bilingual classrooms.
2. *I can efficiently implement appropriate lessons in my bilingual classes*
   Mean score: 3.67. It means that a majority of the participants agree that they can efficiently implement the appropriate lessons in both languages in bilingual classes.
3. *I find that time of class is too little to teach in two languages*
   Mean score: 3.7. It means that a majority of participants disagree that the time of class is too little to teach in two languages.
4. *There are inadequacies of instructional materials in both languages to address the academic needs of a student*
   Mean score: 2.89. It means that a majority of the participants are neutral about this statement.
5. *I feel lack of language competency in both languages*
   Mean score: 3.21. It means that a majority of participants are neutral about this statement.
6. *I find lack of administrative support for bilingual teaching*
   Mean score: 2.14. It means that most of the participants agree that they get very little support from the administration regarding bilingual teaching.
7. *Dealing with the students of two mediums does not disturb the classroom environment*
   Mean score: 3.14. It means that a majority of participants agree that dealing with students of two mediums does not disturb the classroom environment.
8. *Preparing question papers in two languages puts extra burden on the teachers*
   Mean score: 2.82. It means that a majority of participants are neutral that preparing question papers in two languages puts extra burden on the teachers.
9. *I find equal participation of students of both medium in teaching learning process*
   Mean score: 3.45. It means that a majority of participants agree with the view that they find equal participation of students of both medium in teaching learning process.
10. *I was informed about the bilingual nature of classrooms at the time of recruitment*
    Mean score: 3.50. It means that a majority of participants agree that they were informed about the bilingual nature of classrooms at the time of recruitment.
11. I have received sufficient pre-service training for bilingual education programmes
    Mean score: 3.25. It means that a majority of participants have a neutral view that they have received sufficient pre-service training to deal with bilingual classrooms.
12. I find it difficult to code-switch between languages while delivering instruction
    Mean score: 3.07. It means that a majority of participants have a neutral view regarding this statement.

13. *could find enough time during the day to plan lessons in two languages*
    Mean score: 3.07. It means that a majority of participants agree that they can find enough time during the day to plan lessons in two languages.
14. *Bilingual teaching puts extra burden on teachers that directly impacts the working conditions*
    Mean score: 2.75. It means that a majority of participants are neutral regarding this statement.
15. *I find difficulty with technical terms and academic vocabulary in two languages during the lecture*
    Mean score: 2.82. It means that more than half the participants find it difficult to deal with technical terms and academic vocabulary in two languages while teaching in bilingual classrooms.
16. *I get enough support from my senior for bilingual teaching*
    Mean score: 3.25. It means that a majority of participants are neutral about the statement.
17. *I have received in-service training for bilingual teaching*
    Mean score: 3.03. It means that a majority of participants are neutral about the statement.
18. *During the recruitment process, I was asked to demonstrate the proficiency in both languages for bilingual classrooms*
    Mean score: 3.03. It means that a majority of participants are neutral about the statement.
19. *Students of two mediums in the same class do not cause discipline problems*
    Mean score: 3.42. It means that a majority of participants agree with the statement.
20. *I can provide equal attention to students of both mediums in a bilingual classroom*
    Mean score: 3.78. It means that a majority of the participants agree with the statement.
21. The lengthy curriculum is a big challenge in a bilingual classroom.
    Mean score: 2.71. It means that a majority of participants are neutral about this statement.
22. *Bilingual classroom negatively affects the academic performance of students*
    Mean score: 3.50. It means that a majority of participants disagree with the statement *Extra duties in addition to my instructional roles constrain my effectiveness in bilingual teaching.*
23. Mean score: 2.96. It means that a majority of participants are neutral with this statement.
    There is lack of quality learning resources like books in both languages.
24. Mean score: 2.26. It means that a majority of participants agree that there is lack of quality learning resources like books in both languages.
    *I find enough time during class to address the individual academic needs of students of both mediums*Mean score: 3.53. It means that a majority of participants agree that they find enough time during class to address the individual academic needs of students of both medium.
25. *I find difficulty in using ICT while preparing lesson plans and providing instruction in a language other than English (as ICT generally supports only English language)*
    Mean score: 2.59. It means that a majority of participants agree with this statement.

Major findings

This study is aimed at analysing at which point a teacher faces challenges while teaching the students of two mediums. The findings revealed that a majority of teachers can effectively implement their lessons in two languages in a bilingual classroom. Of the respondents, 75 per cent registered their support that they can effectively teach in bilingual classrooms. However, most of the participants agreed that they get very little support from the administration regarding bilingual teaching. In addition to this, 46.4 per cent of the respondents felt difficulty while using technical terms and academic

vocabulary in bilingual classroom. Moreover, 46.6 per cent of the respondents with a mean score of 2.26 said there is lack of quality learning resources including books in two mediums. Also, most female respondents found it difficult to use ICT while preparing lesson plans and providing instruction in a language other than English.

Recommendations, educational implications and conclusion

The study reveals that many of the teachers admitted that they have not received training for bilingual teaching. Therefore, it is recommended that there should be pre-service and in-service teacher training programmes to sensitise teachers to deal with the bilingual situations in an academic environment. Such type of training programmes must equip teachers with the strategies that can be used to tackle the bilingual or multilingual classroom situations.

Also, most participants felt the lack of administrative support in the context of bilingual teaching. It can be easily measured by the resources allocated by them in support of bilingual programmes. Therefore, the educational leaders must make special efforts and invest the necessary resources to get language resources concerning the academic purpose both for students and teachers. Also, there is a strong need for well-prepared leaders in teacher education institutions who can support and oversee teachers. Therefore, developing, applying, and sustaining a bilingual educational programme requires leaders who are attentive about bilingualism, bilingual education, bilingual teaching and emergent bilingual student population (Menken 2017). Additionally, a majority of bilingual teachers are doing unpaid overtime and invisible work before and after the class to find, create and translate study materials. Their burden is exacerbated by the lack of ready-made study materials in their language of instruction. This problem can only be sorted out by encouraging the publishers to produce authentic study materials in different languages for immediate use.

In addition to this, the biggest barrier in bilingual teaching is lack of teachers with the requisite knowledge and pedagogical skills. Thus, there is a strong need to redesign the training programmes and to develop short term in-service training programmes or bridge courses for bilingual teaching that should not remain confined to the lecture method with little scope but offer opportunity for trainees to vigorously take part in the training process. The recruitment rules for teachers also need to be reviewed keeping in mind the demand of bilingual competency in existing scenario.

Moreover, research in the field of bilingual or multilingual education must be supported and promoted so that various solutions can be drawn to deal with challenges concerned with it. This research can be helpful to educational planners, teachers, teaching material providers, publishers, and administrators.

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Examining our Conditionings: A Session with Postgraduate Students on Critical Pedagogy[1]

*Sindhu Mathai**

Abstract

The National Education Policy (2020) calls upon schools to develop caring, inclusive communities. Looking inward and confronting our thoughts and biases is an important step in this journey. While reading Paulo Freire's classic work Pedagogy of the Oppressed (2005), as well as the conversation between Freire and Macedo on critical pedagogy (Freire and Macedo, 2003), I was struck by how meaningful this was as pedagogic practice. Freire's exhortation to educators and students to be conscious of their individual subjectivities while being part of social practice is even more significant with the current crises of different kinds: social, economic, political, religious, etc., all over the world. We are alerted as educators, also to our conditionings from our growing up years, and our internalisation of norms, often without our own knowledge. Unpacking these conditionings therefore, with a group of potential educators and teachers, seemed essential. This paper analyses a classroom exercise, which was part of a discussion on critical pedagogy with students in a curriculum studies core course within an MA Education programme. I had asked students to note down and bring up for discussion, ways in which each of them felt 'conditioned'. What emerged was a fascinating narrative cutting across multiple topics and themes: caste, religion, region, physical appearance, bodily functions, public and private schools, values, the idea of success, dominant school subjects, gendered professions, class consciousness, media messages, assessment structures and failure, growing up, mental health, hierarchical structures, etc. It helped students re-look and articulate what they had taken for granted, as problems, which need to be re-thought and to be eventually acted upon.

Keywords: Critical Pedagogy; Pedagogy of the Oppressed; Curriculum Studies; Postgraduate students; Conditioning; Paulo Freire

Introduction: Reflections on Freire's 'pedagogy of the oppressed'

The National Education Policy (2020) (NEP) emphasises the need to transform schools into supportive spaces and build "vibrant, caring, and inclusive communities of teachers, students, parents, principals, and other supporting staff, all of whom share a common goal: to ensure that our children are learning." This further underlines the need to examine our biases, fears and recurrent thoughts to understand what may prevent the creation of inclusive school and classroom environments. In this context, I will be presenting some analyses of a classroom discussion on critical pedagogy with students of an MA Education programme. The class period was located in a curriculum studies core or foundational course in the first year of the programme.

While engaging with Freire's *Pedagogy of the Oppressed* (Freire, 2005), I felt challenged in introducing it meaningfully to students. Freire, a Brazilian educator, well-known

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for his approach to literacy education (Freire and Macedo, 2003), discusses the 'problem-posing method' of teaching and learning in his book. This became known as critical education and the larger process of investigation it led to, as critical pedagogy. Freire contrasted the consciousness required from teachers and students to participate in this critical process, with what he called 'banking education'. He described this as a static process undertaken by teachers and students, in not being engaged with or relating to the content of what is taught and learnt. As in the banking system, "the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits." On the other hand, problem-posing education, takes cognisance of the active role that teachers and students in an educational context could play in acknowledging, naming and acting on oppressive structures, which even they may not have been conscious of. The book and the particular edition which I had with an introduction by Macedo, had several meaningful insights and statements, the truth of which I was able to reflect upon, also in the context of a science pedagogy course, which I have been teaching for three years now. As an educator, the process of moving away from a distant, unconnected pedagogic practice was imperative. While I have consciously tried to engage with this kind of practice, Freire and Macedo's cautioning was at the forefront. I am increasingly aware of "what it means to be an intellectual who fights against the temptation of becoming a populist intellectual." Below I discuss some strands and reflections concerning this pedagogy, even while I consider myself to be an engaged, conscious teacher.

A mechanical methodology

While the truth of a critical approach is often clear even from a quick reading of this text, our tendency to reduce it to something concrete and actionable in the classroom maybe problematic. Macedo discusses how Freire's language is often criticised for being abstract and complex. He counteracts this by laying out how peasants have often discussed with Freire that they have finally a found a language, which they could consider to be theirs or as their voice. Macedo then insightfully argues how most individuals can only find appealing what they can identify with in terms of their own experience, or what deepens their understanding of themselves. However, as Freire himself points out, "the fact that I have not personally participated in revolutionary action, however, does not negate the possibility of my reflecting on this theme" (Freire, 2005: 39). In this context, are there possibilities, which could be meaningfully generated in the classroom to question privileged understandings? Are there possibilities to move beyond the static realities of our lives, beyond comfortable 'circles of certainty' or traps: comfortable on the one hand, and dead and fatalistic on the other? Could there be a historical consciousness generated, indicative of possibilities, rather than pre-determination? Could there be pedagogic possibilities, which are indicative and transformative, rather than fixed and lifeless? To quote Freire again: "Fed up as I am with the abstractness and sterility of so much intellectual work in academic circles today, I am excited by a process of reflection, which is set in a thoroughly historical context, which is carried on in the midst of a struggle to create a new social order and thus represents a new unity of theory and *praxis"* (Freire, 2005: 31).

Over celebration of theory or practice

Another thought-provoking and relevant theme can be found in how we could be embedded or even stuck as academics or practitioners in an 'over celebration' of theory or practice. There were several questions which emerged for me in this context: How could dialogue be responsive to an 'epistemological curiosity' moving beyond the participant individuals? As an educator, am I looking at easy ways to be pedagogically engaging to students in the classroom? Could I draw upon lived experience in the classroom without 'exoticising' it as a

process of coming to voice? Could pedagogy move beyond method to reflect on larger structures? While the trap of elite verbalism is laid in an over celebration of theory, a sway towards practice leaves the discourse disconnected and without an anchor.

Fear of freedom

A theme which could be easily related to in Freire's analysis is the fear of freedom that oppression produces. This fear of freedom is tangible in the patterns of conformity that individuals and groups are trapped in without being conscious of possible, better choices. It could even be observed in following structures, which are familiar and therefore, comfortable. The idea of freedom as contributing to the fullness of oneself and one's well-being, while also liberating the oppressed, the oppressor and oppressive structures is meaningful. It is further meaningful in helping to sensitise students who see themselves as privileged, to understand how self-centred and fearful of change they may have become. Another relevant and related argument is the condition of contradiction within the oppressed. Even when there is some recognition of need to have choices and finding oneself, there continues in an individual, a feeling of being trapped in a drifting movement leading to docility and sameness. This is clearly a concern, which could meaningfully resonate across economic class structures.

Investigating generative themes

Freire describes discussion along with the oppressed to identify generative themes, or problems that require further investigation and action. These themes are sensitive to and involve the particularities of the context of the oppressed, and necessarily involve them in taking meaningful action. While the particular group of students I was teaching were not expected to take up action, what eventually transpired in the classroom was the identification of some generative themes. As Freire points out "Thematic investigation thus becomes a common striving towards awareness of reality and towards self-awareness, which makes this investigation a starting point for the educational process or for cultural action of a liberating character" (Freire, 2005: 107).

Meanwhile feminist critiques of Freire's approach urge multiplicity in looking at the oppressor and the oppressed in terms of language and intersections between multiple social categories (Ellsworth, 1989). This helped me think about the suggested approach in a nuanced manner. What seemed to be liberatory in terms of bringing about a critical consciousness could sound vague and distant if not brought down to specificities of classroom discourse as well as the content of a particular course. It also assumed clear boundaries between 'them' and 'us' and a common understanding of what oppression meant. In reality, such homogenous assumptions may only perpetuate 'myths' about the emancipation achieved from a unified consciousness. It is important for a teacher to acknowledge that the issue will need to be sufficiently complex and cannot be simplistically looked at as merely them and us. On the other hand, there is a need to get into specifics of the classroom transaction in order to bring about a nuanced understanding of pedagogic practices which follow from this approach.

Context of the course and classroom transaction

The described conceptual framework enabled the articulation of my intentions in thinking of an appropriate exercise to discuss critical pedagogy. Curriculum studies as a foundational course is offered in the second semester of our MA Education programme. While the course takes up meaningful philosophical analysis linked to the Indian thinkers, Gandhi, Tagore, Krishnamurti and Aurobindo, it also deals with specific themes linked to curriculum development, and related concerns such as, textbooks, pedagogy, assessment, etc. While discussing pedagogy and teaching as reflective practice,

critical pedagogy was taken up, while also locating this as part of overarching curriculum theory. While this topic has been taken up in some other foundational courses such as Sociology of Education, and maybe revisited later as part of pedagogy courses, it was pertinent to eventually link this to the problem of curriculum. How do these structures and resultant conditionings come to bear on curricular and pedagogic processes? There were boundaries too considering that this was part of a larger core course. Hence, I was looking at this exercise as an attempt to uncover the various ways in which we have been conditioned, and how these conditionings have had or still influence our lives today. I was also hoping that this would lead to the generation of themes as problems with potential scope for further investigation. I mentioned to the class that these conditionings need not necessarily be looked at as oppressive or problematic during articulation if they felt so, to see various possibilities that emerge during discussion. I asked them to try and look for situations, which point to historical or political structures. Trying to explain this within the scope of a classroom exercise, I wrote down the following on the board:

Give one or two examples of situations, experiences or conversations where you felt that:

a. You were 'conditioned'
b. The person, group or institution you were dealing with was 'conditioned'

I also described how I felt conditioned as a teacher, even while trying to be this facilitator of students' learning. For instance, being aware of my positional authority in the classroom helped me in responding to questions in the classroom, negotiations regarding assignment content and submission dates, responding to grievances about institutional structures, etc. At the same time, I was aware that I could not shake off the normative expectations of my role as a teacher within institutional structures of a certain kind. Also, as a woman there were many ways in which I felt connected and empathetic to other women: patriarchal structures, bringing up children while engaging with academic work, exercising agency when familiar and comfortable, often fatalistic structures, produce conformity and docility in everyday life, etc. However, in many ways I also saw myself as being privileged and fortunate in having many choices available and being able to ask for it when not given them. With this brief introduction we proceeded with the classroom exercise. I mentioned that each of them may write down their experience in their notebooks, which were later collected as part of a larger assessment of class notes and reflections. There was a quiet and excited murmur and discussion when we started the exercise. I noticed that this was an exercise that all of them had got into with the required seriousness. After about 20 minutes or so we were ready to begin a discussion on what different students had written down. What emerged was a fascinating narrative: some from individual students, and others in groups. They cut across varied and significant topics and themes: caste, religion, region, physical appearance, bodily functions, public and private schools, values, success as being of monetary worth alone, dominant school subjects, gendered professions, class consciousness, messages conveyed by the media, political 'connections', assessment structures and associated failure, growing up, mental health, hierarchical structures in society and institutions, etc. Below are examples of larger themes which I built up from the generated examples, with some discussion and reflection for each case.

Generative themes and analysis

Patriarchy

Several students brought up tangible examples to illustrate patriarchal values, reminding me of hooks' description of this political system: "the one that we all learn the most about growing up, is the system of patriarchy, even if we never know the word, because patriarchal gender roles are assigned

to us as children and we are given continual guidance about the ways we can best fulfill these roles" (hooks, 2004: 1). hooks' poignant description of being denied experiences she particularly enjoyed on account of being a girl, resonated with some of the examples generated in class. She vividly recounts her competitiveness and aggressiveness, quite different from her brother's passive, quiet qualities as being clearly different from the gender roles she was expected to internalise, and hence not considered desirable. There were also clear expectations in terms of games she was allowed to play as a girl. Not being attentive to such norms led to severe action for her from her parents, which was her first enculturation into the system. Similarly, in the context of the class discussion, Tannu[1] wrote and spoke about her experience as a girl who aspired for an education outside her state: something very few women from her community and area aspire towards. She wrote about her family's reaction to her having secured admission into a liberal university outside her state:

> *It is my personal experience. When I was coming here, my family told me what to do and what not to do. They said that since they weren't present in that place, I have to go on one condition. I do what they do, meaning that in our family no one does inter-caste marriage or love. So, I should also not do any such thing. That is the big condition in my life. I relate to it (historically because going out from the home and specially a girl always faces some conditions).*

While she may have internalised and accepted this rule to fulfil her aspirations, it may also have influenced the way she interacted with students around her, and in the social events and interactions she thought fit to participate in. At the same time, as Freire points out, locating historical exclusion, need not close or prevent the possibility of engaging meaningfully, but may bring about hope. "History is time filled with possibility and not inexorably determined." Also, in responding to the oppressor by a defiant act or longer, conscious action, there arises the possibility of hope and liberation for both the oppressor and the oppressed. In another written experience, Sumana wrote:

> *During my Bachelors' I used to read the newspaper. There, especially in the bride and groom section, I found out how our mind is conditioned. We give the description of women: height, bride complexion, education, co-curricular activities, age. Groom: income, wealth. Also, I found one more example, that a girl is a divorcee but without establishing any intimate relationship. Patriarchal society still continues the oppression, in one or the other form.*

While these messages are being read and assimilated by young women who may see themselves entering the institution of marriage eventually, it also presents educational opportunities in bringing up for discussion ways by which women have been objectified. Other students also pointed to how professions too, such as teaching are similarly gendered in being considered as contributing to a meaningful 'work-life balance' for women. Such a balanced state, besides being difficult to achieve, also becomes a source of constant worry when important situations, events or requirements at home or at work could likely take up more time than usually provided or given.

The imagination of 'work' and 'life' could also be completely restricted to the space of the home and family. As one student in class puts it, while referring to the expectations from girls in her family and society: "Most of them think and aspire to become a housewife only because the dominant gender sees education as influencing a girl's thinking." Similarly, the response from another woman student: "Girls are conditioned to believe that after studying they need to marry and care for others." The ethics of care in any institution while being heavily gendered also forecloses the possibility of any other person providing care or involving oneself in a conversation around practices of care. While

[1] All names of students used in this paper are pseudonyms.

typically, children within the family, and at school look to women teachers as providers of care, there could be possibilities for all participants to provide meaningful care and support depending on the context or requirement. This is particularly important during painful experiences leading to significant change in life trajectories: such as when a child decides to drop out of school on account of unpleasant school experiences (Sunandan, 2017).

A more obvious example, which came up in class from several of the women students brought up the serious issue conveyed by advertisements of products used by women in caring for their appearance. While students claimed that these advertisements do not overlook any part of a woman's body (typically a different product for each body part!), there are also other messages pertaining to 'poise', 'personality', etc. which privilege looks over everything else: for instance in handling an interview successfully. Students also questioned whether understanding and reflection did not matter in being suitably qualified to take up a particular job.

The described practices have been looked at as clearly gendered with links to caste and class in some cases such as with gendered professions. However, as hooks (2004) points out, these structures severely impact the upbringing of boys as well. They would, for instance, internalise roles such as being the 'breadwinner' of the family, and the associated anxiety in securing and succeeding at 'work'. A different and relevant example came up in the recollection of so-called 'good behaviour' among men: not often looked at as being influenced by patriarchal structures. An example is the felt need among men to 'be soft/help/support the female' even when not required or asked for from women. hooks' arguments are particularly pertinent in discussing the role of women as well, in unconsciously perpetuating these structures even in women-centred, single-parent households. She describes how these structures take hold in forms and behaviours that are subtle and do not lend themselves clearly to examination. Hence, "Dismantling and changing patriarchal culture is work that men and women must do together" (hooks, 2004: 3). This could take more grotesque forms in the various assumptions we form and use. A painful reminder came from another example of typical associations with child sexual abuse. Perpetrators of such abuse are looked at as being male, and the victims as being necessarily female. There have been several incidents in the recent present, which clearly point to such patterns: violent in its assertion and questioning of such established biases.

Intersecting caste and class structures

Intersections between class, caste, gender, ethnicity, etc. have been consciously worked with by several researchers in Indian and Western contexts. The earlier examples have also consciously involved some of these linkages. Here I will present clear intersections of caste and class coming through from students' narratives. Karuna spoke and wrote about the experiences with her family members and their views on people from lower socioeconomic backgrounds. This primarily involved people engaged with domestic labour at home, with linkages to caste as well. The practices adopted at home such as making use of separate serving glasses for domestic help, led to a brief discussion on modern practices with links to untouchability. It was quite heartening to hear her discuss this openly in class, without being self-conscious, and also admit "Not proud to say I believed it for a while." A comparable narrative emerged from Reena, a reflective student, who surprised me with her openness to discussing a sensitive and thought-provoking issue. She indicated how discussions about the reservation system in her family as well as issues related to religion and caste were biased and conditioned her while growing up. It made her uncomfortable to discuss such concerns and issues openly, and constrained thought in a certain sense, when 'negative consequences were

overlooked'. She also wrote, considering her upper-caste background:

> *I have been told by members of my family and considering the background I come from which has been blamed for practicing caste. I, being at high position in hierarchy, my family is scared that my opinions would result into a backlash on me in terms of violence and even legal action considering the atrocity acts we have committed.*

She also pointed out how a liberal position could be justified meaningfully by invoking values, without slipping into being 'anti-Hindu'.

Circles of certainty

The next theme which is to be presented here draws upon Freire's phrase 'circles of certainty' to look at structures, which have been preserved without critical analysis and reflection. These examples also made me reflect as a teacher of another course on 'Science Education', particularly the Unit on 'Science and Society'. In some of the papers we took up for class discussion, Vidita Vaidya (2017) elaborates on the need to question practices of science and scientists, particularly when it is unthinkingly passed on as norms. An interesting example is the unquestioned use of dull background colours for posters to be presented, and her surprise when asked by a student if pink could be used as a background colour. Another example from her articles points to how male animals have been used as models for testing because of the methodological ease it presents for researchers.

Examples which students came up with included the often-acknowledged dominance of desirable careers in medicine and engineering, also, associated norms such as 'success' as being of monetary worth alone, marks as deciding one's value as a student, the textbook as the authority in matters concerning school knowledge, etc. Nandish, while describing the examination culture in his hometown wrote: "All collectors and DEOs force all teachers to get 100 per cent results: then they have to be committed to mass copying" indicating how pressure from authorities to present good pass percentages, have led to insidious practices influenced by fear of failure. Another student mentioned how performing well in certain subjects, such as Math was indicative of being 'intelligent' and 'brilliant'. The value associated with this subject is also linked to stereotypical imaginations of a good Math student: as being male, and often associated with an upper caste. These distinctions particularly for Mathematics as a subject are identified early on among children, leading to particular anxiety and stigmatisation associated with the subject for the others (National Curriculum Framework, 2005).

Unquestioned hierarchies in our institutional structures: in the classroom between the teacher and student, at home between parents and children, at the workplace among juniors and seniors, etc. also point to meaningless practices. Ramesh described the discipline enforced at school to be blindly accepted when he wrote:

> *During my school I feel I was conditioned to believe punctuality and discipline are virtues that one needed to succeed in life. Rules were always to be followed and never questioned.*
> *Even punishment from an authority was considered good for one and not questioned.*

Another student Sharada, echoing a similar thought added:

> *Children are told to study, so that they can do well in life. What that means is neither explained nor examined. The child and parents do not really think about the purpose and aim of education. Each child will certainly interpret well in his own way, but it is often influenced by parents' expectations.*

As a few more students pointed out, these patterns are also emphasised when children are exhorted to 'grow up', meaning to take up more responsibility, reduce playing, etc. Being a student with a number of years of industrial work experience, Ramesh further

adds that such disciplinary structures continue into the world of work: "Productivity was more important than anything else at work: usefulness."

Religious rituals and superstitions were also strong examples of practices reinforcing such certainty. As one student pointed out "Some families practice certain rituals like going to the temple every Tuesday or fasting on some festival days. Rarely do people think about why they are going. They simply accept it as a given". While most students reflected on being embedded in these structures resembling 'circles of certainty', the awareness of being trapped as Freire discusses, point to signs of hope and possibility for meaningful action, even if such action is not immediately tangible or practical.

Regional locations and divides

Some students also brought up connotations associated with people from different parts/ regions of the country, and also religions. This is amply reflected in prejudiced statements from our everyday conversations. Rani pointed out how "A family friend once told me that she was surprised to hear me converse in English because she thought that people from Kanpur weren't well-versed in it." Others indicated how cultures of intolerance are nurtured within communities against people from different religions. Mohan had a positive example in speaking about an experience from his home-state while describing a state-wide youth festival. The festival brought together young people from different religions to emphasise art and dance forms associated with them and encourage children to engage with all of them as a reflection of the State's traditional cultural forms. Since the MA Education programme brings together students from most states of the country, discussion about regional understandings and biases come alive in the classroom. In several other courses, I have heard and discussed issues such as practices of girls from different states of the country affecting living together in the hostel, connotations associated with dressing up, talking to members of different genders, etc.

Taboo subjects

Societal conditionings are particularly tangible in discussions about topics or themes considered to be taboo. Though a lot of awareness is being built on mental health issues and the need to treat intervention pertaining to mental health as a requirement, students acknowledged that it continued to remain a topic that could not be discussed comfortably. While this remains an issue, the other extreme is to look at medical intervention in the form of various cocktails of drugs as the solution to good mental health. This is particularly true for school children diagnosed with multiple learning difficulties, such as attention deficit disorder, bipolar disorder, etc. While the school and family along with the healthcare system, would like to look at such issues as biochemical imbalances alone, the pharmaceutical industry is quick to formulate a series of drugs and clinical interventions as primary ways of tackling these concerns (Monchinski, 2008). Taboo subjects include natural bodily processes such as menstruation and its association with impurity. While there is currently a fair level of comfort that has been built in discussing menstruation, particularly in our classroom discourse, in public spaces within the university, etc., the conditioning which starts from a girl child's school days continues to fester and rear its head in hideous ways. Students in other courses that I have taught, have referred to the particular attention that girl students get in preparing for field trips from school in terms of advice from teachers regarding handling one's period, etc. Such discussions have serious overtones and are often discussed without the presence of boys from the same class, who are sent away to play or engage with activities of their choice. Not acknowledging the place of this important bodily function has repercussions such as priorities given to understand the

process and variations of this process, as well as menopause, within medical research programmes. It may lead, on the other hand, to too much emphasis on so-called psychological and behavioural attributes affected because of the menstrual cycle. While acknowledging and paying enough attention to medical research programmes investigating this process is imperative, not being overly protective of women undergoing a natural process is also important. This will also allow women to see themselves as being engaged with activities and vocations they consider to be meaningful and enjoyable.

The public and the private

In educational discourses, debates on the public and private in education have been looked at critically and meaningfully. While the popular conditioning of only private and English medium schools as being 'good' has been reported widely, students brought up other acknowledged aspects of this conditioning extending into healthcare, transport, etc. Public healthcare is looked down upon as with public transport: the use of which is supposed to change with increasing social and economic 'mobility'. Some students spoke about how owning a car was an important part of the narrative that one had 'arrived'.

The classroom discourse and way forward

In the beginning of the paper, I had reflected on how Freire's pedagogy had alerted me to my own teaching practices for a few years now. This particular classroom transaction sensitised me to different experiences of students, and how they had consciously and critically looked at their experiences as problems. The described session moved on with further discussion about critical pedagogy, also drawing connections from what had been dealt with in other core courses handling this theme. Also, as stated earlier, while this particular exercise did not lead to action with the oppressed, it helped to identify and speak about various structures and practices which have led to us being conditioned, and ways by which we could consciously bring up and share them meaningfully through classroom discourse. As a teacher, I was struck by the seriousness with which students entered into this discussion, documented and spoke about these conditionings and larger structures contributing to them. It was heartening to see how they were able to discuss this in a diverse classroom where they were open about being oppressors in one context and oppressed in another. This brought out clearly that they were aware of and were acknowledging these as problems, among peers who could be representatives, in some sense, of the community they could work with through a dialogic process. The entire experience, therefore, was educational for me. I did not see myself as having contributed more than as a moderator of the discussion. In other longer conversations with some of these students, I was further sensitised to the long and arduous journeys they had made in coming into this MA Education programme: battling illnesses, family pressures, patriarchal structures, etc. Though I am unable to write about how these conversations enriched some of the discussions I have described, it is worthwhile acknowledging them here. Quoting Freire's words in this context:

> *The task of the dialogical teacher in an interdisciplinary team working on the thematic universe revealed by their investigation is to "re-present" that universe to the people from whom she or he first received it—and "re-present" it not as a lecture, but as a problem (Freire, 2005: 109).*

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Encouraging Teachers to Experience Emodiversity: A Reflective Retelling of a Mental Health Initiative

*Preeti Vivek Mishra**

A flawed mental health instructor?

Only the other day, I was told once again that I am an emotional teacher. As most teachers would agree, this hardly merits a mention. What does merit writing about is that I was told this by different stakeholders in education (a student and a colleague), in response to not so unrelated acts of mine (offering a cuppa and a shoulder to cry on to a student who needed both, and breaking down while reminiscing a student's academic ordeal to the said colleague) and with diametrically opposite emotional tones (gratitude, and apprehension mixed with disapproval, respectively). With reminders from a well-meaning but visibly disappointed colleague, that I teach courses on school mental health, I headed back from my office that evening in an addled state.

Flawed who?

Did my breaking down indicate a breaking down of my stress resilience? Or did it instead make me more of a human than teachers are allowed to be in their moments of emotional vulnerability? As the colleague pointed out, would I be more 'in control', more adept at coping if I could experience a 'positive emotion' instead, like, joy at being able to 'help' the student out of her pain?

I have never been able to align myself with the nomenclature of 'positive' and 'negative emotions'. A recent interaction with a group of 20 K-12 teachers affirmed my belief that framing emotions in the desirable-undesirable binary was ominous for the mental health of teachers. My experiences with teachers have left me convinced that glorification of the teaching profession has added to the emotional misery of teachers by placing grave injunctions with regard to living and experiencing their diverse emotions. We can quote the latest research data on teacher stress and burnout, and continue to scout for reasons in workload issues or disruptive student behaviour (another term, I cannot align with), but till we recognise our teachers as having equal right to experience emodiversity (emotional diversity) I reckon, we will always be far off course.

The naysayers can be assuaged by stressing the differences between perception and expression of an emotion. The skill of accurately perceiving emotions precedes the skills of understanding, analysing and reflectively regulating emotions (Caruso et al., cited in Barlozek, 2013). What we can demand of our teachers is being more adept (for they deal with young minds) at exercising context-specific regulation, which is only one of the four skills integral to being emotionally adept/intelligent. What we cannot do is put them on pedestals from where mere acknowledgement of some emotions induces guilt, leaving them incapacitated and foreclosed to experiencing diversity of emotions within themselves!

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Emotions: The positive, negative and the imperative of it!

The terms 'positive and negative emotions' are ubiquitous in literature on emotions, emotional intelligence, positive psychology, educational attainment, etc. (Barrett, 2013). Despite the normalisation of these terms, the distinction is neither foolproof (Green, 1992), nor advisable when understanding the relationship between an individual's emotional ecosystem and mental health (Quoidbach, 2014). To elaborate, psychologists and philosophers try to differentiate positive emotions from negative ones by employing cognitive (intentionality), behavioural (behavioural tendencies), and experiential criteria (felt qualities). Green (1992) sufficiently illustrates the arbitrariness of these criteria by showing that adoption of different criteria can actually give us different classification for the same emotion, say anger or fear.

Again, with reference to mental health, Quoidbach et al. (2014, p.2057) have shown that people who experience 'emodiversity – the variety and relative abundance of emotions', have lower vulnerability to depression, fewer doctor consultations per year, and fewer medical costs compared to those who do not. Noticeably, negative emodiversity or the variety and relative abundance of negative emotions yields the same results as positive emodiversity even after being controlled for age, gender, etc.

Where does all this lead us as people concerned about our teachers' mental health? I propose that it leads us to tell our teachers that experiencing emodiversity is good for them, and to tell them emphatically that emotional intelligence – the ever trusted ally in our pursuit of mental health – comprises effective regulation of all emotions, and denial of none (Salovey & Sluyter, 2001)

Teachers and emodiversity: A retelling

The workshop with K-12 teachers reaffirmed the need for it beyond doubt. These teachers, all between 24 to 30 years of age and teaching middle and secondary school students from well-resourced, reputed urban private schools, reported a shared sense of loss of a young-blooded utopia they once had as fresh graduates from their respective teacher training institutes. Another shared experience was the disillusionment with the discursive construction of teaching as a humane profession and teachers as ever capable ambassadors of the exalting standards of humanist conduct. Saddened I was at the state of things, but surprised I was not!

Being a constant embodiment of holier than thou would have its consequences, I reckoned. Teachers are repeatedly reminded of being inspirations, role models, generation shapers and all things supra normal. Indeed, an honourable pedestal to be put on. This workshop reminded us that pedestals like these can impose unrealistic injunctions on our emotional lives; that these injunctions have a way of making one pay with things simple, beautiful, and carefree. So, too with these teachers, all of whom had graduated from the most reputed teacher training institutes of the country in question. Looked up to by society, school administration, parents and students alike, to be woven out of an enviable moral-emotional fabric, these teachers had begun to wilt and wither under the expectations to be more than human all the time! One of the major casualties they reported in this unrealistic search for perfection was emodiversity (Quoidbach et al., 2014)

As a run-up to the workshop, these teachers were requested to complete an online 'pre-workshop' questionnaire designed to arrive at their self-reported emodiversity profiles. The questions were designed to identify the spectrum of emotions experienced by the teachers routinely, occasionally and rarely. In addition, it sought to profile emotions on the basis of the ease or difficulty of accepting each of these emotions to oneself, and to others, respectively. The data from this online questionnaire was kept anonymous,

collated, and used as a discussion resource in the workshop.

The findings were menacingly simple and ominous for mental health. Negative emodiversity had taken a brutal beating. What we know of the benefits of having a rich, authentic, and complex emotional life (Barrett, 2013) was reeling under the debris of the twin discursive constructions of teachers as emulation-worthy and teachers as infallible, where fallibility is partly defined as experiencing a 'negative' emotion. To share an indicative list of states/emotions that the participants found difficult to acknowledge to others were anger, fear, guilt, boredom, pity, jealousy, frustration and domination. More telling was the existence of an equally large number of emotions/states they found difficult to acknowledge to themselves vis-a-vis hatred, guilt, jealousy, frustration, fear and helplessness. The so-called positive emotions were celebrated as trusted aides in building lasting interpersonal rapports and thus were reported to have no barrier to acknowledgement.

When the face-to-face workshop was conducted, this pre-workshop data was shared with the participating teachers. A series of focus questions were projected alongside to brainstorm on the nature of emotions, teachers and emotions, desirability and undesirability of some or other emotions in educational settings, and reflections on the very constructs of positive-negative/ desirable-undesirable/ empowering-disempowering emotions.

A retrospective reflection on the discussions that ensued generated a series of insights on what works when one is looking to address the emotions in question with a view to promote the mental health of teachers.

Understanding the physiological genesis of emotions can be liberating

All teachers barring a couple who had prior rigorous training in psychology did not seem versed with the physiology of emotions. The group reported heaving a sigh of relief when presented with quotes, such as "Emotions are unbidden, they happen to us" or "Emotions can have a very fast onset, beginning so quickly that they can happen before one is aware that they have begun" (Eckman, 1999, p.54), which stressed the biological genesis and function of emotions. The realisation that emotions had a phylogenetic function allowed these teachers a perspective wherein all emotions were seen as natural, universal and adaptive. Once this perspective was gained, these teachers became capable of questioning the labelling of emotions as either positive or negative. It is imperative that teachers challenge these value ascriptions and create a cognitive climate conducive to the subsequent perception and acknowledgement of an emotion.

Learning to step in with mindfulness is a practicable skill

The above mentioned point about physiology and phylogeny is an admirable trope to ensure teachers do not crucify themselves for slightest deviation from injunctionary emotional protocols. Yet, the same when overstressed and not supplemented with the rationale for practicing regulation of 'all' emotions, can lead to any initial gains made towards emotional management and mental health being lost. While the automaticity of basic emotions is being stressed on one hand, the journey from physiological arousal, to perception, acknowledgement analysis and regulation of emotions must be well charted and shared too. Teachers must sense that it is in this journey that the truest possibilities of leading emotionally complex and variegated life emerge. Teachers must be encouraged to claim their emotional ecosystems. They need encouragement to own their emotions by accurately perceiving, truthfully acknowledging and dispassionately analysing them. Having done so, emotional regulation should be easier to practice. Making teachers believe that emotional intelligence is practicable, frees them from the clutches of both natural determinism and socio-culturally constructed inhibitory emotional protocols.

Trust teachers to reappropriate positive and negative for themselves, because it depends!

A consensus that emerged from the workshop was that our emotional ecosystems were unique. We experience emotions differently, our thresholds differ, the relative effects of the same emotion, and expressions differ too. An activity, we found useful was to get these teachers to develop personal-emotional profiles on the basis of what individual emotions did to and for them, what they wanted to continue and what they did not. This resulted in several instances of reappropriation of positive-negative labels. To illustrate, a couple of teachers reported that they were not angry enough and wanted to change that for they reckoned some degree of anger was required to change an inequitable or unjust educational context. Another teacher rued her eternal optimism and opined that some degree of sadness may augur well for her while relating to students as they shared particularly hopeless life situations with her. Increasingly, the teachers came to the conclusion that there were no universal parameters for labelling emotions as positive or negative. Emotions per se are neither. We concluded that openness to the entire range of emotions available to us could be a useful ally in our becoming more relatable, effective, approachable and humane teachers. By the end of the workshop, a phrase that almost became a slogan for the group when recapitulating the issues of desirability/ undesirability and so forth for any emotion was 'It depends…'.

Introduce and involve teachers in picturing emodiversity

At the outset, I found that the research-backed conceptualisation of emodiversity – positive, negative and global – remains a useful tool to allay several apprehensions around the 'negative' emotions for those who are yet to warm up to the possibility of looking at emotions in non-binary terms. Whereas more research is awaited to precisely explain how emodiversity works. It seems worthwhile to brainstorm on possible hypotheses for the same with teachers. The explanations may vary – emodiversity may imply a sign of a self-aware and authentic life; how authentic life as well as self-awareness is instrumental to a subjective sense of well-being; or that emodiversity allows for a diffusion of excessive dominance of specific emotions in one's emotional ecosystem, and so forth (Quoidbach et al., 2014). Yet, the very process of discussing a novel concept threadbare is bound to make the concept familiar to the discussants. Our experience in the workshop was even more encouraging. We found discussions resulted in more than familiarisation. Due to the very personal import of emotions, any discussions around it were implicitly relevant for the participating teachers. Accordingly, the engagement, ownership and identification were easier to achieve. I found it particularly useful to bring in specific research evidence while building the case for emodiversity. Once the concept found resonance with the teachers, the suggestions around creating an emodiversity ethos in educational settings too can be expected to flow freely.

Epilogue

Humans are fragile and complex. How often have we, as mental health professionals and teachers, witnessed the immense psychological costs of disallowing this fragility to express itself in all its vulnerability and complexity to attain its manifestation. So many of our individual and collective mental health failures have stemmed from a false and forced sense of courage, invulnerability, perfection, and certainty. Unfortunately, our ideal teacher is precisely an embodiment of these very fictions.

As a teacher and a mental health instructor, if there is an area where I take being a role model seriously, it is modelling emodiversity for students. Let our teachers not wilt and wither under exalting standards unbecoming of fragile and complex humans. In the same vein, let us not model for our

children a fictional world where anger, fear, insecurity and so forth don't exist. Let us rather model for them how to embrace each emotion, value it for its function, and learn to harness each emotion for what it can add to our beings. For, till we encourage our teachers to try it out themselves, they will rarely know that one hearty sob with one's students is just as therapeutic, liberating and warming as one hearty laugh with them. I, for one, can vouch for it from memories of an addled evening!

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Paradigm Shift Towards Practical Oriented Teaching Of Mathematics

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Abstract

This paper is aimed at highlighting the need for practical oriented teaching of mathematics for better conceptual understanding and improved mathematical problem solving ability among students studying at the high school level. This paper also attempts to inquire upon the teacher's attitude, preparedness, the possibilities and the pros and cons of whether practical oriented teaching of mathematics is made possible. Gowers (2016) insists on the need to teach mathematics, as practically as a teacher can. In the process, a concept steadily unfolds creating better scope for understanding and problem solving among children. It has been accounted from the reviews and observations in the classroom context that the need to teach mathematics practically contributes in enhanced conceptual understanding and problem solving ability.

Keywords: Practical oriented teaching, Practical mathematics, Activity-based teaching, Mathematics laboratory, Constructivism, Realistic Mathematics Education (RME).

Introduction

Mathematics teaching is a gratifying experience, demanding strenuous efforts from the teacher, right from the conception of the content till taking it to the minds of the pupil. The process in between defines the endeavour of mathematics teaching process relating its effectiveness with teaching methods, models of teaching, involving the pupils in activity, drill and practice, assessing their performance, etc. Among the major goals of mathematics teaching, the most important is the development of pupils' understanding of the concepts thus, aiming to advance the systematic development of problem solving ability.

The development of these processes is dependent on the careful organisation of content, teaching methodology, transactional strategies, knowledge about information processing, etc. All of these play a pivotal role in determining the learning outcomes. Moreover, the outcomes in mathematics teaching are not determined by the teacher defined strategies alone. As the factors are varied, with regard to comprehension, and conceptual understanding, rationalisation and interpretation processes determine the learning ability of the students and their learning outcomes, which hold a significant role in the achievement of teaching learning objectives.

Need to teach mathematics practically

Mathematics helps us think in an analytical way, to look into a particular instance in a more specific, logical, rationalised and analysed manner. It requires better analytical and reasoning skills to look into the problem and to understand its intricate nature. Practical understanding of mathematical

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concepts helps us think analytically, where more reasoning is expected. It helps to view the problems in multiple perspectives and to approach the problem with a view to looking for practical solutions.

When mathematics is taught practically, associating it with objects, life oriented tasks and activities, experimental activities with relevant teaching aids / equipment and apparatus, it helps to look at the problem perspective in a more practical way, than just approaching it to only solve the problem theoretically, based on the rules and formulas. Clark (1997) insists that there is a shift of emphasis from teaching mathematics through conventional methods to experiential learning. This is based on the understanding of the procedures, which may be learned through practical or project work that make up a subject's content using discovery and inquiry methods of instruction.

Constructivism and Realistic Mathematics Education

The difficulty in mathematics learning is attributed to many factors, such as conceptual understanding, continuity in concept construction, application of related concepts, its nature of symbolism, abstraction and attributes related to approaching a problem, etc., NPE (1986) highlights that, "mathematics should be visualised as a vehicle to train a child to think, analyze and articulate logically." This statement insists on the need for teaching and learning of mathematics in a more lucid manner. Another important aspect is that it intends to highlight that the subject has to be visualised to achieve meaningful knowledge. This highlights the need and significance of why mathematics has to be taught practically.

In the teaching and learning of mathematics, constructivism emphasises that it is necessary to find a mathematical object to prove that it exists. Clements & Battista (2009) highlight that, "in the constructivism pedagogy the mathematical knowledge and skills are actively acquired by the students and not just passively received from the environment; mathematical knowledge is created by reflecting on their physical and mental actions; learning of mathematics is thought of as a process of adapting to and organizing ones quantitative world."

Practical oriented teaching of mathematics involves children actively participating in the learning process in many ways, and not merely the use of practical aids and activities. It concentrates on involving them to meaningfully interact, discuss and analyse the rationale of the problem, investigate the concepts involved in it and attempt to solve it by the application of possible ways and means. This involves the basic tenets of constructivism in the learning of mathematics that "Knowledge is constructed, not transmitted. Prior knowledge impacts the learning process. Initial understanding is local, not global. Building useful knowledge structures requires effortful and purposeful activity."

Another significant approach in associating the basis and objectives of practical mathematics is Realistic Mathematics Education (RME), which aims at changing mathematics learning into more fun and meaningful for students by introducing them to problems within contexts (Laurens et.al. 2018). The instructional aspects in realistic mathematical education mainly concentrates on improving the ability of students in learning mathematics based on activities, meaningfully interacting the concepts and relating it to contexts thus, aiming at improved understanding and the problem solving ability in mathematics. Further, the study highlights that the RME approach fosters motivation, self-confidence, problem solving skills and reasoning that improve cognitive achievement. RME refers to asking students questions that they can think of (Wijdeveld, 1980, as cited in Laurens et.al. 2018). It was then followed by students solving mathematics problems (Treffers, 1987, as cited in Laurens et.al. 2018).

Practical understanding of mathematics requires experimental knowledge, dimensional thinking and handling of practical equipment and objects. For example, the subject geometry requires practical and spatial understanding and applied positioning in a multidimensional perspective. Practical oriented teaching of mathematics involves teachers' commitment in analysing the probable and appropriate areas of the subject, which has scope for teaching practically. For example, a high school level rule-based algebraic problem may have the scope for teaching through induction or deduction, which may have less scope for practical application.

Practical oriented teaching of mathematics benefits the teaching learning process by:

- Understanding mathematical concepts related to spatial relationships, dimensions, formula constructs, inherent and lateral conceptual understanding through concrete experiences.
- Helping the slow learners and average learners in mathematics to understand the perspective of problems through activities that are part of practical oriented teaching.
- Developing visualisation, manipulation and tactile skills that enhance active participation and interaction among learners when compared with the classroom teaching learning of mathematics.
- Developing analytical ability in understanding mathematical concepts in parts. Swanson (1993) observed that the whole–part–whole-learning experience provides the learner with a complete understanding of the content at various levels of performance and allows for higher order development.
- Understanding as Hukum et.al. (2005) has explained that laboratory-based mathematics teaching can prove to be an important breakthrough in overcoming most of the instructional weaknesses in the present day mathematics instruction.
- Grasping that practical oriented perspectives of mathematics provide scope for individual awareness, opportunity to discover, identify difficulties in understanding the concepts and learn through activity.
- Providing an opportunity to demonstrate teaching and explain the concepts using concrete teaching aids.
- Imparting an everlasting learning experience where the concepts formed through practical activity will remain in the learner for a considerably longer period of time.Providing scope for students to create aids, based on their own understanding thus, creating a room for discovery and innovative skills.

The probable areas, which have the feasibility of teaching through practical methods or practical activities, can be sorted out by following which specific teaching learning material, lab equipment/apparatus, teaching aids have to be identified for each topic/area. Identified teaching may be applied to use it for teaching practically. Achieving practical oriented teaching of mathematics is a collective effort of both the teacher and the pupil where in the major objective is to understand the concepts better when the subject is taught practically.

Bhatt & Subramaniam (1985) have compiled a manual on 'activities for the school mathematics lab'. Throughout the volume it may be observed that the authors have painstakingly identified various math laboratory-based activities. They have clearly illustrated each activity with neat sketches and illustrated how the classified laboratory activities may be put to use to teach various other related concepts.

Essential aspects of practical oriented teaching of mathematics

The abstract concepts in mathematics should be visualised, simplified and organised into concrete forms, which when taught practically can be well received. For example, mathematical concepts pertaining

to mensuration at the high school level, such as finding out the area, curved surface area, total surface area, perimeter, volume, etc., all have much scope for teaching practically by using simple paper folding models and low cost teaching aids that are readily available for use by the teacher and the pupil.

The teacher's effort in taking up each concept to the level of application and bringing in a visualisation to make students understand the concept better than just presenting it theoretically is important in the teaching of mathematics. Practical oriented teaching of mathematics benefits students with better understanding, concept attainment, and content fluency through visual perception. It provides experience in the real world applications and enhances their ability to visualise and solve the problems based on improved conceptual understanding, and problem solving ability. Practical oriented teaching of mathematics develops an individual's:

a. Content knowledge through objectified concept formation
b. Thinking skills in coordinating multiple concepts through practical activities such as manipulation, measuring and organising
c. Abilities related to association and discrimination, logical and collaborative skills
d. Learning the concepts in a more play-way, participative and activity modes
e. Capacity to analyse and synthesise, visualise and interpret, generalise and apply
f. understanding the advantages of teaching mathematics practically will facilitate the institutions to set up mathematics laboratory.

Evolution of practical mathematics

Practical mathematics has always been in practice, with critical thinking, inquiry and discussions over the possibilities of application of mathematical knowledge. Practical mathematics is about how the mathematical concepts are perceived from the applicational perspective and relating the theoretical concepts with practical ones and applying it in practical situations. In the past, practical applications have motivated the development of mathematical theories. While pure mathematics emerged as a discipline, which concentrated on logic more than application, practical mathematics is more concerned about applicational perspectives (Boyer, 1991).

The evolution of practical mathematics may be observed when the inquiry of mathematical knowledge is aimed on the basis of empirical, concrete and experiential aspects. Ebrahim (2010) classified the seven periods of mathematical practice based on its characteristics as:

- Proto-Mathematics (from the mists of ancient time, through the archaeological evidence of c.30000 BCE, up to 2000 BCE): empirical, concrete and basic
- Ancient Mathematics (from 2000 BCE up to 800 BCE): empirical, number and figures abstracted, not axiomatic
- Classical Mathematics (from 800 BCE to 1500 CE): axiomatic geometry
- Mercantile Mathematics (from 1400 CE to 1500 CE): improvement in numeration, symbolic development, and symbolic shorthand arithmetic, sophisticated algebra and solution of equations
- Pre-Modern Mathematics (from 1500 CE to 1700 CE): functions, continuous mathematics, analytic geometry, calculus, applications to science
- Modern Mathematics (from 1700 CE to 1950 CE): modern abstract analysis, modern abstract algebra, modern abstract geometry, modern logical freed mathematics from the perspectives, paradoxes, and problems encountered during the classical and mercantile periods
- Post-Modern Mathematics (from 1950 CE to present times): dramatic expansion in scope and productivity in mathematics,

based upon axiomatic methods, accelerated by unprecedented growth in science, applied science, engineering, technology, statistics, and applications to all areas of human endeavour.

It is evident that the development of practical mathematics is basically dependent over the periods and especially during the modern mathematics and post-modern mathematics periods where the application of mathematical knowledge in every field has inspired and served as the basis of all developments, technical and scientific inventions. Moreover, practical mathematics application had led to the development of inter-disciplinary perspectives leading to development, innovation and research.

Scope of practical oriented teaching of mathematics

There are numerous instances where practical oriented teaching of mathematics may well be seen as a more appropriate teaching strategy by presenting concepts practically with the help of an aid for student's participation in a practical activity to help the student perceive the subject better. This helps them in understanding the concepts much better when compared to theoretical teaching. Gagne (1975) opined that the aim of practical oriented teaching of mathematics is to develop better concept formation, which helps even the slow and average learners to learn mathematics in a better way. The following objectives of practical oriented teaching of mathematics will have a constructive influence in the teaching learning process.Awareness about practical oriented teaching of mathematics will serve as a boon in the instructional process.

- Once the many benefits and rewards of practical oriented teaching and learning of mathematics is perceived, it encourages schools to set up mathematics laboratories.
- Practical oriented teaching and learning of mathematics will prove to be an explorative facet with the application of educational technology.
- Present day technologies like augmented reality, virtual interfaces, and artificial intelligence, which are the future of learning mathematics, will turn to be completely based on practical aspects.
- Practical oriented teaching of mathematics creates a scope for exploring, verifying and experimenting on mathematical results by students themselves (NCF, 2005) thus, highlighting the scope of mathematics learning through practical means.
- Provide the learners the scope for interaction, communication and representation of mathematical ideas by practising processes (NCERT, 2018).

Much of the mathematical concepts that involve logical / symbolic operations are perceived to be abstract, where in with the practical oriented teaching of mathematics, the concept formation process concerning these abstract areas in mathematics may be divided into parts keeping the perceived difficulty of the slow and average learners. While conducting the present study, teachers have, at many instances, where they were expected to teach mathematics practically, have complained about lack of time, lack of resources, accessibility, etc. They questioned the essential availability and demands of the resources and the feasibility of carrying out practical teaching for all the important areas of mathematics, for the entire academic year and questioned the practical difficulty and the possibility of teaching a part or the entire syllabus practically.

Studies carried out by Macleod & Golby (2003) reveal that average learners have done much better in mathematics when they are taught through activity / practical methods. This improvement is attributed to their improved conceptual understanding of the subject which they learnt through practical means and the teacher's effort in breaking up complex problems into simple and concrete ones.

At the secondary level, the curriculum context, with regard to mathematical concepts, diverge in forms, difficulty, abstraction and logic. Hence, many students, from this level find mathematics a difficult subject. In the present day context, both the culturally and socially widespread attribution that had affected the mind-set of students from the beginning stages of learning mathematics has been widely interpreted as, "mathematics is a difficult subject to learn and unless there is additional or extra coaching it is impossible to learn mathematics on their own" – (US National Research Council, 2001). This was found to hold contextual significance in the pursuit of this research.

Deductive nature of practical mathematics

Practical mathematics focusses on logically deducing facts and figures to arrive at a sequenced approach in understanding and solving a problem, right from the point of conceptual understanding till problem solving. Mathematics is a deductive science, which is based on proof and discovery. The deductive nature of mathematics aims at acquiring knowledge by looking at examples and inferring to form an idea to arrive at what may be true in general. Generally, this involves forming a conjecture, which is a statement that represents the inference of the idea conceived.

Wohlgemuth (2003) states that deductive mathematics asks questions about what is true about this thing being studied? and how do we know that it is true?

It may be observed that the problem section of mathematics texts for students and teachers involve primary problems, which is basically deductive in nature. This is evident from the following examples pertaining to upper primary level, which highlight the deduction process involved in comprehending and solving a problem.

- All numbers ending in 0 or 5 are divisible by 5. The number 35 ends with a 5, so it must be divisible by 5.
- Deduction is drawing a conclusion from something known or assumed. This is the type of reasoning applied in every deductive mathematical argument. For example, to solve $3x = 9$ for x we divide both sides by 3 to get $3x/3 = 9/3$ or $x = 3$. What we know or assume is that $3x = 9$ and that you can divide both sides of an equation by any non-zero number and the equation is still valid. From these two facts we deduce that $x = 3$.

In simple terms, deductive mathematics aims at arriving at a conclusion based on the premises of assumption. For example, given two statements that x is equal to y and y is equal to z, by deduction it is concluded that x is equal to z.

Mathematics learning and achievement is dependent on factors such as conceptual understanding, need for practical activities in mathematics learning strategies, such as participation, activity-based learning, laboratory activities, etc. (Fernandez, 1997). Similarly in the context of mathematics, teaching the following strategies play a vital role: a) conceptual understanding of the core knowledge required in the practice of teaching; b) fluency in carrying out basic instructional routines; c) strategic competence in planning effective instruction and solving problems that arise during instruction; d) adaptive reasoning in justifying and explaining one's instructional practices and in reflecting on those practices to improve them; and e) productive disposition toward mathematics, teaching, learning, and the improvement of practice (US National Research Council, 2001).

- Practical orientation towards teaching of mathematics provides an opportunity for the students to discover through activities that are relevant in mathematics learning.
- While carrying out the activities, students learn to analyse the problems by understanding the concrete and abstract nature of the problem, which helps to differentiate where more understanding

should be applied.

- Practical learning of mathematics gives scope for student participation both individually and as a group. It enables students to become more active as autonomous learners.
- The experiential aspects of learning happen only when there is scope for practical learning of mathematics.
- A simple practical activity will give them a concrete understanding of the concept that once they found difficult to learn.
- Puzzles, games and simple subject-based activities help the learners learn concepts in mathematics starting from the very basic classes to the higher levels. Practical learning provides scope for experiential understanding of the subject.
- Practical learning of mathematics helps in enhancing the student's interest towards learning the concept through an activity by which there is a scope for finding out the practical relationship between the problem and the solution.
- More importantly, the dependencies and independent learning sense, apart from the common classroom set-up gives them a sense of achievement interest and confidence.

ICT tools and practical oriented teaching of mathematics

In the present day context, many mathematics teachers have widely started using ICT-based learning modules or applications to teach concepts that require practical orientation. This provides students with a better understanding of the subject by virtual modelling, which may be referred to also as mathematical modelling. Agyei & Voogt (2011) highlighted that the ICT applications that are widely used in mathematics teaching learning process include portables, graphic calculators, computerised graphing, specialised mathematics software, programmable toys, spreadsheets, databases and mathematics-based gaming applications. These, however, need to be in the context of the child and include conversations, dialogue, discovery and problem solving. It is not the use of materials and equipment but more the thinking and the work done on the same.

Using ICT components take practical oriented teaching of mathematics to the next level. Still, it is a virtual model based on ICT principles, which may be well suited for higher classes. At the middle school level, where the development of concept is still at a passage from iconic to symbolic, concrete objects / visual objects play a better role in teaching mathematical concepts (Bruner, 1961). Adopting ICT tools helps teachers implement practical oriented teaching of mathematics in the following perspectives.An integrated approach to deliver topics in mathematics using various software, applications and multimedia-based presentation tools. This must include the active participation of learners in conceptualisation, abstraction and articulation of their understanding.

- Virtual mathematics laboratory should be made possible and practical activities that are relevant to each level should be made available using interactive tools and augmented reality applications. In this, tasks of visualisation and building new examples that would exercise the mind of the learner are needed.
- Developing programmed content especially for practical based concepts in mathematics using one or more ICT-based tools benefits enhanced usage of the ICT-based applications in practical learning of mathematics.
- ICT tools such as infographics, data visualisation techniques such as Google Charts, Tableau, Grafana, Chartist, js, FusionCharts, Datawrapper, Infogram, ChartBlocks and standard mathematics learning resources such as Wolfram Alpha, GeoGebra, ConceptuaMath, Thinking Blocks, FunctionVisualizer, etc. extend their resourcefulness in enhancing practical oriented teaching and learning of mathematics.

All these need to include new problems and tasks that expect the use of the concepts through the tools. The use of the tools is a means and not the purpose of the classroom.

Conclusion

Practical oriented teaching of mathematics can be viewed as a potential method of teaching mathematics effectively. High school level is considered a transition point in learning – shifting from the basic and concrete concepts to abstract concepts, problem solving from knowledge and understanding level to application and skill level involving higher order thinking skills.

In this stage, many aspects of how a pupil learns, the conceptual understanding process and many other cognitive aspects of mathematical problem solving ability are still unfamiliar to mathematics teachers. Teaching mathematics practically will help teachers in recognising the intricate, complex and convoluted process of how conceptual understanding takes place and the approach to problem solving. Thus, by initiating to view mathematical concepts through a practical viewpoint, it may become a rewarding attempt to hone the conceptual understanding and problem solving ability.

NCF (2005) highlights that, "the major objective of mathematics education is mathematization of the child's thought process." This is reflected in many research studies that were carried out in related areas such as mathematical problem solving, activity-oriented teaching learning, heuristic approach and other teaching approaches that are aimed at improving conceptual understanding of mathematics. It may be noted that there is an imperative need to teach mathematics practically, which contributes to the enhanced conceptual understanding and problem solving ability, which in turn unlocks leading possibilities in creating awareness and familiarising practical oriented teaching of mathematics, laboratory-based mathematics teaching and activity oriented teaching of mathematics.

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Virtual Internship: Pre-Service Teachers' Perception

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Abstract

The COVID-19 cases locked different sectors of the world. The education sector also faced a crisis. Acquisition of knowledge should not have an end. Knowledge acquired through internship must be purposeful. It helps to gain experience in one's preference and is a stepping stone to one who is looking for a job. At present, an essential issue in teacher education is how to design and implement internships. The ongoing COVID-19 lockdown has paved the path for E-internship. The emergency transition to E-internship is by force. E-internship, also known as the virtual internship, is a way of acquiring work experience through a remote setting where the intern is physically absent in an organisation. The study attempts to find the level of perception towards virtual internship because of physical absence. The researcher surveyed participating students, which revealed their general perception, concerns, and technical obstacles regarding virtual internship by responding to the statements provided. The investigator prepared the scale and gave it to them, an analysis of which is given here in this paper. The investigator further analysed the level of pre-service teachers' perception towards virtual internships. Online learning continues to be a global phenomenon in a variety of fields, but especially in education. The results of this study were; 50 (17.9%) of the sample have low level, 186 (66.4%) of the sample have moderate level, and 44 (15.7%) of the sample have a high level of perception towards virtual internship.
Keywords: Virtual internship, Perception, Pre-service teachers, etc.

Introduction

Internships in a virtual mode are an illustration of computer-based or computer instructed classroom simulations. The virtual internship provides a digital space for engaging all kinds of training to the pre-service teachers. It gives professional or occupational training to the pre-service teachers same as normal internship practices. We can define virtual internships in teacher education as online environments in which pre-service teachers plan, implement and assess their teaching through authentic virtual platforms (Thiyagu and Joshith 2021). Virtual internships have adopted the theory of situated learning (Huu and Tai, 2019), which can be explained as the nature of understanding and learning concerning being situated in a specific situation or environment because pre-service teachers often experience difficulties when acting as teachers (Keefe, 2020). Virtual internships could be useful in teacher education. The difficulties in transportation and the social distancing challenge faced by the students during the COVID-19 lockdown situation and their academic-curricular requirement have forced them to take up e-internships in Kerala. This study analyses the positive and negative effects of virtual internships on students and their learning during the COVID-19 scenario. The current

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situation has forged an understanding that technologies provide multiple opportunities to start life during lockdown time. The purpose of this study was to determine the pre-service teachers' perception of virtual internships.

Research questions

The research questions of the study were:

1. What is a sample in terms of their experience in using the internet?
2. How many hours do the respondents spend on the internet for a virtual internship?
3. What are the preferred devices used by pre-service teachers while undergoing virtual internships?
4. What is the preferred virtual platform used by the pre-service teachers while participating in a virtual internship?
5. What is the perception of pre-service teachers towards virtual internship in terms of all the statements?
6. What is the level of B.Ed. students' perception towards virtual internships?

Methods

The present study employed the survey method to find out the pre-service teacher's perception towards a virtual internship in Kasaragod district. The investigator adopted a normative survey to collect the data.

Population and sample

In this study, all the pre-service teachers studying in Bachelor of Education in Kasaragod district have been taken as the population for the study.

The simple random sampling method was adopted to choose the sample in the present study. Two hundred eighty pre-service teachers were selected as the sample from Kasaragod district. They represented all the selected independent variables, namely gender, subject stream, type of management and age, marital status, type of residence, qualification, etc.

The tool used for the study

Here the researcher prepared a five-point perception rating scale. Here the samples were asked to indicate a degree of agreement and disagreement with each series of statements. Each scale item has five response categories ranging from strongly agree and strongly disagree. It is a five-point scale ranging from the value 1 to 5. The researcher prepared a tool consisting of some questionnaires and sub-samples regarding the basic information and some statements related to the features of virtual internship designed to get the intended response from the pre-service teachers. The nature of questions and statements were formatted to know the pre-service teacher's perception about virtual internship in Kasaragod district. In the present study, the investigator employed Cronbach's Alpha (0.955) and the split-half method (0.874) for establishing the reliability of the tools, which indicates a high level of internal consistency of the tool. Rating scale of perception towards virtual internship measures what it is intended to an extremely high degree of satisfaction. Thus, the validity of the tool was also established.

Data analysis and major findings

Primary data were collected from pre-service teachers in Kasaragod with the help of a well-structured questionnaire. Two hundred eighty respondents were selected using a simple random sampling method.

Research question 1: What is a sample in terms of their experience in using the internet?

Table 1: *Analysis of the sample in terms of their experience in using the internet*

Years of experience	No. of pre-service teachers	Percentage (%)
2 years	18	6.4
2-5 years	80	28.6
Above 5 years	182	65

The above table presents the sample's distribution in terms of their experience in using the internet. As seen from the above, 6.4 per cent of the sample had two years of experience in internet usage, 28.6 per cent had two to five years of experience in internet usage, and the remaining 65 per cent had above five years of experience in internet usage. It seems most of the samples have above five years of experience in using the internet.

Research question 2: How many hours do the respondents spend on the internet for a virtual internship?

Table 2: *Analysis of the sample based on the duration of time spent on the internet*

Time taken to spend in internet use	No. of pre-service teachers	Percentage (%)
5-10 hours	196	70.0
10-20 hours	43	15.4
20-30 hours	19	6.8
More than 30 hours	22	7.9

The above table presents the distribution of the sample in terms of the amount of time spent on the internet. As seen from the above table, 70 per cent of the sample was accessing the internet for 5-10 hours per day, 15.4 per cent was accessing the internet for 10 to 20 hours, 6.8 per cent was accessing for 20-30 hours, and the remaining 7.9 per cent was accessing the internet for more than 30 hours. The above table highlights that most pre-service teachers spend 5-10 hours on the internet during virtual internship.

Research question 3: What are the preferred devices used by pre-service teachers while undergoing virtual internship?

Table 3: *Analysis of sample in terms of the preferred device used to take a virtual internship*

Preferred device	No. of pre-service teachers	Percentage (%)
Mobile phone	238	85.0
Laptop	42	15.0

The above table shows the analysis of the sample in terms of pre-service teachers' preference of devices to take a virtual internship. As per the above table, 85 per cent of sample prefer to use a mobile phone to attend virtual internship and 15 per cent of students responded that they like to use a laptop during a virtual internship. It seems that the majority of the sample likes to use a mobile phone to attend a virtual internship.

Research question 4: What is a preferred virtual platform used by pre-service teachers while participating in a virtual internship?

Table 4: *Analysis of sample in terms of the preferred platform used to take a virtual internship*

Preferred platform	No. of pre-service teachers	Percentage (%)
Google meet	272	97.1
Zoom	6	2.1
WebEx	2	.7

The above table shows the analysis of the sample in terms of the pre-service teacher's preference of platform to take a virtual internship. As per the above table, 97.1 per cent of the sample prefers Google Meet to attend virtual internships, 2.1 per cent of the students responded that they like to use Zoom, 0.7 per cent of the students like WebEx. It seems that the majority of the sample likes to use Google Meet to attend virtual internship.

Research question 5: What is the perception of pre-service teachers towards a virtual internship in terms of all statements?

Table 5: *Analysis of sample in terms of their perception towards virtual internship*

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Virtual internship was more convenient and flexible	27 (9.6%)	89 (31.8%)	104 (37.1)	58 (20.7)	2 (.7)
Virtual internship made possible for all subject streams in the pre-service education	30 (10.7)	87 (31.1)	92 (32.9)	65 (23.2)	6 (2.1)
Virtual internship provides space for developing a rapport with students	34 (12.1)	87 (31.1)	96 (34.3)	59 (21.1)	4 (1.4)
Virtual internship makes me explore more and more online teaching tools	24 (8.6)	38 (13.6)	74 (26.4)	122 (43.6)	22 (7.9)
I believe that undergoing virtual internship is less expensive compared to the face-to-face internship programme	19 (6.8)	58 (20.7)	93 (33.2)	87 (31.1)	23 (8.2)
I believe that virtual internship is more systematic in execution and conduction compared to a face-to-face internship	36 (12.9)	96 (34.3)	89 (31.8)	46 (16.4)	13 (4.6)
Virtual internship provides a chance for us to develop an e-resource such as audio, video, text materials	24 (8.6)	13 (4.6)	84 (30.0)	123 (43.9)	36 (12.9)
Virtual internship helps me to enhance my digital skills	20 (7.1)	15 (5.4)	72 (25.7)	139 (49.6)	34 (12.1)
Virtual internship provides me a chance to explore more about the novel digital pedagogy	21 (7.5)	36 (12.9)	89 (31.8)	113 (40.4)	21 (7.5)
I feel virtual internships are more comfortable for a student who lives in a remote area	49 (17.5)	103 (36.8)	79 (28.2)	39 (13.9)	10 (3.6)
A virtual internship is a positive deviation from a traditional internship	32 (11.4)	43 (15.4)	90 (32.1)	103 (36.8)	12 (4.3)
Virtual internship offers a new experience for me to explore novel ideas in the pedagogical and technological aspects	23 (8.2)	27 (9.6)	93 (33.2)	117 (41.8)	20 (7.1)
Virtual internship provides more satisfaction and better adjustment in the classroom perspectives	40 (14.3)	96 (34.3)	81 (28.9)	55 (19.6)	8 (2.9)
I was attracted to virtual internship due to the novelty in its various features	35 (12.5)	50 (17.9)	105 (37.5)	80 (28.6)	10 (3.6)
Virtual internship provides diversity in teaching and learning	25 (8.9)	47 (16.8)	86 (30.7)	108 (38.6)	14 (5.0)
Virtual internship provides a space to us to rectify the mistakes of recorded classes easily before sending videos to our students	28 (10.0)	29 (10.4)	91 (32.5)	109 (38.9)	23 (8.2)
I feel more comfortable using virtual board-based digital writing than normal blackboard writing	42 (15.0)	107 (38.2)	85 (30.4)	38 (13.6)	8 (2.9)

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Virtual internship reduces stress and anxiety	34 (12.1)	86 (30.7)	105 (37.5)	46 (16.4)	9 (3.2)
Virtual internship increased my communication skills	43 (15.4)	92 (32.9)	92 (32.9)	51 (18.2)	2 (.7)
I think virtual internship overcomes many financial and geographic barriers that students face	24 (8.6)	45 (16.1)	116 (41.4)	71 (25.4)	24 (8.6)
I think completing an internship online requires sufficient knowledge of internet-related skills	28 (10.0)	25 (8.9)	90 (32.1)	108 (38.6)	29 (10.4)
Virtual internship increased my teaching confidence level	41 (14.6)	84 (30.0)	100 (35.7)	49 (17.5)	6 (2.1)
Virtual internship helped me manage time wisely	25 (8.9)	73 (26.1)	104 (37.1)	70 (25.0)	8 (2.9)
Virtual internship provides multiple skills-based learning opportunities	27 (9.6)	51 (18.2)	93 (33.2)	100 (35.7)	9 (3.2)
I feel virtual internship is largely an independent work	22 (7.9)	42 (15.0)	105 (37.5)	90 (32.1)	21 (7.5)
Virtual internship helped me create my own professional environment	27 (9.6)	48 (17.1)	113 (40.4)	90 (32.1)	2 (.7)
Virtual internship provides an opportunity to observe the mentors and my peer learners' teaching skills	39 (13.9)	52 (18.6)	114 (40.7)	67 (23.9)	8 (2.9)
Virtual internship provides me expertise in technological pedagogical and content knowledge (TPACK)	27 (9.6)	30 (10.7)	90 (32.1)	110 (39.3)	23 (8.2)
I may recommend other teacher trainees to undergo the virtual internship	46 (16.4)	55 (19.6)	109 (38.9)	61 (21.8)	9 (3.2)

Statement 1: Virtual internship was more convenient and flexible

Among 280 pre-service teachers, 20.7 per cent agreed, and .7 per cent strongly agreed that they found it more convenient and flexible, 31.8 per cent disagreed, 9.6 per cent strongly disagreed, and 37.1 per cent gave neutral responses. In terms of the hours of work, internship timelines, mode of practices, resource use they have more flexibility in virtual internship.

Statement 2: Virtual internship made possible for all subject streams in the pre-service education

Among 280 pre-service teachers, 23.2 per cent of the respondents agreed, and 2.1 per cent strongly agreed, 31.1 per cent disagreed, 10.7 per cent strongly disagreed, and 32.9 per cent gave neutral responses. Virtual internship does not provide much emphasis on science subjects as it needs hands-on teaching activities. These responses happened due to the limitations of the virtual internship. A virtual internship is not possible for all the subjects as well as all the modes of teaching.

Statement 3: Virtual internship provides space for developing rapport with students

Among 280 pre-service teachers, 21.1 per cent of respondents agreed, and 1.4 per cent strongly agreed, 31.1 per cent disagreed, 12.1 per cent strongly disagreed, and 34.3 per cent gave neutral responses. The rapport between a teacher and student can be an

important factor in individual students' overall learning and success. It shows that building *rapport online* is tough sledding; one-to-one interactions among teachers and students are crucial for learning. Some pre-service teachers cannot be familiar with organising virtual classes in an interactive or engaging mode.

Statement 4: Virtual internship makes me explore more and more online teaching tools

Among 280 pre-service teachers, 43.6 per cent of the respondents agreed, and 7.9 per cent strongly agreed, 13.6 per cent disagreed, 8.6 per cent strongly disagreed, and 26.4 per cent gave neutral responses. Virtual internships provide an opportunity to use technology and hence learn multiple skills. So, it is beneficial for the students. Internship in an online mode provides a lot of scope to pre-service teachers to explore more online teaching, learning, and assessment tools.

Statement 5: I believe that undergoing virtual internship is less expensive than the face-to-face internship programme

Among 280 pre-service teachers, 31.1 per cent of the respondents agreed, and 8.2 per cent strongly agreed, 20.7 per cent disagreed, 6.8 per cent strongly disagreed, and 33.2 per cent gave neutral responses. Unlike traditional internships, virtual internships will not be expected to incur many expenses. They can work from anywhere in the world, meaning they can save money on rent and travel costs. It provides an opportunity to reduce money and wastage of time.

Statement 6: I believe that virtual internship is more systematic in execution and conduction than the face-to-face internship

Among 280 pre-service teachers, 16.4 per cent of the respondents agreed, and 4.6 per cent strongly agreed, 34.3 per cent disagreed, 12.9 per cent strongly disagreed, and 31.8 per cent gave neutral responses. Because of quick virtual adaptation in the internship field, it was not systematic in execution and conduction. Parallelly we can plan to execute online internship.

Statement 7: Virtual internship provides a chance for us to develop e-resources such as audio, video, text materials

Among 280 pre-service teachers, 43.9 per cent of the respondents agreed, and 12.9 per cent strongly agreed, 4.6 per cent disagreed, 8.6 per cent strongly disagreed, and 30 per cent gave neutral responses. Virtual internships allow using e-resources as it is necessary for online internships. Teachers can develop a ppt, video materials as part of the online teaching. Similarly, in virtual internship, pre-service teachers can develop e-resources such as ppt, text, video, and audio files.

Statement 8: Virtual internship helps me to enhance my digital skills.

Among 280 pre-service teachers, 49.6 per cent of the respondents agreed, and 12.1 per cent strongly agreed, 5.4 per cent disagreed, 7.1 per cent strongly disagreed, and 25.7 per cent gave neutral responses. An internship can be organised through Skype, Google Meet, mail, etc. This enhances their digital skills. Virtual internship provides all the pre-service teachers an opportunity to explore and enhance their digital skills.

Statement 9: Virtual internship provides me a chance to explore more about the novel digital pedagogy

Among 280 pre-service teachers, 40.4 per cent of the respondents agreed, and 7.5 per cent strongly agreed, 12.9 per cent disagreed, 7.5 per cent strongly disagreed, and 31.8 per cent gave neutral responses. With the growing technology and widespread use of the internet, it is essential to know more about novel digital pedagogy, and virtual internships provide a chance for the same. The pre-service teachers were trained in the digital pedagogy aspects by their institutions before going in for virtual internship.

Statement 10: I feel virtual internships are more comfortable for students who live in a remote area

Among 280 pre-service teachers, 13.9 per cent of the respondents agreed, and 3.6 per cent strongly agreed, 36.8 per cent

disagreed, 17.5 per cent strongly disagreed, and 28.2 per cent gave neutral responses. Inadequate infrastructure, lack of strong internet connectivity, and no electricity in remote village areas affect their internship programmes. So, some of the trainees who live in a remote area do not feel comfortable.

Statement 11: Virtual internship is a positive deviation from a traditional internship

Among 280 pre-service teachers, 36.8 per cent of the respondents agreed, and 4.3 per cent strongly agreed, 15.4 per cent disagreed, 11.4 per cent strongly disagreed, and 32.1 per cent gave neutral responses. To cope with the challenges, it's necessary to have a better deviation towards online teaching and learning. A lot of the samples have a positive way of responding to this statement due to the alternative opportunity to undergo the internship.

Statement 12: Virtual internship offers a new experience for me to explore novel ideas in the pedagogical and technological aspects

Among 280 pre-service teachers, 41.8 per cent of the respondents agreed, and 7.1 per cent strongly agreed, 9.6 per cent disagreed, 8.2 per cent strongly disagreed, and 33.2 per cent gave neutral responses. Virtual internships provide an opportunity to make use of many novel ideas in technology and pedagogy and its benefits for the students. Most of the respondents responded positively.

Statement 13: Virtual internship provides more satisfaction and better adjustment in the classroom perspectives

Among 280 pre-service teachers, 19.6 per cent of the respondents agreed, and 2.9 per cent strongly agreed, 34.3 per cent disagreed, 14.3 per cent strongly disagreed, and 28.9 per cent gave neutral responses. Virtual internship does not provide face-to-face interaction with students, so they are not satisfied with the classroom perspective. Most of the respondents shared a negative feeling towards this statement as they are comfortable with face-to-face internship as compared to virtual internship.

Statement 14: I am attracted to virtual internship due to the novelty of its various features

Out of 280 pre-service teachers, 28.6 per cent respondents agreed, and 3.6 per cent strongly agreed, 17.9 per cent disagreed, 12.5 per cent strongly disagreed, and 37.5 per cent gave neutral responses. Digital technology is growing day by day, and virtual internships provide a chance to excel in it.

Statement 15: Virtual internship provides diversity in teaching and learning

Among 280 pre-service teachers, 38.6 per cent of the respondents agreed, and 5 per cent strongly agreed, 16.8 per cent disagreed, 8.9 per cent strongly disagreed, and 30.7 gave neutral responses. Internship in the online mode allows diversity in teaching and learning tools as well as pedagogical practices.

Statement 16: Virtual internship provides us space to rectify the mistakes of recorded classes easily before sending videos to our students

Among 280 pre-service teachers, 38.9 per cent of the respondents agreed, and 8.2 per cent strongly agreed, 10.4 per cent disagreed, 10 per cent strongly disagreed, and 32.5 per cent gave neutral responses. Even if a mistake happens during the class lecture, the trainee can edit or rectify the mistake in the recorded video; after that, it can be shared with the students.

Statement 17: I feel more comfortable using virtual board-based digital writing than normal blackboard writing.

Out of 280 pre-service teachers, 13.6 per cent of the respondents agreed, and 2.9 per cent strongly agreed, 38.2 per cent disagreed, 15 per cent strongly disagreed, and 30.4 per cent gave neutral responses. The virtual board has many advantages over a normal blackboard, but due to some technical or internet issues and difficulties for them, most the respondents felt the virtual digital board was not more comfortable.

Statement 18: Virtual internship reduces stress and anxiety

Out of 280 pre-service teachers, 16.4 per cent of the respondents agreed, and 3.2 per cent strongly agreed, 30.7 per cent disagreed, 12.1 per cent strongly disagreed, and 37.5 per cent gave neutral responses. Experience in practice decreases anxiety among teachers. But technical problems and being a novice possibly causes more anxiety among teachers. Being uncomfortable of virtual internship creates stress and anxiety for pre-service teachers.

Statement 19: Virtual internship increased my communication skills

Out of 280 pre-service teachers, 18.2 per cent agreed, and .7 per cent strongly agreed, 32.9 per cent disagreed, 15.4 per cent strongly disagreed, and 32.9 per cent gave neutral responses. Virtual internship does not provide much chance for improvement of communication skills due to lack of face-to-face interaction and a professional environment.

Statement 20: I think a virtual internship overcomes many financial and geographic barriers that students face

Out of 280 pre-service teachers, 25.4 per cent of the respondents agreed, and 8.6 per cent strongly agreed, 16.1 per cent disagreed, 8.6 per cent strongly disagreed, and 41.4 per cent gave neutral responses. Virtual internships are not useful for students who are facing both geographic and economic challenges.

Statement 21: I think completing an internship online requires sufficient knowledge of internet-related skills

Out of 280 pre-service teachers, 38.6 per cent of the respondents agreed, and 10.4 per cent strongly agreed, 8.9per cent disagreed, 10 per cent strongly disagreed, and 32.1 per cent gave neutral responses. To excel in a virtual internship, internet-related skills are needed. These basic computer skills when utilised for processing and presenting information help students achieve success.

Statement 22: Virtual internship increased my teaching confidence level

Out of 280 pre-service teachers, 17.5 per cent of the respondents agreed, and 2.1 per cent strongly agreed, 30 per cent disagreed, 14.6 per cent strongly disagreed, and 35.7 per cent gave neutral responses. It's easy to lose confidence if we have stress and difficulties. So, it's difficult to gain confidence without proper facilities for the student. Also, the pre-service teachers do not have a proper feedback system to enhance teaching competency level through this virtual internship.

Statement 23: Virtual internship helped manage time wisely

Out of 280 pre-service teachers, 25 per cent of the respondents agreed, and 2.9 per cent strongly agreed, 26.1 per cent disagreed, 8.9 per cent strongly disagreed, and 37.1 per cent gave neutral responses. Virtual internships were more flexible in the case of time and location. It leads to wise time management.

Statement 24: Virtual internship provides multiple skills-based learning opportunities

Out of 280 pre-service teachers, 35.7 per cent of the respondents agreed, and 3.2 per cent strongly agreed, 18.2 per cent disagreed, 9.6 per cent strongly disagreed, and 33.2 per cent gave neutral responses. Through virtual internship, the trainees gained more skills, and these skills help them in future job opportunities.

Statement 25: I feel virtual internship is largely an independent work

Among 280 pre-service teachers, 32.1 per cent of the respondents agreed, 7.5 per cent strongly agreed, 15 per cent disagreed, 7.9 per cent strongly disagreed, and 37.5 per cent gave neutral responses. Since *virtual* classes often involve very little discussion and interaction with students and instructors, and no face-to-face interaction, some students feel isolated when they begin taking courses *online*. It provides a lot of space for independent work only.

Statement 26: Virtual internship helped me create my own professional environment

Out of 280 pre-service teachers, 32.1 per cent of the respondents agreed, and .7 per cent strongly agreed, 17.1 per cent disagreed, 9.6 per cent strongly disagreed, and 40.4

per cent gave neutral responses. A virtual internship provides a lot of professional experience, much like a traditional internship to the trainees.

Statement 27: Virtual internship provides an opportunity to observe the mentors and my peer learners teaching skills

Among 280 pre-service teachers, 23.9 per cent of the respondents agreed, and 2.9 per cent strongly agreed, 18.6 per cent disagreed, 13.9 per cent strongly disagreed, and 40.7 per cent gave neutral responses. All the trainees were undergoing virtual internship at the same time, so there is no opportunity for them to observe other peer trainees' sessions.

Statement 28: Virtual internship provides me expertise in the technological pedagogical and content knowledge (TPACK)

Among 280 pre-service teachers, 39.3 per cent of the respondents agreed, and 8.2 per cent strongly agreed, 10.7 per cent disagreed, 9.6 per cent strongly disagreed, and 32.1 per cent gave neutral responses. Virtual internships provide expertise in TPACK, including active engagement in their professional development and authentic learning experiences to make learning meaningful.

Statement 29: I may recommend other teacher trainees to undergo virtual internship

Out of 280 pre-service teachers, 21.8 per cent of the respondents agreed, and 3.2 per cent strongly agreed, 19.6 per cent disagreed, and 16.4 per cent strongly disagreed, and 38.9 per cent gave neutral responses. Virtual internship also has its own set of positives and negatives. Understanding both positive and negative sides and finding a better solution for these problems results in a good start for virtual internship. Most of the trainees were not satisfied with this virtual internship. Due to that, they are not ready to suggest undergoing virtual internship to others.

After analysing the whole response, the output had shown that the majority of the pre-service teachers have a moderate attitude towards virtual internship, the remaining large portion of students have a low-level attitude towards virtual internship, and a few students have a high level of attitude towards virtual internship.

Research Question 6: What is the level of B.Ed. students' perception towards virtual internship?

Table 6: *Analysis of sample in terms of the level of perception towards virtual internship*

Level of perception towards virtual internship	No. of pre-service teachers	Percentage (%)
Low	50	17.9
Moderate	186	66.4
High	44	15.7

The above table presents the analysis of the sample in terms of the level of pre-service teachers' perception towards virtual internships. As seen from the above table, 50 (17.9%) of the sample have low level, 186 (66.4%) of the sample have moderate level, and 44 (15.7%) of the sample have a high level of perception towards virtual internship.

Discussion of the result

This study attempted to find the perception of pre-service teachers towards virtual internships. This study intended to examine how students felt during virtual internship and to answer research questions on stress, concentration, difficulties, student convenience, etc., in appearing for online internship. As educational systems are adopting new and innovative methods, it is important to know pre-service teachers' perceptions of virtual internship. It is crucial to know how they perceive the different features of virtual internship. With widespread and increasing use of digital systems in higher education institutions, this study has identified several factors to be considered to support the successful implementation of virtual internships from the perspective of pre-service teachers.

Educational implications

As the results of this study showed, students report that they are moderately satisfied with virtual internships and have mixed responses towards virtual internships. The virtual internship has pedagogical implications.

- The study helps the educationist to reform the education system giving due weightage to virtual internship.
- This study helps to measure the level of perceptions of virtual internships among pre-service teachers.
- This study can view from a global perspective.
- It is significant to place a greater role in virtual internship, As technology increases, online internships cannot be neglected.
- As virtual internship is not time and space-bound, it is useful for open and distance learning. It will increase enrolment in higher education and increase the possibility of earning and learning.
- Implementing virtual internship in the educational field develops a techno culture in students, leading to adaptation of virtual learning platforms for learning.
- Virtual internship promotes the globalisation of education and the exchange of knowledge resources.
- Virtual internship provides more space for self-assessment, leading to immediate self-correction and improvement in teaching and learning.
- Virtual internship widens the reach of education by providing an opportunity for rural and remote area students to participate in education.
- Through virtual internship, a student can improve their computer use for other educational purposes.
- The principals of collaborative schools and student teachers should be briefed before the internship programme so that all activities can be conducted in a smooth manner.

Suggestions of the study

The findings of this study provide a foundation for future research, examining more specific factors that promote and inhibit student use of virtual internship and make them more comfortable about virtual internship in their higher education.

- As internship plays a vital role in higher education and technology has a great influence in education, it is necessary to provide adequate knowledge and awareness about new techniques. So, future research is necessary to perform more extensive case studies that can allow a little more deep and detailed exploration of the new generation students' opinions and views on a new system of internship techniques.
- This study may be extended to a large sample taking some more variables so as to represent a diversified population of participants. Owing to the constraint of time and money, only a few variables and few colleges could be included in this study. It is better to extend the study to various samples such as pre-service teachers in other districts, states, etc., and the people who are trying for professional jobs.
- Future research might focus on underserved, at-risk students and students with special needs and should ensure whether the virtual internship system is suitable for those students as mentioned above.
- The coming research should investigate the problem of fear of internet access, technical aptitude, independent learning skill among the students, and how to provide proper supervision to solve these problems.
- Future research should investigate whether a virtual internship is beneficial for reducing drop out of students between higher education courses.
- Further study should be conducted to identify the technical barriers of conducting virtual internships and how

to overcome them.

- Further research should be organised to find out the influence of virtual internships on the academic performance and behaviour of the students and actual practicing of school teachers.
- Future research should be conducted to identify the stressful factors of virtual internships.
- Future research should be conducted in an experimental manner to know the effectiveness of integrating virtual internship techniques on enhancing students' academic achievement in higher education settings.
- A future study should be conducted to know the possibilities and limitations of virtual internships in open and distance learning, blended learning and flipped classroom, etc.
- Future studies should be conducted to know how virtual internship is useful for the individual subject.

Conclusion

This study has some implications for educators and teacher preparation programmes. Firstly, participants in this study had favourable experiences with virtual internship, and each of them saw value in this new experience. It may not be possible for all teacher preparation programmes to partner with virtual schools to create a similar internship experience; virtual internships should at least become a part of the conversation regarding the future of teacher education (Kennedy et al., 2013). As online courses continue to proliferate in both public schools and universities, more consideration should be given to the preparation of quality teachers in this environment (Thiyagu, 2010). Online learning continues to be a global phenomenon in a variety of fields, especially in education (Ulusoy, 2016). Often, education is a field that remains reactive instead of proactive. Technological advances have changed the way that society operates, yet, somewhat strangely, most teacher preparation programmes continue to exist in the same fashion that they did 30 years ago (Chennat, 2014). This study highlights the value of a virtual internship experience as at least a component of teacher preparation programmes (Vijila and Thiyagu, 2019). Virtual schools are here to stay, so the time is now for teacher education programmes to begin actively considering ways to prepare future teachers for high-quality instruction in online classrooms (Kapur, 2018). The results of this study give a foundation for future research, examining more specific factors that promote and inhibit student use of virtual internship as well as make them more comfortable in a virtual internship in their higher education. Let us overcome the challenges of the future.

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Role of Short Stories in Developing English Listening Skill

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Abstract

The principal aim of this paper is to highlight the importance of short stories in teaching English listening skills. For this, the investigator adopted qualitative approach to analyse the classroom observations and experiences at the elementary and secondary level in district Kargil (Ladakh). It is found that storytelling or using short stories in language classes are useful for teaching language skills, particularly listening skills, as this technique reduces all the barriers for teaching and learning of the same.
Keywords: Storytelling, Teaching English, Listening Skill &and Classroom Experiences

Introduction

Second language learning is a psychological process just like the acquisition of the first language or mother tongue. There are two prominent psychological thoughts: the first one is behaviourism, which focusses on 'habit formation' for acquisition of L2 and the second one is 'cognitive psychology' with the concept of 'mental ability' to learn a new language. But there is a need for some techniques and strategies to strengthen these concepts for better learning of a language. Consequently, by considering the ideas of these two schools of thoughts, educationists and linguists have formed many strategies such as using cooperative learning, ICT tools, literature and storytelling, etc.

Literature plays a vital role in language teaching and among all literary genres, the contribution of short stories for learning language skills, particularly listening skills, is worth discussing.

Listening skill

Listening is the first of the four basic skills of a language. When people are learning a first language, they first hear it spoken. Hearing is not listening, but a part of listening. It is a narrow term as compared to listening. Hearing is accidental, involuntary and effortless but listening is focussed, voluntary and intentional. Hearing means physically present but mentally absent, and listening means to be present both physically and mentally. According to Roland Barthes, "Hearing is a physiological phenomenon; listening is a psychological act." One of the main objectives of teaching English is to enable students to understand everyday English spoken at a normal pace.

To become a fluent speaker in English, one needs to develop strong listening skills. Many people say speaking is the most stressful part of learning a second language but it is not so as studies revealed that listening is the most stressful part. If someone is not a good listener then the person may not be a good

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speaker. On the contrary, a good listener may be a good speaker as well. Different studies point out that despite being the most important language skill, listening does not get full attention in language classes. "Listening skills in language teaching have been neglected and shifted to a secondary position after speaking and writing. This is a surprising fact given that it is the skill that is most often used in communication. It is thought that about forty per cent of our daily communication is spent on listening, thirty-five per cent on speaking , sixteen per cent on reading, and only nine per cent on writing" (Khorashadyzedeh, 2014).

Listening is categorised as active and passive. In active listening, the listeners pay 100 per cent attention. It includes hearing, interpreting, understanding, evaluating, responding and remembering. These can be called by its different stages. On the other hand, passive listening is not serious listening. It may be a formality only, where the listener is only listening subconsciously. The students should be exposed to listening to the English language, through:

(a) lessons given by the teacher.
(b) interaction among the students.
(c) lectures given by prominent speakers.
(d) English films for arranged in the school.
(e) audio/video cassettes prepared by standard production houses.
(d) short-stories of about five-ten minutes.

Using short stories for listening skills

Short story

A short story is a short fictional narrative prose with a few characters centred around one single event. In other words, it can be termed as 'a record of happenings' and 'the simplest form of fiction'. According to Collins English Dictionary, "A Short Story is a written story about imaginary events that is only a few pages long." It has an introduction, body and conclusion. It is a brief form of a novel but opposite in length, character and action, etc. In the present day world, it is becoming more popular than the novel as it can be read in one sitting.

A short story is mostly narrated either in first person or third person. It is written in an easy language and in a point to point manner. Normally, a short story has two to four scenes and its ideal length is 2000-6000 words. The main purpose of a short story is to give a specific message within a limited time which is why it is written in limited length. A short story is interesting in nature and a good source of enjoyment and inspiration too. All these distinct features make it the most favourite form of reading and writing in modern age literature. Short stories are of various types – adventure, love story, detective, psychological, social, scientific, etc.

Short story supports listening elements Ernest Hemingway, the famous American short story writer, strongly supports the listening process and says, "I like to listen. I have learned a great deal from listening carefully. Most people never listen." His statement depicts the relationship between a short story and listening.

Classroom observations to examine the role of short stories in teaching listening skills The researcher has done some classroom observations to point out the magical effects of using short stories to improve the listening skill of learners. These observations were made in the elementary and secondary classes (Class 6 to 10) of English language in different schools of Kargil district. The age of these students were mostly 10 to 16 years. The researcher chose moral stories like 'The Greedy Dog', 'The Thirsty Crow', 'The Fox and the Grapes', 'The Golden Egg', etc. and read out any one at the beginning of every language class with the aim to motivate the learners as well as to enhance their listening skill. The researcher also used to tell another story in the same class to re-activate the de-motivated learners in rare cases. The duration of listening is five minutes and students have to listen and listen only.

Subsequently, the researcher has recorded the following points that reveal how short stories support listening skills.

- **Lively and enjoyable classroom:** When a teacher begins to tell a short story in class, the atmosphere of the classroom changes and every student is found involved in the listening process. They feel happy and enjoy both physically and psychologically. "The lively atmosphere and real life environment created by stories encourages the students to talk and discuss with each other. When telling and listening to a story, the learner will easily be plunged into the plots and the scene and forget about themselves, which will, to a great degree, relieve their nervousness" (Jianing, Xu. 2007).
- **Attract less motivated learners:** Short stories attract less motivated learners and maintain key physical signs of listening, such as eye contact of the students in class. As a result they also become good listeners. This trend helps them to improve their understanding, pronunciation, using intonation, words, sentence stress, etc.
- **Focus and attention:** "Listening is to pay attention to somebody or something that you can hear, to take notice of what somebody says" (Oxford Advance Learners Dictionary). It is observed that listening happens in an attentive and focussed situation only and a short story energises its audience to listen more and more with total attention. The students look attentive and relaxed while telling short stories in their classes.
- **Maintaining silence:** Listening flourishes better in a silent situation and silence is considered golden for the sake of listening. The words, 'silent' and 'listen' have the same letters and they are considered as two sides of the same coin. In this context, short stories are considered an effective tool for maintaining classroom silence in which listening happens in a meaningful way.
- **Interruption free class:** Frequent interruptions are not so good for the listening process and it is found that in short story classes, students interrupt less and cooperate more with their teachers. It makes interruption limited.
- **Promotes intention:** Learning listening skill is not possible without the listener's intention. A short story proves a better tool to strengthen the intention of students to listen more and more.
- **Questioning skill: A** short story encourages students to ask questions, such as after that...?, and...?, please tell more...?, how is it so...?, what happens then...?, etc. These kind of questions indicate how much the students are involved in the listening process and these work as reinforcers rather than interrupters.
- **Verbal feedback:** Short stories promote the culture of providing feedback. Positive reinforcements, such as hmm, really, did that happen, etc. are mostly seen while storytelling. These sort of verbal feedbacks also satisfy the teachers that the students are conscious in listening.
- **Non-verbal feedback:** Non-verbal language like smiling, eye contact, correct body posture, etc. are also observed while telling stories. These are the appropriate responses and indications of the students' involvement in listening too.
- **Sign of respect:** Listening is a sign of respect and it is seen at its peak in story telling classes. In such classes, every student tries to give utmost respect to their teachers, so that they may not be hurt and the storytelling process continues.
- **Promoting the culture of listening more:** Language learning depends on listening and short stories can be an input to practice language skills especially listening skills.

Story time is an important listening activity, which with the right support, helps children in building listening skills. Humans have two ears and one mouth for a reason and that is to listen more and talk less as James writes, "Be quick to listen, slow to speak" (1:19).

- **Confidence building for speaking:** One who is good at listening may be good at speaking also. It is commonly observed in language classes that after listening to a complete story in English or Urdu, the students look confident and begin to interact with the teacher in the respective language. It was a moment of thought for the teacher that the students were not so confident in speaking before the class.

Beside the above mentioned experiences, there may be many other benefits of short stories for the proper nurturing of listening skills and to remove the difficulties of listening. "If listening to stories becomes a habit, it can help them become better listeners as it provides them the necessary training to listen and understand more, while becoming aware of rhythm, intonation and pronunciation of the target language" (Brewster et al.).

Conclusion

It becomes clear that listening is the base of learning a second language and learning listening skill is a psychological process. So, different teachers use different strategies and techniques to strengthen the listening skill of students. But many studies disclose that storytelling or using short stories in language classes is the best technique for teaching language skills, especially listening skills, even in this digital era too. In addition to this, the classroom experiences and observations in the elementary and secondary schools of the northern most Indian district, Kargil (Ladakh), shared by the researcher also supports the fact that language teachers can reduce all kinds of barriers for teaching and learning of listening skills by using short stories or story telling technique. These barriers include physical barriers (noise, interruption and uncomfortable environment, etc.), psychological barriers (wandering attention, personal anxiety and negative attitude, etc.), and lingual barriers (poor listening, mispronouncing, delivery too fast or too slow, etc.). At the end of the day, it can be said that teachers and educators need to focus on improving t5he listening skills of students by using different techniques, especially story-telling.

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Learning Anatomical Structures of Dicot Plants using Jigsaw Puzzles among Middle School Students

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Abstract

Teachers must try different pedagogical strategies in their classrooms according to the nature and need of their learners. The major objective of the study is to assess the effectiveness of jigsaw puzzles in learning the transverse sections of a typical dicotyledon (dicot) stem and root, based on drawing and labelling skills among Class 8 students. The study adopted a single group pretest post-test experimental design with convenience sample of 11 boys and 14 girl students of Class 8 of a rural school in Tamil Nadu. The result indicated a significant positive effect of the jigsaw puzzle method in learning the transverse sections of a typical dicot stem and root based on drawing and labelling skills. Boys and girls did not differ significantly in their performance before and after the intervention in both the drawing and labelling skills. The researcher recommended the adoption of the jigsaw puzzle method in learning the concepts of anatomical structures at high and higher secondary level.
Keywords: Jigsaw Puzzles, Teaching Strategy, Plant Anatomy, Transverse Section, Root Section, Stem Section

Introduction

Life would not be possible without plants. Many have re-realised the importance of plants as a living oxygen factory during the COVID-19 pandemic. The plant anatomy is the heart of modern Botany (Sokoloff et al., 2021). Plant anatomy describes the internal structure and organisation of the cells, tissues and organs of plants in relation to their development and function (Crang et al., 2018). Angiosperms are the recently evolved well adapted flowering plants on this planet. The number of cotyledons found in the embryo is the actual basis for distinguishing the two classes of angiosperms, monocotyledon (one cotyledon) and dicotyledon (two cotyledons). The stem and root anatomical structures that is, the transverse section of the typical dicot plants were considered for the present study.

Probable learning difficulties in learning anatomical structures

Students were probably coming across such anatomical technical terms for the first time. They might not know the fundamentals of such diagrams. The textbook provided to the students did not contain the plant morphology and the outline of the diagram for the concerned anatomical structures. Therefore, students would not have realised the importance of the diagram and simply skipped learning them. The teacher also would not have emphasised on the minute details of the diagram when teaching such anatomical concepts and not introduced the etymological meaning of the term involved. Perhaps the students were not given enough time to learn anatomy, which made them blank or confused while drawing and

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labelling. The conventions used in a diagram also affected diagram comprehension, and results show students had most difficulty comprehending diagrams (Kottmeyer et al., 2020). Biology students found it difficult to interpret, understand, and generate visualisations of the presented plants' photographs, indicating that their visual literacy in plant anatomy was insufficient. The primary reason for students' insufficient visual literacy was lack of conceptual understanding that resulted in their inability to apply and integrate knowledge (Susiyawati & Treagust, 2021).

Common teaching practices used in learning Biology

Consideration of the botanical content taught is less critical than the methods used to teach that content (Uno, 2009). The cognitive abilities of biology prospective teachers in plant anatomy must have knowledge of using the framework of revised bloom taxonomy (Setiono et al., 2017). There are some common teaching-learning approaches in anatomical structures. These may be classified into direct teaching in theory classes, practical classes in the laboratory, using teaching aids, self-learning approaches, indirect approaches, etc. One of the easiest ways is to draw the anatomical structures on the black/ white board with oral descriptions and may or may not draw coloured variations. Another common way is to teach them in the biology laboratory with the help of dissections of specific parts through microscopes, which may be readymade or freshly prepared mounts. The students section plant material and prepare specimens to view under a bright field microscope. Using a camera or cell phone, images of microscope slide contents allow students to label plant parts and engage in discussions with peers (Koehler et al., 2020). Moreover, such practicals can be done with the help of USB digital microscope connected with laptops (Dickerson et al., 2007).

Biology teachers should choose suitable equipment for the course, subject, students' level, setting and objectives. They should also be able to develop teaching materials in line with learning outcomes (Sayan & Mertoğlu, 2020). Teaching aids like charts, objects, models and specimens (Heiss, 1938), 3D models (Bryce et al., 2016), and digital 3D models can be used to allow learners to interact and visually examine the spatial structure, composition and arrangement of objects (Siiman et al., 2014). YouTube videos play a significant role in motivating and engaging students in the learning process, especially with the low-performing students (Cherif et al., 2014). The students' worksheet developed was feasible and able to empower the students' science process skills (Rahayu et al., 2018; Patresia et al., 2020). The teachers insist on students to draw those anatomical structures in the observation record note (Dempsey & Betz, 2001). Quizzes and assignments also play a vital role in leaning anatomical structures.

Students under multimedia aided instructions had better outcome than their colleagues in traditional teaching method (Kareem, 2018). The smart class/ interactive white board class has a positive impact on learning environment as it has enhanced the learning process (Choudhuri & Husain, 2017). There was a significant difference among the students' academic performance in the conventional and smart classroom. In addition, the use of smart classroom has greatly improved students' performance (Phoong et al., 2019). The smart board use in biology classes allows understanding of subjects more easily and rapidly, avoiding time consumption and increasing students' motivation and interest via visual elements (Yapici & Karakoyun, 2016). Other computer-based technique (Wang et al., 2020) and distance-based learning setting for learning biology (Hallyburton & Lunsford, 2013) can also be useful in learning anatomical structures. The use of the jigsaw as instructional strategy enhances students' achievement (Tabiolo & Rogayan, 2019).

This jigsaw puzzle applied to mathematics increases achievement scores (Bubikova-Moan & Opheim, 2020). Jigsaw cooperative learning improves biology lab courses (Colosi & Zales, 1998). The jigsaw puzzles facilitated active learning, enhanced problem-solving skills, and encouraged group discussions (Rodenbaugh et al., 2015).

Jigsaw puzzle

The investigator applied the jigsaw puzzle method to learn the anatomy of plants especially in learning and remembering transverse sections of dicot stem and roots of longer duration. Preparing coloured enlarged anatomical structures on thick charts, then cutting these structures into small parts possibly separating each cell, are referred to as the parts of a jigsaw puzzle. Arranging, assembling or recreating the anatomical structures drawn on the charts is the solution to the jigsaw puzzles in a gaming manner. Jigsaw puzzles will be useful in learning internal structure without dissecting or destroying plants or plant parts. The investigator strongly believes that it is one of the safest methods in learning anatomy besides handing blades, needles, glass items and microscope, etc. The concept of transverse sections of typical dicot stem and root was presented in pages 181-183 of Chapter 3 Class 8, Term 1, Tamil medium Science textbook of the Tamil Nadu State Board and that was considered for the intervention of the jigsaw puzzle method.

Objectives of the study

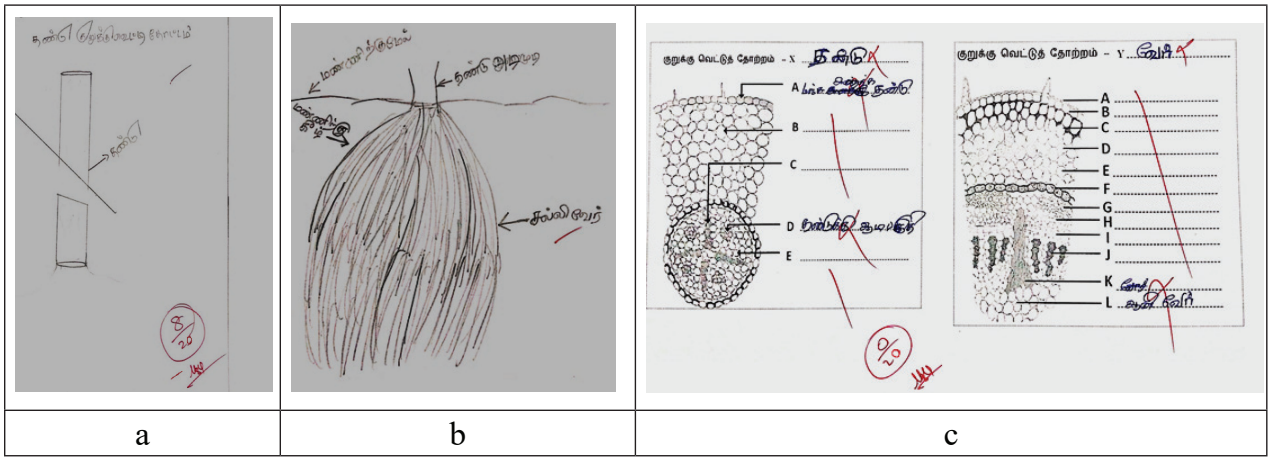
1. To introduce and implement jigsaw puzzle method to students of Class 8 of Panchayat Union Middle School, Ammangudi, Thiruvidaimarudur block of Thanjavur district in Tamil Nadu.
2. To find out whether there is a significant difference in performance between boys and girls, before and after the intervention of jigsaw puzzles in learning the transverse sections of typical dicot stem and root based on drawing and labelling skills.
3. To assess the effectiveness of the jigsaw puzzles in learning the transverse sections of typical dicot stem and root based on drawing and labelling skills among Class 8 students.

Research method and sample of the study

The study adopted single group pretest post-test experimental design with convenience sampling of 25 students (11 boys and 14 girls), the total strength of Class 8 of a rural school in Tamil Nadu, India.

Research tool

A pretest tool was developed, which contained two questions in Tamil, for testing the drawing skills of transverse section of typical dicot stem and root. The investigator wrote the questions on the blackboard and instructed students to draw in the provided A4 blank sheet with 0.7 mm lead refill pencil. The rubric for assessing the drawing skills comprised of the heading of the diagram, diagram proportion, clarity, legibility (neither dark nor light) and one-sided accurate marking used for labelling, each count for 4 marks for a total of 20 marks. The stem and root diagrams were given without labelling for testing the labelling skills of the students. The scoring of the labelling skills contained 19 fill in the blanks questions with 1 mark each and 1 mark was allotted for neat handwriting resulting in a total of 20 marks. The same tools were used for post-test to find the effectiveness of the intervention given to the students. Pretest samples are shown in Figure 1.



a b c

Figure 1. Pretest samples: a. transverse section of stem; b. transverse section of root; and c. labelling skill

Intervention

The investigator discussed the fundamentals in anatomy of plants along with the rubric and scoring of the tools after pretest. Six mixed gender groups of four each were formed. The last one had five members for collaborative learning. Students were instructed to draw the enlarged coloured transverse sections of typical dicot stem and root on the provided thick charts without labelling and heading with the help of the prescribed textbook. It took about an hour to complete this drawing task. The students were asked to cut the charts into pieces in such a way that each small portion possibly signified a single cell. These pieces were put into a small box carefully without misplacing any small piece. Six small jigsaw puzzle boxes of three each for stem and roots were obtained as shown in Figure 2. All six groups were instructed to assemble the small pieces to form the complete transverse section as it was in the chart before being cut into small pieces as shown in Figure 3.

These jigsaw puzzles were interchanged group wise in such a way that the groups that prepared the stem puzzle would get the root puzzle prepared by the other team. The students were encouraged individually also to solve the jigsaw puzzles. The investigator instructed students to learn the naming of various parts while solving these puzzles. The investigator and science teacher of the school observed that the students were really active in creating and solving jigsaw puzzles. Such tasks definitely increased their interest, cooperation, self-confidence through a gaming environment. The next day, a post-test was conducted and the samples as shown in Figure 4 were shown.

a

b

c

d

e

f

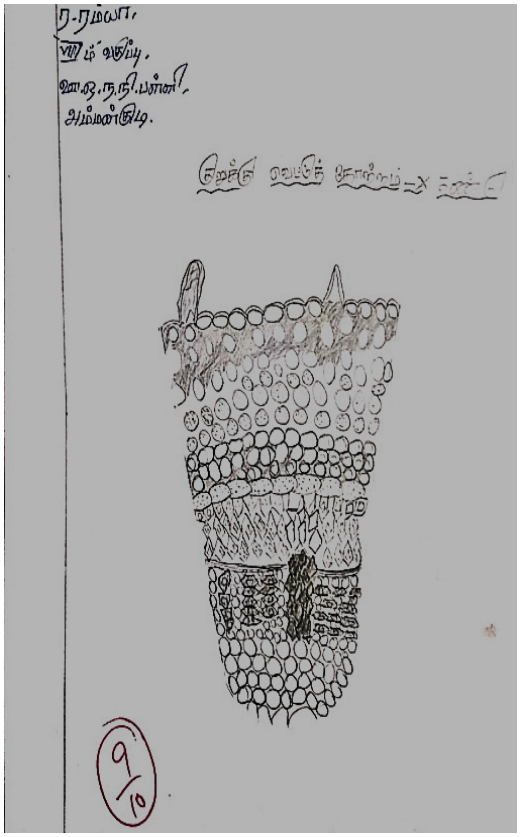
g

h

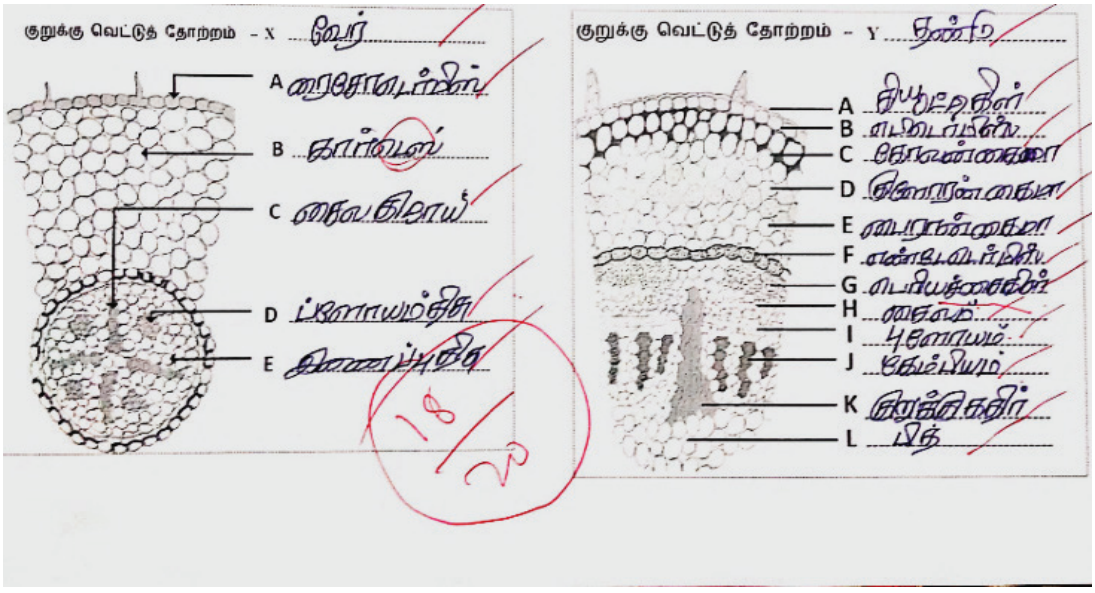
Figure 2. Steps in creating jigsaw puzzles: a. drawing transverse stem structure; b. drawing transverse root structure; c. complete transverse section of stem drawn; d. complete transverse section of root drawn; e & f. cutting the transverse section into small pieces; g. jigsaw puzzle box for stem; and h. jigsaw puzzle box for root

a b c d

Figure 3. Solving jigsaw puzzles: a. assembling the dicot stem pieces; b. assembling the dicot root pieces; c. solved stem jigsaw puzzle; and d. solved root jigsaw puzzle



a



c

Figure 4. Post-test samples: a. transverse section of stem; b. transverse section of root; and c. labelling skill

Results and discussions

The pretest and post-test scores of drawing and labelling skills were evaluated, tabulated and applied for further descriptive and differential analysis.

Table 1. Descriptive and differential analysis of boys and girls in the pretest and post-test scores for drawing and labelling skill

Variable	Boys		Girls		t - value	df
	M	SD	M	SD		
Pretest drawing skill 3.45 1.293			4.29	1.326	1.577	23
Posttest drawing skill	13.45	2.979	14.57	1.989	1.070	23
Pretest labelling skill	0.55	1.809	0.71	1.858	0.229	23
Posttest labelling skill	15.00	3.924	16.93	1.730	1.653	23

Boys and girls did not differ significantly in their performance before and after the jigsaw puzzle intervention on both drawing and labelling skills (Chukwu & Arokoyu, 2019) as shown in Table 1.

Table 2. Descriptive and differential analysis of pretest and post-test scores for drawing and labelling skill of total sample

Variable	Pretest		Post-test		Mean gain	r value	t - value	df
	M	SD	M	SD				
Drawing skill	3.92	1.352	14.08	2.482	10.16	0.549**	24.479**	24
Labelling skill	0.64	1.800	16.08	2.999	15.44	0.253	25.038**	24

Note: ** indicate significance at 0.01 level

The t-value for the scores on pretest and post-test drawing skill for total sample was determined to be 24.479, which is significant at 0.01 level. The mean gain between pretest and post-test scores for drawing skill of total sample estimated to be 10.16 indicates positive effect of jigsaw puzzle method. Similarly the t-value for the scores on pretest and post-test labelling skill for total sample was determined to be 25.038, which is significant at 0.01 level. The mean gain between pretest and post-test scores for labelling skill of total sample estimated to be 15.44 indicates positive effect of intervention. Moreover, there exists a moderate positive significant relationship between the scores on pretest and post-test drawing skill for the total sample, whereas there was no relationship found in labelling skill as given in Table 2.

The results indicate that the jigsaw puzzle method was effective by improving the student's drawing and labelling skills and in turn the academic scores (Renganathan, 2020). Students taught with the jigsaw strategy achieved greater improvement in their mean scores than those taught with the conventional lecture method (Ojekwu & Ogunleye, 2020). There was a significant higher achievement rate among students taught using the jigsaw co-operative teaching/learning strategy and increasing attitudes and values of learners towards study in biology (Juweto, 2015). The results of the study showed that the jigsaw puzzle was an effective instructional strategy for the enhancement of students' academic performance in biology (Chukwu & Dike, 2019). The jigsaw approach had a direct effect on the academic effort (Abbasi et al., 2019).

Educational implications and recommendations

One of the safest ways of teaching anatomy is without the usage of blades, needles and glass items such as watch glass, glass slide and cover slips. The jigsaw puzzles created can be reused for other students of higher classes. The students without doubt can, for years, remember the study as it creates a gaming environment to learn faster (Zirawaga et al., 2017) and also to learn by having fun (Rodenbaugh et al., 2015). Jigsaw puzzles give opportunities to students to create their own jigsaw puzzles for better learning. The students will be able to easily crack any competitive exam regarding anatomical concepts. Self-rectification and self-improvement can be done through this method of learning and that too with ease in case of late bloomers. Pair or group work helps children to work in a team, communicate and collaborate. Moreover, students work in small peer groups, which is one of the better ways to teach science (Webb & Palincsar, 1996). The students prepared only two types of jigsaw puzzles. Similar puzzles can be prepared for other classes based on their conceptual need. These boxes can be prepared and kept safe in the library and can be issued for reference as reference books. 3D jigsaw puzzles can be prepared when the conceptual depiction is insufficient in 2D. The researcher recommended the adoption of the teaching method by using the jigsaw strategy in teaching science because of its effect on the acquisition of scientific concepts (Hamadneh, 2017). The study recommended that teachers should adopt the jigsaw learning strategy in classroom practice especially in learning anatomical concepts.

Conclusion

The effect of jigsaw method worked very well for the students of Class 8, but the real effect of this method can be detected in the higher secondary classes where more complex anatomical structures need to be remembered with accurate labelling. The success of any pedagogical-based research lies in field implementation or in the hands of teachers to take this method to students in need.

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कोरोना महामारी के दौरान विद्यार्थियों की मानसिक स्थिति एवं बचाव के उपाय – एक विश्लेषण

*कृष्ण चंद्र चौधरी**

सार

विद्यालय और परिवार जीवनप्रद सामाजिक इकाइयां हैं जो सभी विद्यार्थियों के समग्र विकास के साथ जुड़ी हुई हैं। हमारे विद्यालयों की प्रमुख रूप से उत्तरदायित्वयह है कि वे विद्यार्थियों के शारीरिक एवं मनोसामाजिक स्वास्थ्य को प्रोत्साहित करें और इन्हें बेहतर बनाएं। विद्यार्थियों की देखभाल और संरक्षण के लिए अभिभावक, विद्यालय, शिक्षक, परामर्शदाता, आदि की अमूल्य भूमिका होती है। उभरती चुनौतियों के चलते यह आवश्यक हो गया है कि विद्यालय छात्र-छात्रा की मनोवैज्ञानिक आवश्यकताओं पर ध्यान केंद्रित करें तथा उनके समग्र कल्याण का ध्यान रखें। कोरोना वायरस जनित (कोविड-19) महामारी ने हमें जैविक, शरीरिक, सामाजिक, आर्थिक (अर्थव्यवस्था), सांस्कृतिक, राजनीतिक, भावनात्मक, मनोस्वास्थ्य, चिकित्सीय और पठन-पाठन के रूप में शिक्षण-अधिगम की प्रक्रिया को बुरी तरह से प्रभावित किया है। इस महामारी ने दुनिया भर में डर, भय और गंभीर चिंता का वातावरण निर्मित कर माहौल बना दिया है। इससे लोगों में लगातार घबराहट का अनुभव, बेचैनी, तनाव, भय, अनिश्चितता, चिंता, संदेहजनक वातावरण और निराशा, आदि वर्तमान जीवन की बड़ी समस्याएं है। तनाव व चिंता की अवस्था में व्यक्ति में प्रायः सांवेगिक अनुक्रिया, मनोसामाजिक डर, आशंका और घबराहट उत्पन्न होती है, जो भावनाओं के आपस में आदान-प्रदान से कम किया जा सकता है। इससे व्यक्ति में समायोजन एवं विषम परिस्थिति के अनुरूप स्वयं को ढ़ालने की क्षमता बढ़ती है। इस विकट परिस्थिति से उत्पन्न मिश्रित भावनाएं और मनो-सामाजिक तनाव, मानसिक दबाव व चिंता, भावनात्मक और व्यवहार संबंधी मुद्दे के साथ भय से बाहर निकलने में मनोवैज्ञानिक हस्तक्षेप उपयोगी सिद्ध होता है। साथ ही, जीवन में सकारात्मक सोच और रचनात्मक क्रियाकलापों को आत्मसाथ कर दबावपूर्ण स्थिति से बाहर निकला जा सकता है। इसके लिए हमें दृढ़ इच्छाशक्ति, सहयोग और हम की भावना के साथ प्रयासरत रहने की आवश्यकता है। फलत: कोरोना काल में विद्यालयी शिक्षा और सामाजिक जिंदगी ऑनलाइन हो गई है और आमने-सामने की मुलाकात कम हो गई है। इस प्रक्रिया में बच्चे अकेलापन महसूस करने लगे हैं और ऐसे में बच्चे अवसाद से ग्रसित हो रहे हैं। अनहोनी की आशंका और दूसरी तरह के खौफ एवं चिंता को जन्म दिया है। लोग अपने प्रियजनों को हमेशा के लिए साथ छोड़ जाने से अकेले रह जाने के दहशत में है। लोग चिंता और व्याकुलता से मानसिक संकट में हैं। अब हमारी ज़िम्मेदारी है कि हम ऐसे बच्चों की पहचान कर उन्हें समुचित सहयोग एवं परामर्श प्रदान कर सामान्य जीवन जीने हेतु प्रेरित करें। मुख्य शब्द - कोरोना त्रासदी, मनःस्थिति, सामाजिक व्यवहार, मनोवैज्ञानिक परामर्श, मनोसामाजिक अकेलापन, डिजिटल तनाव।

परिचय

विश्व स्वास्थ्य संगठन की परिभाषा में किशोरावस्था की आयु (10 से 19 वर्ष के बीच) और जीवन के एक चरण के संदर्भ में किसी व्यक्ति की विशेषताओं में गतिशील परिवर्तन शामिल है। मनोवैज्ञानिक रूप से परिपक्व होने के साथ-साथ किशोर व्यक्ति किशोरावस्था के दौरान अपनी पहचान व अपने महत्व की भावना विकसित करते हैं और भावनाओं के आवेग को नियंत्रित करने के लिए चिंतन करता है। किशोर आयु वर्ग में आत्म-क्षति दर वैश्विक स्तर पर सबसे अधिक संख्या में पाई जाती है। अधिकांश शारीरिक बीमारियों के लिए भावनात्मक तनाव और अन्य चिंताएँ एक प्रमुख कारक हैं। मनोचिकित्सक, नैदानिक मनोवैज्ञानिक, परामर्शदाता और संबद्ध पेशेवरों जैसे मानसिक स्वास्थ्य सेवा प्रदाता इस बात से सहमत हैं कि हम ठीक समय पर विद्यार्थियों को सहायता देकर भविष्य की कई मानसिक स्वास्थ्य स्थितियों को रोक सकते हैं।

छात्र-छात्रा के मानसिक स्वास्थ्य के अंतगर्त भावनात्मक, व्यावहारिक और मनोसामाजिक कल्याण को शामिल किया जाता है। इसकी सबसे महत्वपूर्ण विशेषता 'अनुकूलनशीलता', है, जो दैनिक जीवन की चुनौतियों को प्रभावी ढंग से सामना करने की क्षमता रखता है। छात्र-छात्रा के जीवन में सफलता सीधे उनके मानसिक स्वास्थ्य से जुड़ी हुई है। जो विद्यार्थी मानसिक स्वास्थ्य सहायता प्राप्त करते हैं वे शिक्षण में बेहतर प्रदर्शन करते हैं, वे कुशल होते हैं और परिवर्तन को

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स्वीकारते हैं। शोध अध्ययन बताते हैं कि पांच में से लगभग एक बच्चा या किशोर तनाव, चिंता, अधिगम निःशक्तता और मादक द्रव्यों के सेवन जैसी मनोस्वास्थ्य संबंधी चिंता का सामना करता है।

बच्चों के समाजीकरण संरचना परिवार है और दूसरी विद्यालय है। यह दोनों संस्थाएं समग्र विकास के लिए अधिक अवसर और मनोवैज्ञानिक दायरा प्रदान करता है। विशेष रूप से, परिवार, विद्यालय, समुदाय और समाज मिलकर बच्चे के मानसिक स्वास्थ्य के लिए काम करते हैं और उसके पालन-पोषण में बराबर के हिस्सेदार होते हैं।

इस काल क्रम में कुछ स्थितियों में उदास और परेशान होना सामान्य है, और हर कोई इस स्थिति से गुज़रता है। भावनाएँ यदि गंभीर हैं, लंबे समय तक, अप्रत्याशित, असामान्य लगती हैं। अवसाद एक ऐसी स्थिति है जो समस्याओं और अनिश्चितताओं से भरी होती है और अवसाद के लक्षणों से निदान और उपचार से बाद के प्रभावों तक हर पहलू से संबंधित है। मानसिक कल्याण केवल मानसिक बीमारी की अनुपस्थिति को ही नहीं बल्कि प्रतिभाओं, क्षमताओं, भावनाओं व कमजोरियों के बारे में जागरूक करता है।

राष्ट्रीय शिक्षा नीति 2020 में उल्लेख किया गया है कि बच्चे कुपोषित और अस्वस्थ होने के कारण बेहतर तरीके से सीखने में असमर्थ होते है। इसलिए बच्चों को पोषण, शारीरिक एवं मानसिक स्वास्थ्य को स्वस्थ किया जाएगा। इस हेतु परामर्शदाताओं की भूमिका एक ऐसे सूत्रधार के रूप में हो गई है जो बच्चों और माता-पिता को सहायता प्रदान कर सके क्योंकि परामर्शदाता एक योग्य, प्रशिक्षित एवं अनुभवी व्यक्ति होता है जो सार्थक सहायता और परामर्श देता है।

संवेगात्मक विकास की ओर

राष्ट्रीय शिक्षा नीति 2020 के अनुसार जीवन में संवेगों का प्रभाव अधिक होता है तथा बच्चों के वैयक्तिक एवं सामाजिक विकास में संवेगों का योगदान होता है। लगातार संवेगात्मक अस्थिरता बच्चे को समग्र रूप से प्रभावित करती है तथा अनेक प्रकार की शारीरिक और मनोसामाजिक समस्याओं को उत्पन्न करती है। दूसरी ओर संवेगात्मक रूप से स्थिर बच्चे खुशहाल, स्वस्थ एवं शान्तिपूर्ण जीवन व्यतीत करता है।

बच्चों को संवेदनात्मक रूप से स्थिरता प्रदान करने के लिए शिक्षक उन्हें बताएं कि वे अपने आप को एक पैर पर संतुलित करने का प्रयास करें। स्वयं जाँचे कि शरीर की स्थिति के बारे में जागरूक होने के लिए कौन सा इंद्रिय एवं अंग आपकी सबसे अधिक मदद कर रहा है। साथ ही एक शांत कमरे में बैठें, अपनी आँखें बंद करें और दस मिनट के लिए अपनी सांसों पर ध्यान दें। जो आता है उसे आने दो और जो जाता है उसे जाने दो। किसी भी विचार में बाधा डालने के लिए कोई सचेत प्रयास न करें। जब आप एक पहेली को हल करते हैं जिसे आपने पहले हल नहीं किया है, तो उस समय आप किस प्रसंस्करण दृष्टिकोण का उपयोग कर रहे हैं। इसके साथ ही 7 सेकंड के लिए गहरी सांस लेते हुए, 8 सेकंड के लिए इसे रोककर और 8 सेकंड के लिए साँस छोड़ते हुए आराम करने की कोशिश करें। इस क्रिया को 7 बार दोहराएं। अपनी श्वास के साक्षी बनें और उन परिवर्तनों पर ध्यान दें जो आपने स्वयं में देखे हैं। इस क्रिया को प्रतिदिन करें।

बच्चों के संवेगात्मक विकास में खेल का योगदान जीवनाधारा की होती है। बच्चे स्थानीय एवं नाटकीय खेलों जैसे गुड़िया का खेल, शिक्षक एवं विद्यालय का खेल, चोर-सिपाही का खेल, घर-घर का खेल इत्यादि द्वारा अपने नकारात्मक संवेगों से मुक्ति पाते हैं। बच्चे संवेगात्मक उतार-चढ़ाव से भी जूझते हैं। वे कभी खुश तो कभी उदास हो जाते हैं। वे नहीं समझ पाते कि अपनी भावनाओं को कैसे व्यक्त करें।

सीखने-सिखाने की प्रक्रिया

विद्यालय को ऑनलाइन कक्षाओं का समय और गृह-कार्य का बोझ भी सीमित करना चाहिए। शिक्षक विद्यार्थियों के सामने आ रही भावनात्मक और अकादमिक समस्याओं के बारे में बात करें और यदि आवश्यक हो, तो विशेष कक्षाएँ लगाएँ। अभिभावकों और शिक्षकों को यह प्रयास करना होगा कि बच्चों तक नकारात्मक सूचनाएँ पहुंचने से रोका जाए। इसको लेकर बहुत अधिक ध्यान रखना चाहिए। इसके अलावे, बच्चों को व्यस्त रखने के लिए वैकल्पिक गतिविधियों का उपयोग करें । उन्हें घरेलू कामकाज से जोड़ें ताकि उनमें ज़िम्मेदारी का भाव आए। अभिभावक और शिक्षक बच्चों को इतनी जगह दे कि वे अपने विचार और भावनाएँ व्यक्त कर सके और उन्हें सहानुभूति के साथ सुना जाए। बच्चे संबंधित मामलों के बारे में चिंता व्यक्त करें तो माता-पिता को चाहिए कि उनका उचित समाधान करें। साथ ही, उनकी समस्याओं का समाधान करने के लिए सार्थक प्रयास करें।

विद्यार्थियों की शिक्षा हेतु एनसीईआरटी का वैकल्पिक अकादमिक कैलेंडर राष्ट्रहित में जारी

कोरोना महामारी के कारण विद्यालय बंद है, लेकिन विद्यार्थियों की औपचारिक शिक्षा को सरल बनाने के लिए राष्ट्रीय शैक्षिक अनुसन्धान और प्रशिक्षण परिषद (एनसीईआरटी) द्वारा वर्ष 2020-21 से वैकल्पिक अकादमिक कैलेंडर विकसित किया गया। विद्यालयों की सभी स्तरों में कक्षा 1-12 के विद्यार्थियों की शिक्षा को सुचारु रूप से जारी रखने के लिए इस कैलेंडर का विकास किया और सीखने के प्रतिफलों से जोड़ा गया। इस कैलेंडर को बच्चों, अभिभावकों तथा शिक्षकों की मदद के लिए बनाया गया ताकि छात्र-छात्रा को पढ़ाने में सहायता कर सकें और अर्थपूर्ण शिक्षण पाठ ग्रहण कर सकें। इस कैलेंडर को बनाते समय नई तकनीकों और सोशल (डिजिटल) मीडिया को विशेष महत्व प्रदान किया गया जिससे छात्र-छात्रा अपने घर के अंदर रहकर खुशी-खुशी पढ़ाई और अध्ययन कर सकें।।

शिक्षक का परामर्शदाता के रूप में भूमिका और योगदान

शिक्षक शिक्षण के साथ ही निर्देशन एवं परामर्श का कार्य भी करते हैं। इसलिए शिक्षकों को छात्र-छात्रा के सामने आने वाली व्यावहारिक एवं भावनात्मक चुनौतियों से निपटने के लिए प्रशिक्षित किया जाता है। इस बात का उल्लेख राष्ट्रीय शिक्षा नीति 2020 में भी है। अत: शिक्षक विद्यार्थियों के जीवन में महत्वपूर्ण भूमिका निभाते हैं और छात्र-छात्रा का सबसे निकट संपर्क शिक्षक के साथ होता है।

अभिभावकों की ज़िम्मेदारी और भूमिका

अभिभावक की प्राथमिक भूमिका अपने बच्चों के भावनात्मक स्वास्थ्य के साथ-साथ उनके शारीरिक स्वास्थ्य की देखभाल करना है। वे अपने बच्चों की भावनाओं तथा व्यवहार में आए बदलावों पर ध्यान दें। बच्चों को सक्रिय रहने के लिए प्रोत्साहित करें। योग और नियमित व्यायाम को दैनिक दिनचर्या में शामिल करें क्योंकि यह उनके शारीरिक और मानसिक स्वास्थ्य के लिए अच्छा है। एक अभिभावक के रूप में, आप यह सुनिश्चित करने में योगदान दे सकते हैं कि आप अपने बच्चों की बातों को सुनकर, उनकी कमियों को स्वीकार करते हुए, उनकी शंकाओं को दूर करते हुए, उन्हें आशा पैदा करते हुए और मुद्दे को हल करने में भावनात्मक सहयोग प्रदान करते हुए उनके मानसिक स्वास्थ्य को बनाए रखें। माता-पिता अपने बच्चों को सक्रिय रूप से सीखने के लिए गतिविधियों जैसे बागवानी में पानी देना, भोजन पकाने में सहायता करना, महापुरूषों की प्रेरणादायी जीवनी, कहानियाँ, चित्रकारी, पेंटिंग, संगीत, खेल, आदि में व्यस्त रख सकते हैं।

कोरोना काल में बच्चों का ध्यान सकारात्मक और रूचि के कार्य में जैसे चित्रकारी, पेंटिग, संगीत, खेल, बागवानी, भोजन पकाने के प्रति झुकाव और भोजन पकाना, प्रेरक पुस्तकें, आध्यात्मिक पुस्तकें एवं महापुरूषों की प्रेरणादायी जीवनी, कहानियाँ, पढ़ने-लिखने की आदत विकसित करना और अपने रूचि में व्यस्त रखना आदि क्रियाकलापों का सहारा ले सकतें है। दादा-दादी का उनके पोते-पोती के विकास पर और परिणामस्वरूप, उनके मानसिक स्वास्थ्य पर सकारात्मक प्रभाव होते हैं। दादी-नानी से बच्चों को घर पर रहकर कहानियाँ सुननी चाहिए। ये कहानियाँ प्रेरक एवं साहसिक होती है तथा बच्चों पर अच्छा प्रभाव डालती है। इससे बच्चे व्यस्त रहेंगे तथा दु:खद घटनाओं की तरफ ध्यान नहीं जायेगा। ये कहानियाँ बच्चों के कोमल मन की उर्वरा भूमि पर प्रेम, सौहार्द, उदारता, संयम, शांति, तार्किकता, सकारात्मक सोच एवं चरित्र-निर्माण जैसे अच्छे गुणों के विकास के बीज बोकर उन्हें अंकुरित कर फूलने-फलने का मौका देता है।

अभी बच्चों को घर में रखना बड़ा ही कठिन कार्य है, जिसमें ऐसी कहानियाँ उपयोगी साबित हो सकती हैं। दादी अम्मा की कहानियों में पंचतंत्र के रूप में पशु चरित्रों की मजेदार कहानियाँ आज भी बच्चों एवं किशारों को पसंदीदा है और गहन जिज्ञासा के साथ-साथ जीवन के प्रति एक स्वस्थ व प्रगतिशील दृष्टिकोण भी पैदा करती है। मानवोपयोगी नैतिक शिक्षा व मूल्यों की कहानियाँ जहाँ एक ओर जीवन दक्षताओं को प्रदान करने में सक्षम हैं, वहीं दूसरी ओर मानव मूल्यों को जीवन में उतारने की प्रेरणा भी देती हैं।

ये कहानियाँ बच्चों के कोमल मन में जीवन की नयी रोशनी लाएँगी और जीवन-मूल्यों, शिष्टाचार, विनम्रता, सत्यवादिता एवं व्यवहारिक कोमलता आदि भावों को जागृत कर सकेंगी। अतः घर के बुजुर्गों द्धारा बच्चों को दादी-नानी के साथ अकबर-बीरबल की हास्य कहानियाँ, आजादी की लड़ाई, महान स्वतंत्रता सेनानियों के ओज-वीरता की कहानी सुनाई जा सकती है। बच्चों को कहानियाँ के द्धारा सर्वांगीण विकास के साथ-साथ उनमें संवाद-कौशल, संवेदनशीलता, बड़ों के प्रति सम्मान, छोटों के प्रति प्रेम, पर्यावरण के प्रति सजगता, सद्भाव, समय-नियोजन, मानवीयता और राष्ट्र के प्रति अगाध प्रेम जैसे अनेक गुणों एवं भावों को लाना संभव है। अत: भावनात्मक जुड़ाव को बच्चों और उनके माता-पिता या देखभाल करने वालों के बीच एक बंधन के रूप में समझा जा सकता है जो बच्चे के विकास और जीवन में सार्थक संबंधों के निर्माण की उनकी क्षमता को प्रभावित करता है।

बच्चों पर डिजिटल तकनीक का प्रभाव

कोविड-19 महामारी एक जटिल परिस्थिति है जिसमें बच्चों के नैसर्गिक विकास पर विपरीत प्रभाव पड़ रहा है, क्योंकि उन्हें जहाँ एक ओर विद्यालय का शैक्षणिक परिवेश समुचित रूप से नहीं मिल पा रहा है, वहीं दूसरी ओर प्राकृतिक परिवेश में खेलकूद के अभाव के कारण उनका शारीरिक, सामाजिक और मानसिक विकास भी प्रभावित हो रहा है। इसलिए बच्चों को ऑनलाइन शिक्षा के माध्यम से ऑनलाइन रोचक गतिविधियाँ, रचनात्मक खेल एवं मनोरंजन सीखने के नये अवसर प्रदान किया जा रहा है।

किंतु यह शिक्षा उनके सर्वांगीण विकास के लिए पर्याप्त नहीं है। बच्चों के साथ-साथ किशोर में भी अपने कैरियर के प्रति एक अनिश्चितता की अवस्था है क्योंकि उन्हें यह पता नहीं है कि इस परिस्थिति में आगे उनका विकास किस तरह से होगा और कौन सी ऐसी परिस्थिति होगी जिसमें उन्हें स्वयं निर्णय लेने की क्षमता विकसित हो सके। अतः बच्चों एवं किशोरों में अपने अध्ययन एवं अग्रिम विकास के लिए एक उपापोह की स्थिति व्याप्त है जिससे वे मानसिक रूप से काफी परेशान रहे हैं। बच्चे को इस समय ऐसे माहौल की परमावशकता होती है जहाँ सामाजिक-भावनात्मक शिक्षा पर जोर दिया जा सके। अभिभावक कोरोना काल में बच्चों के दिल-दिमाग को मजबूत करने का प्रयास करें जिसमें समय, समझ्, संचार, संवाद, संवेदना के साथ समानुभूति निरंतर कायम रखें।

कोविड-19 के दौरान विद्यार्थियों का 'स्क्रीन टाइम' बहुत ज्यादा बढ़ गया है। वह कंप्यूटर, टेबलेट या स्मार्टफोन की स्क्रीन पर नजरें गड़ाए

रहते हैं। शोध अध्ययनों से पता चला है कि बच्चों का स्मार्टफोन और कंप्यूटर का इस्तेमाल औसतन पांच घंटे हर दिन बढ़ गया है। वे सोशल मीडिया और गेमिंग प्लेटफार्म पर अधिक समय व्यतीत करने लगे है। कामों से व्यस्त कई माता-पिता बच्चों के 'स्क्रीन टाइम' बढ़ोतरी में अनदेखी कर देते हैं यह सोच कर कि चलो उनका मन तो लगा रहता है। परंतु सोशल मीडिया बच्चों की कच्ची-पक्की जानकारियों में उत्कंठा तक बढ़ा देता है। माता-पिता सारे निगरानी नहीं कर सकते क्योकि घर के भीतर काम भी होते हैं। बहुत ज्यादा 'स्क्रीन टाइम' से उनकी नींद कम होने लगी है जिससे उनके व्यवहार में बदलाव आने लगा है। इतना ही नहीं इसकी वजह से उन में आरामतलबी और आलस्य की भी समस्या बढ़ी है। यह खतरे का संकेत है, इस तरह की घटना मनोसामाजिक अकेलेपन का घोतक है।

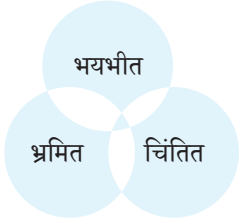
विद्यार्थियों के लिए प्रज्ञाता दिशा-निर्देश

कोरोनो महामारी से देश के 24 करोड़ विद्यार्थियों की शिक्षा प्रभावित हुई है। इसके लिए शिक्षा मंत्रालय, भारत सरकार ने कोरोना महामारी के कारण विद्यालय में समुचित रूप से शिक्षा को संचालन हेतु एक प्रज्ञाता दिशा-निर्देश जारी किए हैं। इसमें कक्षा 1 से 12 तक के विद्यार्थियों के लिए ऑनलाइन कक्षा हेतु समय एवं सत्रों का विस्तार से विवरण दिया गया है। इन दिशा-निर्देश के अनुसार प्राथमिक कक्षा के लिए सत्र की अवधि 30 मिनट तक किया गया है। कक्षा 1 से 8 तक के लिए अवधि 45-45 मिनट की 2 कक्षाएँ निर्धारित की गयी है। वहीं कक्षा 9 से 12 तक के विद्यार्थियों के लिए 30 से 45 मिनट तक की अवधि की 4 ऑनलाइन कक्षाओं का प्रावधान किया गया है। इसके अंतर्गत ऑनलाइन और डिजिटल शिक्षा के 8 चरण, जिनमें योजना, समीक्षा, व्यवस्था, मार्गदर्शन, बातचीत (वार्ता), कार्य सौंपना (असाइनमेंट), पता लगाना (ट्रैक करना) और सराहना (प्रोत्साहित करना) शामिल है। ये आठ चरण उदाहरणों के साथ चरणबद्ध, व्यवस्थित और एकीकृत तरीके से डिजिटल शिक्षा की योजना और कार्यान्वयन का मार्गदर्शन व रूपरेखा प्रतुस्त करते हैं। डिजिटल (ऑनलाइन) शिक्षा पर जारी यह दिशा-निर्देश शिक्षा की गुणवत्ता बढ़ाने के लिए विस्तृत कार्य योजना प्रदान करते हैं। इन दिशा-निर्देशों में उन विद्यार्थियों के लिये जिनके पास डिजिटल उपकरण हैं और जिनके पास डिजिटल उपकरण नहीं है, दोनों का ध्यान रखा गया है। प्रज्ञाता दिशा-निर्देश विद्यालय प्रशासकों व प्रमुखों, शिक्षकों, अभिभावकों, शिक्षक-प्रशिक्षकों और विद्यार्थियों सहित हितधारकों के विविध समूहों के लिए ये दिशा-निर्देश प्रासंगिक और उपयोगी साबित हो रही है।

मानसिक स्वास्थ्य पर असर

कोरोना संकट का असर लोगों की मानसिक सेहत पर गंभीर रूप से पड़ने लगा है। आज संपूर्ण विश्व एक ऐसे मुहाने पर आ खड़ा हो गया है, जहां वर्तमान और भविष्य दोनों के लिए चिंताशील है। जनमानस के मनोदशा पर गहरा प्रभाव डाल रहा है और मनोभाव बदल सा गया है। घरों में बंद जीवन, आर्थिक संकट का डर (रोज़गार एवं आजीविका का अभाव), सामान्य जीवन नहीं जी पाने की छटपटाहट और इन सबसे ऊपर कोरोना का डर, इन सभी भावनाओं ने नकारात्मकता को उत्पन्न कर दिया है। दैनिक जागरण समाचार पत्र में छपे एक आलेख दिनांक 27 मई 2020 के अनुसार भारतीय मनोरोग सोसायटी के सर्वेक्षण के मुताबिक महामारी काल के आने के बाद देश में मनोविकार से पीड़ित मरीजों की संख्या में लगभग 20 प्रतिशत की वृद्धि हुई है।

वर्तमान स्थिति में मानसिक स्वास्थ्य पर प्रभाव



कोविड प्रोटोकॉल का अनुपालन

कोरोना एक संक्रामक वायरस है और इससे पूरी मानव जाति संकट में है। नोवेल कोरोना वायरस (कोविड-19) महामारी के प्रकोप से उत्पन्न स्थिति से निपटने के लिए वर्तमान में व्यक्तिगत दूरी (सामाजिक दूरी) अभूतपूर्व रूप से रखी जा रही है ताकि वायरस फैलने की श्रृंखला को रोक सकें। वैश्विक महामारी कोरोना से बचाव के लिए व्यक्तिगत दूरी या चिकित्सीय दूरी (शारीरिक दूरी) अथवा सामाजिक दूरी (सोशल डिस्टेंसिंग) का सुनिश्चित रूप से पालन करें और कम से कम 2 गज़ (6 फीट) की दूरी अपने जीवन में अनुशासन के साथ आत्मसात करें। अपने हाथों को बार-बार धोएं, घर पर बना पुनः उपयोग होने वाला मास्क (फेस कवर) हर समय पहनें और समय-समय पर अपने हाथ को साबुन और पानी से अच्छे से धोएं या कम से कम 60 प्रतिशत से अधिक अल्कोहल-आधारित हैंड सैनिटाइज़र का प्रयोग करें।

व्यक्तिगत दूरी, मास्क का उपयोग, सामाजिक व्यवहार और स्व अनुशासन से सभी लोगों की आत्मरक्षा होगी। व्यक्तिगत दूरी + योग और ध्यान + संतुलित आहार (पौष्टिक भोजन) + टीकाकरण से ही होगा कोरोना का इलाज और सुरक्षा कवच का निर्माण। बचाव और टीकाकरण से ही कोरोना विषाणु को फैलने से रोका जा सकता है। कोविड-19 महामारी के दौरान घर में रहना और सुरक्षित रहना बहुत ज़रूरी है। फलत: इस वायरस के नए रूप ने (दूसरी लहर यानी नया खौफ कोविड-2.0) ज्यादा लोगों को अप्रत्याशित रूप से प्रभावित किया और अब तीसरी लहर (कोविड-3.0) में कोविड प्रोटोकॉल का अनुपालन सुनिश्चित रूप से करना ही होगा, तभी जनमानस की सुरक्षा संभव है।

ये त्रासदी आकस्मिक एवं व्यापक स्तर की चुनौती है। कोविड-19 महामारी के प्रकोप से उत्पन्न स्थिति से निपटने के लिए वर्तमान में कोविड प्रोटोकॉल का पालन सुनिश्चित रूप से करें और दोनों टीका

अनिवार्य रूप से लगवाये जिससे विषाणु फैलने की श्रृंखला को रोक सकें। अत: 'एक अधूरा दो से पूरा' का मूलमंत्र याद रखें और कोरोना के दोनों टीके पूर्ण रोग प्रतिरक्षा के लिए निश्चित रूप से लगवाएँ।

न्यू नॉर्मल के साथ जीवन जीना

कोविड-19 हमारे जीवनकाल की सबसे अधिक घातक एवं विनाशकारी घटना है और इसने हमारे समाज व जीवन की परिभाषा बदल दी है। इसके कारण आज विश्व अकल्पनीय परिवर्तनों के नए दौर से गुज़र रहा है। इस महामारी का प्रभाव समाज के सभी वर्गों व समुहों पर अलग-अलग तरीके से पड़ा है। वर्तमान परिस्थिति एवं बदलते परिवेश में आकार ले रही नई सामाजिक व्यवस्था 'न्यू नॉर्मल' (नया सामान्य) के साथ जीवन जीना और सामंजस्य बनाने की ज़िम्मेदारी सभी वर्गों पर है। न्यू-नॉर्मल का मकसद नागरिकों की जान की सुरक्षा से है। जीवन के हर क्षेत्र में एक नयी सामान्य प्रक्रिया को जन्म देगा कोविड-19, ये शुरुआती संकेत है कि प्रसार जीवन के हर क्षेत्र में एक 'नयी सामान्य प्रक्रिया' को जन्म दे सकता है। नया संतुलन स्थापित करने में कुछ महीने और लगेंगे तथा वैश्विक महामारी रूढ़ियों की एक नई परंपरा को जन्म देगी। जैसे-जैसे कोरोना वायरस ने प्रत्येक मानव गतिविधि में खलल डाला है, मनुष्य के एक-दूसरे से बातचीत के तरीकों में प्रत्यक्ष और अप्रत्यक्ष तौर पर जीवन शैली में बदलाव हुआ है।

वर्तमान परिस्थिति में मन:स्थिति का संकट

शोध अध्ययनों में से जानकारी मिलती है कि व्यक्तिगत दूरी, स्व-अलगाव के माध्यम से इस महामारी के विस्तार पर विराम लगाया जा रहा है। भारत में भी इन उपायों को अपनाया जा रहा है, जो भारतीय जनमानस के लिये सर्वथा नया प्रयोग है। लोगों की जीवन शैली में अचानक आये, इस बदलाव ने कई तरह की मानसिक समस्याओं एवं जटिलताओं को जन्म दिया है। अत: इस मानसिक दबाव से बाहर निकलने में मनोवैज्ञानिक सहयोग महत्वपूर्ण हो सकतें हैं।

वर्तमान परिप्रेक्ष्य में मानसिक स्वास्थ्य से जुड़ी कई तरह की दिक्कतें होना स्वाभाविक है। इसलिए जन सामान्य को दबाव तथा चिंता का सामना करने, संभालने एवं राहत देने में मदद और समायोजन करने के लिए रचनात्मक कार्रवाई करना महत्वपूर्ण है। सकारात्मक सोच और रचनात्मक क्रियाकलापों को अपना कर इस दबावपूर्ण स्थिति से बाहर निकला जा सकता है। सभी को धैर्य व पूरी समझदारी के साथ कार्य करना है।

परामर्शदाताओं और मनोवैज्ञानिकों की भूमिका

बच्चे का अधिकतम समय विद्यालय में बीतता है, जिससे विद्यार्थियों के मनोदैहिक स्वास्थ्य के लिए काम करने वाले प्रशिक्षित और समर्पित परामर्शदाताओं की भूमिका महत्वपूर्ण हो जाता है। शिक्षा एक अचुक कारक और घटक हैं। बच्चों के व्यक्तित्व के समग्र विकास हेतु और जीवन लक्ष्यों के निर्धारण मार्ग में शिक्षकों तथा परिवारजनों द्वारा उनके वांछनीय व्यवहार को प्रोत्साहित करना होगा जो उनके व्यक्तित्व का निर्माण करने में सहयोगी हो। बच्चों के जीवन में असफलता, असन्तोष, कुंठा आदि को परामर्शदाता के सहयोग से दूर करने का प्रयास किया जाये। हम लोग विपरीत परिस्थिति में सहयोगात्मक एवं समानूभूतिपूर्ण से बच्चों की भावनाओं को समझने का प्रयास करें। इससे बच्चों में भावनात्मक रूप से मज़बूत व्यक्तित्व के साथ आदर्श नागरिक का विकास हो।

हम लोगों को बच्चों के प्रति प्रत्यक्ष दृष्टिकोण को जागृत करना परमावश्यक है। इसमें शिक्षकगण तथा परिवार के लोगों के साथ अंत:क्रिया करके बच्चों में आत्मविश्वास का संचार किया जा सकता है। मनोवैज्ञानिक एवं परामर्शदाता के सहयोग से बच्चों के व्यक्तित्व विकास में एक महत्वपूर्ण कार्य किया जा सकता है जिससे व्यक्तित्व का समग्र रूप से विकास किया जा सके।

परामर्शदाता की भूमिका एक विशेष-आवश्यकता की पूर्ति करने वाले शिक्षक, एक उपचारात्मक शिक्षक, एक जांचकर्ता, और बच्चे के सकारात्मक मानसिक और भावनात्मक कल्याण के लिए एक सलाहकार के रूप में है। मानसिक स्वास्थ्य एवं तनाव तथा मनो-सामाजिक चिंताओं से संबंधित प्रश्नों के समाधान के लिए, राष्ट्रीय मानसिक स्वास्थ्य और तंत्रिका विज्ञान संस्थान (निमहांस), बैंगलोर द्वारा राष्ट्रीय टोल-फ्री हेल्पलाइन नंबर, 08046110007 जारी किया है जिस पर सभी लोग संपर्क कर सकते हैं।

शिक्षा मंत्रालय, भारत सरकार द्वारा भी एक पहल 'मनोदर्पण' प्रारम्भ की गई है। इसके तहत हमारे शिक्षण संस्थानों के छात्र-छात्रा की देशव्यापी पहुंच के लिए एक राष्ट्रीय टोल-फ्री हेल्पलाइन, 8448440632 स्थापित की गई है। जो उन्हें उनके मानसिक स्वास्थ्य, अकादमिक कैरियर तथा मनोसामाजिक मुद्दों से जुड़ी समस्याओं को दूर करने के लिए टेली-काउंसलिंग प्रदान कर रहा है। इसके अलावा, लोग भारत सरकार के कोरोना महामारी हेल्प डेस्क 9013353535, राष्ट्रीय टोल-फ्री हेल्पलाइन नम्बर 1075, राष्ट्रीय रोग नियंत्रण केन्द्र (एनसीडीसी), आरोग्य सेतु ऐप, कोविन टीकाकरण ऐप, यूजीसी हेल्पलाइन नम्बर 08046110007 और विश्व स्वास्थ्य संगठन जैसे भरोसेमंद स्रोतों से सही जानकारी ले सकते हैं। अत: भारत में मानसिक स्वास्थ्य चुनौतियों और लंबे समय तक कोविड के प्रभाव को कम करने में मनोवैज्ञानिकों और परामर्शदाताओं की भूमिका अमूल्य साबित हो रहा है।

निष्कर्ष

कोविड-19 महामारी दुनिया भर में सभी के लिए एक चुनौतीपूर्ण समय है। यह वैश्विक महामारी न केवल गंभीर चिकित्सा और चिंता का विषय है, बल्कि सभी के लिए मिश्रित भावनाएं और तनाव भी पैदा करती है।

प्रतिकूलताओं का सामना करने के लिए व्यक्ति को अनुकूलित करने की आवश्यकता है, और मनोवैज्ञानिक सशक्तता का निर्माण अपेक्षित है। मनोवैज्ञानिक और भावनात्मक स्थिति ठीक रखने और समय का सकारात्मक उपयोग करने की आवश्यकता है। बच्चों में चिंता, डर, अकेलापन और अनिश्चिता बनी हुई है और कोविड के इस संक्रमण काल में लोगो को उम्मीद भी है। विषाणु ने दुनिया भर में मानव के समक्ष जीवन का संकट पैदा कर दिया है, जिससे मानव समाज बेहद डरा हुआ है। यह महामारी लोगो के व्यवहार को बदल रही है। कोरोना हमारे तन के साथ-साथ मन पर भी हमला बोल रहा है। वर्तमान परिस्थिति में बच्चों को घर के अंदर ही रहना है यानि घर, विद्यालय, खेल का मैदान, पार्क हर जगह खेलने-कूदने वाले बच्चे मजबूर होकर घर के चार दीवारी में बंद हो गए हैं। आज विद्यालय परिवार के भीतर आ गई और परिवार में ही विद्यालय बन गया है। बच्चों के जज्बातों को समझें तो हम लोग उनकी गतिविधियों को पहचानेंगे कि दोस्ती और दोस्तों से मिलना बाकी दुनिया से मिलने के बराबर है। बच्चों में मनो-सामाजिक तनाव जानने के लिए अभिभावक और शिक्षक नियमित चर्चा करें। अतः वर्तमान में मानसिक स्वास्थ्य से जुड़ी कई तरह की दिक्कतें होना स्वाभाविक है। इसलिए बच्चों को तनाव तथा चिंता का सामना करने, संभालने एवं राहत देने में मदद और समायोजन करने के लिए रचनात्मक कार्रवाई करना महत्वपूर्ण है। अभिभावक बच्चों के प्रति साकारात्मक सोच और रचनात्मक क्रियाकलापों का वातावरण अपना कर इस दबावपूर्ण स्थिति से बाहर निकल सकते हैं।

संदर्भ सूची

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How Accessible is Education for Migrant Workers' Children? A Case Study of an On-site School

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Abstract

The interstate migration of construction workers has a significant impact on the education of their children. Their children are often deprived of educational facilities due to the interplay of several social and economic push factors. The present research is a case study of an on-site school serving migrant workers' children and aims to know the educational status of migrant workers' children and understand their educational problems. The qualitative data reveals several barriers in the educational path of migrant workers' children such as low economic status of workers, safety concerns related to sending children to far off schools in migrated places, language barriers in school, lack of awareness about free education and other benefits provided in government schools and impoverished site school.
Keywords: School education, migrant workers' children, on-site schools.

Introduction

A large population in India migrates from one place to the other for marriage, job opportunities, work, education and several other reasons. Labour migration is seen as risk-sharing behaviour of families. Migration is perceived as a household response rather than individual response to risks concerned to income. Migrant remittances serve as income insurance for the households of migrant workers. The families and households of migrants consider migration not just to maximise income but also to minimise and spread risks (Haas, 2010). Marriage is cited as a prominent reason for female migration by a large proportion of the female migrants, especially when the migration is within the state. Work/employment and education are major reasons for migration of males (Census, 2001).

Migration in India

The employment and educational opportunities in other states or urban areas are pull factors that attracts rural area migrants to urban areas and from small towns and cities to flourished urban areas. According to the 2001 Census report, "307 million persons reported as migrants by place of birth, 41 million were interstate migrants and 5.1 million migrated from outside of the country" (2001 Census). Census 2011 reports that Uttar Pradesh and Bihar are to blame for the massive number of migration as 20.9 million people migrated outside the state from the two states. Ministry of Finance survey data provides information that annually, 9 million people migrate between states. Higher rate of migration is observed during the months of October and November from the states of Uttar Pradesh, Rajasthan, Bihar, and Madhya Pradesh to the states

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of Delhi, Haryana, Punjab,and Gujarat. Labour usually returns home during June-July month. This type of migration is called seasonal migration. There were about 14.6 million construction workers (not including brick kiln workers), which constitutes of 30.4 per cent of male construction workers (3.9 million) and 60.4 per cent female construction workers (1 million) (Roy, Manish, Naik. 2017).

Push and pull factors as an approach towards migration

The process of migration can be explained by various approaches. One such approach is the push and pull approach, which presents migration as an interrelated process of push and pull factors. The push and pull factors can either be cultural, economic, political or environmental, which motivates migration. The factors that are recognised as migration decision influencers due to political, economic, cultural, or environmental factors are known as push factors. The push factors force a person to leave a place and move to another place. The common push factors listed in literature are unstable economic, political, social or environmental conditions like low productivity, lack of opportunities for advancement, poor economic conditions, lack of political support in creating growth opportunities, exhaustion of natural resources, famine, religious riots and natural calamities. Adoption of modern technology in industries and agriculture further pushes the unskilled citizens to the helm and forces them to migrate in search of work. The factors that attract migrants to an area are called pull factors. Relatives or friends residing in a place, better employment opportunities, higher wages, better living conditions, amiable work environment and fascinating facilities are pull factors of an area (Thet, 2009; Parkins, 2010).

Migration should be seen as a holistic process reflecting the aspirations of people for better life. The argument presented by Sen supports the view of holistic process by stating that achievement of people is influenced by social powers, better health facilities, economic opportunities, political freedom, accessible education and the supportive and encouraging policies related to initiatives (Yaro, 2008).

Educational policies and schemes supporting education of children of migrants

Migration affects the education of migrant workers' children as they are not able to complete their studies at one place due to seasonal migration. COVID-19 added to the woes of migratory workers children in terms of education because the pandemic situation forced them to return to their hometowns. They faced many challenges in their new schools such as cultural differences, language problems and social insecurity, to name a few. They are least motivated to complete their curriculum and attend school regularly. The school session starts from April and these seasonal migrated children move back to their native places in June or July and then again return in October-November for work. The seasonal migration affects the children's education negatively.

The SDG 4.5 states that "By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations" (MHRD). RTE Act 2009 was implemented through Sarva Shiksha Abhiyaan (SSA), which provides free and compulsory education to all children between 6-14 years. Presently, SSA and other flagship schemes of MHRD such as Centrally Sponsored Scheme on Teacher Education (CSSTE) and Rashtriya Madhyamik Shiksha Abhiyan (RMSA) are now combined under an umbrella programme known as Samagra Shiksha Abhiyaan (SSA). The scheme envisions the 'school' as a smooth transition from pre-school, primary, upper primary, secondary to senior secondary levels. The scheme aims to achieve equitable, inclusive and accessible quality education from pre-school to senior secondary level on the footsteps to achieve Sustainable Development Goal (SDG) for Education.

Migrated children are often deprived of enjoying the fruits of RTE 2009 Act in terms of educational benefits. Lack of awareness about these policies and low education status of migrant workers are responsible for deprivation from educational benefits. The benefits of Government's educational policies doesn't sufficiently reach migrant workers' and therefore, demands attention to bring improvement in the social and educational conditions of migrants. Appropriate labour and social policies can play a role in subsidising the costs of migration for the poor labour requiring investments in the area of providing basic needs and essential infrastructure for migrants by the state, but it is yet a distant dream. The COVID situation has revealed a lot about the conditions of migrants and it is time to take action to provide them a good life with fulfilment of basic requirements.

Seasonal hostels, site schools and bridge courses for migratory workers' children are some positive steps in the direction. Central University (name not revealed due to ethical considerations) provides a site school to the children of labourers engaged in the construction of academic blocks of the university. It provides basic education infrastructure to the students but it doesn't have institutional arrangement with the local government schools to consider or transfer the attendance of students. The researcher works in the university and has been visiting the Abhilasha School for various learning projects. The inspiration behind exploring the educational status and challenges of migrant workers children was gained during these learning visits to school. The present study is an attempt to study the educational challenges and the educational status of children of migrant workers.

Need of the study

According to Global Education Monitoring report 2019 of UNESCO, 80 per cent of migrant children in India didn't have access to education near their workplace. Other prominent links identified between education and migration are: 1. Denial to the right to education, mostly due to lack of paperwork; and 2. discrimination faced by immigrants in education, and job opportunities which results in wastage of their potential **(GEM Report, 2019).** The lack of evolvement of educational system to fit in the requirements of migrants create a need to study the existing educational status of children of migrants and also study the attempts made in the direction. To understand the factors responsible for the low educational status of children of migrants, there is a significant need to look under the cover and reveal the real picture of migrants and education.

Research questions of the study

1 What is the educational status of migrant workers' children?
   a. Past enrolment in formal education.
   b. Present enrolment in formal education.
2 How does migration impact the education of children of migrant workers?

Review of related literature

Roy, Singh and Roy (2015) conducted a study on influence of rural-urban labour migration on children. The data was collected from 13 under construction places of Varanasi in Uttar Pradesh and nine villages in Bihar. The seasonal labour migrants either migrate with their families or leave them behind at their native places. The remittance received by the left behind family member have a positive impact on the education of children. It decreases the gender gap in school involvement and lowers the school dropout rate. On the other hand, they are also on the verge of dropout whenever the father and mother change their job place or children get distracted from education due to the non-appearance of their parents.

Deep (2019) conducted a study on seasonal migration and exclusion of children in school education. Further, the study examined the effectiveness of policies in ensuring

education of child labour. The study states that the condition of a migrant's child could improve in the long run only through ability formation and education. These excluded children need to be brought within the ambit of the educational system at the destination. A beginning was made under the SSA through mobile school. Provision of mobile teacher along with the migrating families and children would have been a better solution but the operational viability is questionable.

Janta and Harte (2015) conducted a study on the education of migrant kids. The study found that there is a tendency for less educational appearance among children with a migrant past (either first, second, or higher-order-generation migrants) and there is also an increased tendency for migrant children to leave school early than children with a native background. The study also put forth evidence suggesting that there is a negative impact of socio economic disadvantage on educational outcomes than being from a migrant background. Accordingly, families with poor educational attainment have a bigger impact on group outcomes than a good concentration of migrant children. The study suggested teaching the migrant students in their mother tongue or teaching them language of instruction. It also pointed towards the usefulness of good relationships between educators and parents, and the need to allocate more resources to schools with a large number of migrants.

Coffey (2013) conducted a study on children's welfare and seasonal migration from rural India. Some articles within the literature gave the metering of the hurdles and challenges faced by children of seasonal labour migrants. The paper used survey data from rural northwest India to review both migrant children and people left behind. The study reported that migrant children rarely work when they accompany adult migrants. Additionally, the paper reported a strong evidence in support of negative relationship between migration of children and their educational outcomes. It further suggested expansion of government employment programme to help migrant children.

Sarva Shiksha Abhiyan, Gujarat, (2013) conducted a study on 'Migration Card and Migration Monitoring Software: Tracking and Educating Migrant Children in Gujarat'. A track monitoring software was introduced by the Gujarat Government in 2009 to keep an eye on inter-state and intra-state migration of school going children. Gujarat used the SSA to successfully educate and enrol all migrant children. The government worked on seasonal hostels and camps for migrant workers' children. This programme helped to increase retention of children who migrate with their parents in elementary education, and positively impacted the dropout rates of girls in primary education.

Research design

The research design for the present study is case study design. The literature presents four types of case study research designs as: 1. Single-case (embedded) designs; 2. single-case (holistic) designs; 3. multiple-case (embedded) designs; and 4. multiple-case (holistic) designs.

The single case study is considered as a suitable design in consideration of five single-case rationales: having an unusual, revelatory, critical, common, or longitudinal case. The second and third rationale related to unusual and common case is applicable to the present study. A case is considered unusual if it deviates from the theoretical norms or even everyday occurrences. A common case is the one, which elucidates the everyday situations or circumstances of a social process (Yin, 2009a, p. 18).The case in the present study is an unusual case as construction site schools are rarely reported in practice.

Case of the study: The study selects Abhilasha School situated in the premises of a Central University (CU) in the state of Haryana as the case. This particular case is selected because the school serves the educational needs of the children of migrant workers serving as labour in the construction

of the university's new buildings. The case is considered as a unique case because facility of providing on-site schools at construction sites within an educational institution is not a common practice.

Case study design: There are four case study designs according to Yin, 2009 as mentioned before. The present study employs single-case (embedded) design. Here, the single case is Abhilasha School (main unit) and it has subunits embedded in it like students, teachers, and parents of students, the school management, and other associated persons. In this way, different data comes from different sources of evidence or subunits. Understanding about the education of children studying in Abhilasha requires interaction and data collection from other associated sources/subunits like parents, teachers, management, leaders of nearby schools, etc.

Children of migrant workers working in CU

Research participants

The case of the present study is Abhilasha School in CU campus and therefore, the migratory workers' children living in CU campus, workers working in CU campus (whose children are studying in Abhilasha), school teachers (Abhilasha and nearby Government schools) are the participants considered for the study.

Data collection

The study employed a mix of data collection methods. The details of methods are as follows

Table 1: Details of Data Collection

Source	Method	Data Type	Questions addressed in semi-structured interviews
Teacher at Abhilasha Name: Mrs. Neeru	Semi-structured interview conducted telephonically	Reflection notes about the teaching-learning process, management of school and challenges faced by teacher working in Abhilasha	Record of students admitted in school Functioning of Abhilasha staff in Abhilasha resources available in Abhilasha Teaching learning activities Challenges in teaching

Parents of students (migrant labour) Name of parents: 1. Vijay Kumar F/O Sonu 2. Shivlal F/O Krishna 3. Jaimala M/O Bheem 4. Shamshan Singh F/O Anisha 5. Seetaram F/O Monu	Residential site visit for conducting survey to collect demographic details	Demographic details of labour collected by researcher	Information about the family structure Educational status of children Views about education of their children
Students: 25 students studying in Abhilasha School (details in Table 2)	Face to face interview	Notes in dialogue format	Perceptions on education
Government school teachers of adjoining villages: Two teachers and one principal (names not disclosed to maintain confidentiality)	Semi-structured interview conducted telephonically	Notes in dialogue format	Role in providing education to children of migrant labour School's role in creating awareness among migrant labour about education under SSA for education of their children

Data analysis

In the present study, thematic content analysis is used to analyse the qualitative data. Content analysis is a process of summarising and reporting the main contents of data and their meaning. It is a set of process of analysis, examination and verification of the contents of collecting data. The data is analysed on the basis of the various themes, categorised according to the main theme of education of the children of migrant workers. After modifying the theme according to the data, the researcher decides to adopt mainly two themes: access to schools and challenges in the education of migrant children.

Analysis and interpretation of data

Using a thematic content analysis informed by grounded theory (Glaser & Strauss, 1967), participants' responses were coded into two main domains. 1. Access to education; 2. challenges in the education of migrants' children.

Research question 1: What is the educational status of migrant workers' children?

Data analysis: The researcher conducted household survey to collect data of the educational status of children of migrant workers working in the Central University. The data includes their demographic information and their present and past enrolment status.

Theme 1: Access to education

The survey data consists information of 25 children who are presently studying in Abhilasha School. Abhilasha is functioning in the campus of CU. The data shows that all students belong to Bihar and have come with their parents. Of them, 20 children fall in the 10 year or less than 10 year age group and five above 10 year age group. Their parents' average income is Rs. 11,200 with an average family size of 6.64. Large family size and comparatively low income of these families is one of the major factors behind the low educational status of children. This is supported by RAND study of Janta and Harte (2015), which provided evidence that socio economic disadvantages and low educational attainment of family has more negative impact on education of migrant children than impact caused by migration.

The data of the study shows that the maximum education of the father is Class 10. The fathers of 11 students are uneducated and seven fathers have studied till Class 5 and seven fathers were able to complete their school education from Class 7 to 10. The educational status of fathers is very low because 18 fathers completed education till Class 5. Further, the data clearly reveals that all children were enrolled in government schools in their native places. Their parents migrated to Haryana in Central University to work on construction sites. They moved along with their parents and shifted to temporary residences provided to them by builders.

A. Past enrolment in formal education

All students of Abhilasha were enrolled in government schools at their native places. They had to move along with their parents to Haryana who migrated here for work opportunities and are presently working as construction workers in Central University.

B. Present enrolment in formal education

The data provided by the parents show that not a single student is enrolled in a formal school. All are attending Abhilasha for their education needs. There are government schools in the adjoining villages of the university such as Jaant, Pali, Dhauli, which is between 1 to2 kms from the university. The parents prefer to send their children to Abhilasha rather than schools outside the campus. The reasons for this decision will be discussed later in the study.

Interpretation

The migration took a toll on their education as revealed by the data that they are presently not enrolled in a recognised school providing formal education. However, the university provides them the facility of a school named Abhilasha and all children of migratory workers attend that school. As Abhilasha is not affiliated with any board nor does it provide provision of registering its students in nearby government schools, this leaves the students without any formal education. Children combines together to affect education of children. The factors such as low income, large family size and low educational status of fathers of migrated workers

Research question 2: How does migration impact the education of children of migrant workers?

Data Analysis:

Theme 2: Challenges in education of migrants' children

The challenges in education are explored by conducting interviews with parents and teachers of children of Abhilasha.

Views of parents

The researcher conducted interviews with parents and teachers to understand the reasons impacting the education of migrant children. The interview data from parents reveal that they are seasonal workers, so they don't stay in one place for long. Earning a livelihood is always their first priority. They usually move back to their native place in six to seven months. This hampers the regular education of their children. Seasonal migration is a big problem in the education of migrant workers' children. These migrant workers usually move to their work sites in October and November and this is mid-session in schools of their children. They go back to their places in June and July when the new session starts. Thus, they miss their regular studies and face problems in admissions and exams.

Another reason is their low educational status. Thus, they are not well informed of their educational rights and also least informed about the various programmes run by the government. They don't get proper guidance for their children's education. They are also not aware of the educational benefits of education. Krishna's father Shivalal said, ***"I know that education is free for all children but we are not sure whether it is implemented all over India.***

Above all our focus is roti, kapda aur makaan." Bheem's mother Jai Mala said, ***"I want my children to be educated because education is important for development and good job opportunities."*** They don't send their children to schools at present. As all schools are at a distance of more than 1.5 kms and there is no transportation facility so, security of children is their major concern. The place is new to them and they feel their children might not be safe while travelling to school. Vijay Kumar, father of Sonu said, "*Abhilasha School is in the university so we don't send our children outside. I am satisfied with this education. We are working on work sites for the whole day so we don't have time to connect with children. Children attended classes regularly at their native places. We see on TV that education is free, but we are not very focussed on education. As our children are enrolled in Abhilasha there is no need to send children outside to any other school."* The views presented by parents suggest that education of their children is not their priority and they never discuss any educational issues with the children. The main focus of their lives is to make ends meet. A poor man with a meagre average income of Rs. 11,200 and a large family size (average family size is 6.64) and often deprived of the support schemes provided by the government finds it hard to provide themselves and their children good education. Their unaware status about educational schemes of the government brings forth the ground reality and demands serious efforts. Otherwise our country will be deprived of the demographic dividend, which these migrant children can add to improve the socio-economic status of the country. The low education of parents is yet another significant factor for not supporting the education of their child. They are not able to motivate them and assist them in their education. The same is revealed by Ms. Neeru, the teacher of the school who shared that lack of parental cooperation is one of the biggest challenges she faces in keeping students regular in school.

Views of the teacher Ms. Neeru is a teacher at Abhilasha School, which serves the educational needs of the children of migrant workers working in the university campus. Her interview brought to light several crucial facts about the educational performance of students and also the challenges faced in providing quality education. She informed that currently 25 students in the age group of 4 to 14 years are studying in the school and this number fluctuates due to migration of their parents. Abhilasha is a single teacher school and so all the teaching and non-teaching responsibilities are borne by Ms. Neeru. The school functions for four hours from 9.00 AM to 1.00 PM. The present builder is not sufficiently contributing in meeting the needs of the school. However, some of the expenses are borne by the university, such as the salary of the teacher is paid by the university. Due to lack of financial support the students who themselves are in the clutches of poverty never get sufficient supply of books and other stationary items. The university staff and students who believe in serving these deprived students often come forward and provide help in the form of uniforms, bags, notebooks, and other stationary. Some of the students also devote their evenings and weekends in providing remedial classes as well as hobby classes such as dance and singing. The university provides a platform to these students to showcase their talents on several occasions such as Republic Day, Independence Day, etc. Being a single teacher school, multi-grade students are taught by one teacher and in one classroom. She mentions that few students, such as 10-year-old Anisha, 16-year-old Aarti and 10-year-old Suraj are excellent in academics but the irony is that they are deprived of a regular education. The nearest government school is hardly more than a kilometre away but these children don't go to school. She performs multiple roles of a teacher, counsellor and caretaker. There are times when teenage students face psychological problems. In the absence of financial resources the needs of the school are hardly met and essential infrastructure is under-developed.

University faculty and students providing charity to school

The interviews with students and the teacher reveal that some students are academically bright and perform well in school. They have high educational aspirations and have goals for a stable future, which they want to achieve through education. Other students showed no interest in studies and want to work with their parents. Their parents' low education and less interest in their children's education is one factor in low educational aspirations and motivation of their children. Migration to attain financial stability brings with it new challenges to adjust in a new environment. They face language barriers, safety issues, and financial issues. The parents are unable to provide basic necessary items for a decent living. Poverty creates a vicious circle and their lives are trapped in it. Education is a means to bring them out of that vicious circle but they neither have state support nor any guidance to choose a way towards achieving education. Low education of parents, lack of support structure by the state and the institutions for which they work, make education a tough aim to achieve. Due to lack of access to formal schools, they lag behind in attaining education and as a result either drop out or perform poorly.

Interpretation

Thus, it can be interpreted from the above information that the children of migrant workers remain deprived of their right to education. They are neither covered under the umbrella of universalisation of school education scheme nor are they covered under Samagra Shiksha Abhiyaan. Samagra Shiksha Abhiyaan aims at providing access to track the necessity and demands of other deprived categories of children including children affected by migration along with other children. Samagra Shiksha Abhiyaan clearly talks about providing hostels to migrated children in the districts where high incidence of migration is noted, it also talks of possibility of providing transport facility to and from the school and if possible there shall be an arrangement of **work-site schools** at the workplace of migrant families (Draft Document, Samagra Shiksha Abhiyaan, MHRD). The policies are meticulously drafted

by seasoned experts but the results are not visible on ground as the present case study shows that sufficient efforts are not made by local authorities or schools to collect data of migrated workers and then provide them opportunities to attend nearby schools.

Theme 3: Challenges in education of migrants' children

The major barriers that hamper the path towards the education of migrated workers' children are:

1. Irregularity in exams and promotion to next grades due to seasonal migration.
2. Lack of financial resources to bear educational expenses.
3. Safety concerns in migrated place.
4. Language barriers in school.
5. Inaccessibility to government schools.
6. Non-integration under Samagra Shiksha Abhiyan.
7. Weak system of work site school.
8. Negligence of builders, local authorities, state education authorities and university authorities.
9. Parents are less aware of the education schemes provided by the government.
10. Low educational status of parents and low income in comparison to large family size.

The impact is seen in the form of no enrolment in schools. Thus, trapping the children in the walls of the under privileged status, still waiting to get their educational rights.

Conclusion

The sources of data are workers, their children, campus school teacher and nearby school teachers. The stories shared by workers reveal that their children were enrolled in formal schools at their native place, but due to their migration to Haryana with families they find it difficult to admit their children in formal school. There are several reasons for their inability to access formal schooling. Firstly, they are not aware about the free and compulsory education policy implementation in Haryana state. They are well aware about the state provisions for free education of children in their state but they don't know about its implementation status in rest of India. Secondly, all the schools around the university are at a distance of approximately 1 to 2 kms, therefore, sending children alone to schools raises a safety concern in a new place. and due to high crime rate in Haryana. The interview with children attending Abhilasha brings forth that all students are not interested in schooling. Some children are not interested in attending school. On the other hand, some are interested in education. As Suraj says, "I want to become a police officer and I want to pursue higher education." Aarti aspires, "I want to become a teacher."

Thirdly, the poor economic status, large family size, low education status of parents are yet another main hindrance in the education of children as they are not able motivate their children for education, nor do they send them to government schools. Further, they are not able to purchase the basic necessary items like books, notebooks, pen, pencil, etc. for their classwork. Fourthly, however, Abhilasha School is doing a great social work by providing education to migrated workers' children but it is not recognised by a state board and has minimum required infrastructure. It has only one classroom and one teacher. Therefore, almost all work including teaching and non-teaching is done by the teacher. There is shortage of necessary items like basic stationary, learning resources to carry on the teaching learning process smoothly. Another reason is lack of cooperation by parents in sending children to school on a regular basis.

Fifthly, there is no admission survey or awareness drive undertaken by state governments for education of migrant workers' children as revealed by the government school teachers who said that they have no directions in this regard. The government make serious efforts to spread awareness about education in the villages but they have never targeted migrant workers'

children. This shows that there is a need to create awareness among migrated workers about the education of their children. The awareness programmes should be carried out by both government schools and university.

Migrant workers and their families appear to live in a no man's land where no benefits of any state reach them. This brings into picture the critical need to provide universal reach to local employment, purchasing power for a decent livelihood, essential health benefits, social security, quality education, supportive local governance, and regional employment generation. The collaborative efforts of the centre and state and interstate authorities in mainstreaming migrants with the rest of the population are indispensable for the growth of the Indian economy. The fact that migrants comprise 20 per cent of the workforce their contribution in the growth of India (Puri, 2020) cannot be sidelined.

Similarly their human rights should not be violated. The two prominent factors like seasonal migration, lack of welfare efforts by organisations employing workers and lack of state efforts for the education of their children takes a severe toll on the education of migrant workers' children. The children who migrate with their parents suffer learning deficits as they have to drop out of school. Children moving out with their parents remain enrolled in the schools of their native places but in reality they are out of school. Their re-entry to schools after their return to their hometown is hampered by learning gaps and also demands of attendance, examination records, etc. and as a result they either drop out or face learning barriers.

Despite the RTE Act, these children are often deprived of their educational rights due to lack of support structure. Collaboration among states dealing with migration on the issues of a joint planning and budget sharing migration needs to be developed. However, children usually migrate with their parents, but retention of these children in their native village should be encouraged by providing seasonal hostels/residential camps at their native place. Such initiatives can be seen in the experiments of Sakhar Shalas to provide education to children of sugarcane workers' run by Janarth, the Bhonga Shalas imparts education to children of brick-kiln workers' run by Vidhayak Sansad and Aide et Action South Asia's (NGO) initiatives in Orissa and Andhra Pradesh are model cases to follow for uplifting educational status of migrants (UNESCO, 2012).

Educational implications

For hiring organisation Under social responsibility act, the hiring institutions should be held responsible for providing essential facilities to workers and their families. Hiring organisations can collaborate with the District Education Department and NGOs working in the same field to get students enrolled in government schools.

For state education department

Interstate collaboration among education departments in ensuring education of these children should be developed.

For local authorities Awareness drives for the education of migrants' children should be organised and local school authorities should be provided clear guidelines for migrant workers' children.

Limitations of the study

1. The first limitation is that it is limited to only one school providing worksite education to children of workers.
2. The second limitation is that the data from university authorities couldn't be gathered as no response was provided by them.
2. The third limitation is the lack of quantitative data to add expanded view in the problem.
4. The fourth limitation is lack of generalisation of results as it is limited to only one case.

Suggestions for further research The study can be extended to other construction workers working in a concerned district or Haryana.

1. The study can be conducted on model schools providing education to migrant children.

2. Further studies can be conducted on education of state-wise migrant workers to generalise the results.
3. Future research can use mixed method design to get a broader coverage of data.
4. The study can be done specifically on migrant students studying in government schools.

Note: The study doesn't reveal the name of the university due to ethical considerations. The names of parents and students are not their real names.

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Challenges in Implementing the Thematic Calendar in Anganwadis of Kerala: Perspectives of Anganwadi Workers

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Abstract

In the context of the thematic calendar, a curriculum for early years has been introduced by Integrated Child Development Services with the objective of holistic development of the children of 3-6 years. This study explores the challenges faced by the Aanganwadi workers in implementing the thematic calendar. Semi-structured interviews were conducted with thirty 30 Aanganwadi workers who were selected randomly from Kozhikode urban and rural projects of ICDS in Kerala. Thematic analysis was used to analysze the interview responses. It was found that challenges in implementing the curriculum in Aanganwadis relates to enrolment, learning aids, teaching-learning practices, infrastructure and logistic facilities, other services, financial assistance, supervision and training and honorarium. Measures to overcome the challenges and improve the practices of Aanganwadi workers are suggested.
Keywords: Anganwadi centre, ICDS, Preschool education, Preschool Curriculum

Introduction

The importance of early years is well-recognised in various international and national policy documents. Many studies have established the impact of this critical period in the later life of children. The appropriate investments in the physical, cognitive, linguistic, and social-emotional development from birth to primary school years are critical for the success in school and beyond. The National Policy for Children 1974 acknowledged children as 'supremely important assets' of the nation and suggested the State governments have to provide adequate services for children to ensure development in all aspects. To accomplish this purpose, Integrated Child Development Service, one of the world's largest and distinctive outreach programmes for early childhood care and development, was launched on 2 October 1975. The ICDS is India's response to the challenge of meeting the holistic needs of the child and represents India's commitment to its children. In the initial stages, ICDS was implemented in 33 selected community development blocks with 4,891 anganwadi centres (AWCs) all over India. At present, the ICDS is a network of around 14 lakh approved AWCs /mini-AWCs in the country, of which more than 13 lakh are functional (National Institute of Public Cooperation and Child Development Report, 2017). The six services provided under the ICDS are: supplementary nutrition, immunisation, health checkup, referral

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services, nutrition and health education, and preschool education for children of 3-6 years.

In Kerala, ICDS was launched as a pilot project at Vengara, one of the districts in Malappuram. After nearly 45 years of operation in the state, the ICDS has developed into a vast network of providing various services to children aged 0-6 years, adolescent girls, pregnant and lactating women in all districts across the state. At present, there are 32,986 anganwadis and 129 mini anganwadis in Kerala. An anganwadi centre is run by an anganwadi worker (AWW) and supported by a helper. AWWs, the community-based voluntary functionaries of the ICDS programme (Thakare et al., 2011) have close and continuous contact with the different groups of beneficiaries under ICDS. Due to the various job responsibilities, these honorary AWWs have a pivotal role in the proper functioning of the centres.

Recognising the importance of the preschool years, a curriculum called thematic calendar (Government of Kerala, 2014-15) was introduced in the ICDS for physical-motor, social-emotional, language, cognitive and creative-aesthetic development of the child. It includes the basic concepts of Malayalam, Mathematics, Environmental Studies and General Knowledge and helps to develop the language and early literacy capabilities in Malayalam language. These concepts and subjects are taught through 30 themes such as child and family, my body, rain and seasons, fruits, vegetables, festivals, important days, etc. Thematic calendar introduces two or three themes per month through vivid activities for different age groups of 3+, 4+ and 5+ years' children.

Need and significance

Considering the significance of early years in development, the National Education Policy (NEP) 2020 targets at achieving universal provision of quality early childhood care and education by 2030 and ascertaining school readiness for Class 1 students. The earlier, National Police on Education (NPE) 1986 also emphasised that programmes of ECCE would be child-centered focussing on play and individuality of the child and stressed that formal methods and introduction of the 3Rs would be discouraged in this critical period. Moreover, the Programme of Action (POA) of NPE 1986 correlated the significant parameters of the quality of life with ECCE (Mohanthy & Mohanthy 1994).

The National Family Health Survey-3 (2005-06) data (IIPS, 2007) shows that though anganwadi centres are increasing, the status of children in the country is still far from what is expected. Literature shows that even though the preschool education component of ICDS scheme is decisive in child development, this service fails to achieve its objectives due to various reasons. One of the major reasons is the different problems faced by the AWWs in the area of implementing preschool education.

Dhingra & Sharma (1969) reported that preschool education activities were being done by the AWWs on a routine basis but the activities were mostly monotonous and lacked newness. Sandhyarani and Rao (2013), Patil and Doibale (2013), Desai, Pandit and Sharma (2012), Madhavi and Singh (2011), and Dongre et al. (2008) reported that most of the AWWs complained about excessive workload. AWWs are very poorly paid (Bhatnagar & Bhadra 2017; Patil & Doibale 2013) and are stressed and dissatisfied (Aswathy & Pillai 2017; Bhatnagar & Bhadra 2017). The few studies available regarding preschool aspects and problems of AWWs in Kerala indicate that local bodies assigned the anganwadi staff indiscriminately for other duties (Seema 2001) and that anganwadi services for children are under-utilised (Francis & Paul 2017), with the latter also stressing the need to carry out qualitative studies to trace reasons thereof. NIPCCD Report (2020) also recommended that work assigned to AWWs need to be reviewed keeping in view the extreme pressure on AWWs.

In this context, the present study assumes significance and explores the challenges faced by the AWWs in implementing the thematic calendar. The study will be constructive not only to the policymakers and officials but also to the stakeholders of anganwadis to cognize the difficulties of AWWs and to prepare training strategies for making the programme more effective and create appropriate organisational atmosphere to improve practices of AWWs.

Objectives

1. To find out the challenges faced by the anganwadi workers in implementing the thematic calendar.
2. To suggest measures to overcome the challenges faced by the anganwadi workers in implementing thematic calendar and improve the preschool education practices of anganwadi workers.

Methodology

Sample: The study was conducted among 30 anganwadi workers selected from anganwadi workers of Kozhikode urban and rural projects of ICDS in Kerala.

Tools: Semi-structured interviews were conducted by visiting the select AWWs to identify the challenges faced by the anganwadi workers in implementing thematic calendar. These interview schedules were validated by three subject experts and modified based on their suggestions prior to being used for data collection.

Analysis: Braun and Clarke's (2006) thematic analysis method was used to organise data and identify patterns called 'themes'. The following themes were derived from the analysis: enrolment, learning aids, teaching-learning practices, infrastructural and logistical facilities, other services, financial assistance, supervision and training, and honorarium. First, all interviews were transcribed and then translated into English. Second, the transcripts were coded by annotating with initial codes that briefly described the text. The codes were reviewed, which meant renaming or combining repetitive ones. Third, the codes were ranked and some codes were made subordinate codes. The codes with their subordinate codes were grouped into themes, which were derived based on the study's research question. Fourth, the coded text extracts relevant to each theme and sub-theme were re-read to ensure consistency within each and distinctiveness between them. If there was inconsistency, the code and related subordinate codes were moved to a more appropriate initial theme and sub-theme or merged. From this process, the groupings were finalised. Fifth, theme and sub-themes were renamed and defined to accurately and succinctly represent the data contained. The sixth step was reporting.

Findings: The challenges faced by the AWWs in implementing the thematic calendar are given in detail under different themes.

I. Enrolment and attendance

i. Number of children: Some of the AWCs have around 30 children and even more in the densely populated areas. Considering the multi-age group to which these students belongs, AWWs report that it is difficult for them to engage all the children when the number of children increase.

ii. Different age group: An anganwadi centre has children of different age groups (3-6 years). Though they are supposed to manage multi-age groups, AWWs are not trained well. The lack of training causes difficulties in conducting various activities, which are prescribed in the thematic calendar for the different age groups at a time.

iii. Two sessions of admission in a year: ICDS promotes admission in June and November. According to the anganwadi workers, the admission in November affects the smooth conduct of the preschool activities as the thematic calendar is prepared based on many factors. One among them is seasons. The

children who get admission in November may miss the themes and activities during June session. Moreover, many of them do not complete even a year, which makes it difficult for the teachers to implement the thematic calendar properly.

iv. High absenteeism and unpunctuality: Majority of the AWWs complain that irregular attendance and late coming are major issues. Though the anganwadi functioning hours is from 10 am to 3 pm, most of the children come too late and many of them attend irregularly. This, according to AWWs, is because parents do not consider attending anganwadi classes as an important one. However, it is difficult to attribute a cause effect relationship between implementing the thematic calendar and absenteeism because it can be the other way around too. Students may be finding the curriculum uninteresting and may be demotivated due to the unimaginative transaction as well.

v. Dropout: The activities in the thematic calendar are for the children of 3-6 years group. Most of the parents consider AWCs as a preparatory centre and after six months or one year of admission, children are transferred to other types of preschools. Only a few children complete three years of preschool education in anganwadis and enroll directly to Class 1. So the AWWs cannot implement all the themes and activities prescribed in the thematic calendar.

vi. Special children: Aiming for quality education for all children without discrimination, Kerala Social Security Mission and State Initiative on Disabilities commenced a pilot project 'Special anganwadis' in Kozhikode district in 2016. Twenty three AWCs were selected as special anganwadis from 21 ICDS blocks and appointed special trainers. It is not a separate institution for differently abled children only, it is an inclusive system. As the number of special anganwadis is few, it is difficult for the children in remote areas to reach a particular centre. Only special trainers properly deal with the disabled children. Owing to lack of proper training AWWs spend more time with these children, which affects the implementation of the thematic calendar.

II. Learning aids

i. Workbook and handbook: The Social Justice Department introduced *Anganapoomazha* (Government of Kerala, 2014-15), an activity-oriented workbook containing 30 themes, which has not been provided to all anganwadi children yet. Some of the anganwadis do not have the teacher's handbook *Anganathaimavu* (Government of Kerala, 2014-15), which includes a detailed description of vivid activities of 30 themes with age-specific guidelines.

ii. Preschool kit: The technical committee of the ICDS has prepared a list for preschool kit that includes 40 necessary learning aids and play materials like blocks, beads, colours, pictures, flashcards, puzzles, storybooks, etc. Most of the anganwadis do not have learning materials in the list, which is essential to conduct various activities prescribed in the thematic calendar. Those who have some aids, most of them are old and damaged.

III. Teaching-learning practices

i. Number and difficulty of activities: The thematic calendar (Government of Kerala 2014-15) and teachers' handbook (*Anganathaimavu*) introduces many themes and specifies various activities for each theme. While most of the AWWs opined that the number of activities in the thematic calendar is more and it is difficult to complete them within the stipulated time, some pointed out that a few of the activities introduced were too difficult for the children to follow.

ii. Introducing the English language: Some of the AWWs opined that though ICDS never promotes languages other than

the mother tongue, English has been introduced due to the compulsion of parents. Hence, it becomes a hindrance to the proper implementation of the thematic calendar. But the majority of the AWWs suggested introducing English in AWCs.

IV. Infrastructure and logistic facilities

i. Indoor space: Though the majority of the anganwadis are working either in their building or in the school building, most of them have only a single room for playing, learning, dining, sleeping, cooking and storing. Thus, children do not get enough space to move freely while performing activities. A worker exclaimed, 'How can the activities in the calendar be implemented in a congested room!' Only a few AWCs have aesthetically attractive and child-friendly infrastructure.

ii. Outdoor space: A majority of the anganwadis do not have outdoor space for play, which is vital for the enjoyment of childhood as well as social, emotional, intellectual and physical development.

iii. Inadequate furniture: A few anganwadis do not have proper furniture like chair, table, cupboard, etc. Also the furniture in most anganwadis is not maintained properly.

iv. Inappropriate ventilation and lack of electricity and water: Some of the anganwadis do not have proper ventilation and electricity. Most of the anganwadis depend on wells and taps in the neighbourhood.

V. Other services

i. Various surveys, registers and reports: There are different types of surveys the anganwadi workers have to conduct after anganwadi time (3.30-4.30 pm). The details of the survey were entered manually in various registers till recently. In August 2019, ICDS introduced an application, 'Common Application Software' (ICDSCAS) and provided a mobile hand-set to feed all the information regarding surveys except the stock register. Some of the AWWs said that it is a herculean task and they have to devote considerable amount of time for uploading data on their mobile phones because many of them are unable to handle it. It affects the preparation for the preschool teaching and resulted in inefficiency of ECCE. Also, the ICDSCAS does not have any component of ECCE, which has resulted in the AWWs not giving ECCE a priority anymore. ECCE seems to have been relegated to the background.

Moreover, anganwadi workers have to submit a comprehensive AWC Monthly Progress Report (AMPR) to their supervisors on the first working day of the month, which includes details of births, deaths and new registrations during the month, supplementary nutrition coverage, preschool education coverage, nutritional status of children, immunisation coverage, Village Health and Nutrition Day (VHND) activities summary and referral services. Hence, they cannot dedicate the preschool time properly.

ii. Various meetings and classes / community-based events (CBE): AWWs organise various community-based events such as mother's meeting, Seemantha Sangamam (for pregnant women), Varna Sangamam (for adolescents), Dhampathi Sangamam (for couples), Kunjoonu (for children after six months), Nirmalsangamam" (for all category of people about health and sanitation), meeting for older adults, nutrition and health education, coordinate immunisation camps and health check-up camps, and Anganwadi Level Monitoring Supporting Committee. Most of the AWWs reported that it disturbs the preschool time. From another perspective, though, this scenario also implies that teachers need to perceive the development of children under their care as the most important duties, which

should not be compromised for the sake of other responsibilities.

VI. Financial assistance

i. Delay in funds: National Nutrition Mission provides funds as well as Central government grants Rs. 5,000 per anganwadi to purchase a preschool kit, which includes workbook of anganwadi children, progress report, certificate and teaching aids, Rs. 1,000 for medicine kit and Rs. 2,000 as a contingency. A few AWWs opined that the delay in granting the funds affects the proper functioning of AWCs.

VII. Supervision and training

i. Insufficient training: Induction Training (on appointment) mainly to AWWs, Job Training (once during service period) and Refresher Training (once in every two years), are the three types of training for AWWs. But some of the workers, not content with the current training practices are demanding more comprehensive training to implement the thematic calendar.

ii. Inadequate instructions and guidelines: A few AWWs opined that lack of adequate instructions and guidelines from the supervisors and child development project officer (CDPO) is one of the hindrances in the implementation of the thematic calendar. It is revealed that the frequency of visits by the supervisor, child development project officer/assistant child development officer and health staff is irregular.

VIII. Honorarium

i. Unsatisfactory honorarium: The honorarium for AWWs is Rs. 12,000 per month, which is shared by the centre, state and local body as Rs. 4,500, Rs. 5,300 and Rs. 2,200, respectively. The anganwadi workers are dissatisfied with the meagre amount, especially when comparing it with their endless services and present-day cost of living.

Measures to overcome the challenges in implementing the thematic calendar and improving the practices of anganwadi workers

The essential measures to be adopted are given below with various heads, such as administration, curriculum supports, infrastructure, in-service education, financial assistance, service conditions, and other supports. This will provide a better opportunity for AWWs to implement the thematic calendar appropriately, which in turn, will result in the holistic development of preschool children.

Administration

The admission criteria should be revised regarding the time of admission, age of the children and number of children in an AWC by maintaining the AWW:child ratio of 1:20 for 3-6-year-old children. It is necessary to study the absenteeism factors and adopt adequate strategies for increasing the attendance and completing three years of preschool education. Provision for special anganwadis for differently-abled children in all ICDS projects need to be promoted.

Curriculum supports

The activities in the thematic calendar should be reviewed to make necessary changes according to the need of the children. Ensure adequate and timely distribution and proper utilisation of logistic supplies, especially the essential aids for teaching various themes.

Infrastructure

Child-friendly indoor and outdoor infrastructure facilities with adequate technological devices should be made available. Basic amenities like lighting, drinking water, toilet, etc. should be ensured while introducing new AWCs.

In-service education

Provide comprehensive training to AWWs and helpers on child development and in implementing the thematic calendar in an

interesting and child-centred way. CDPOs/ district level officials should also be trained properly on monitoring the implementation of the thematic calendar.

Financial assistance

Supply of adequate fund in time is essential for the smooth functioning of AWCs. To enhance motivation and self-satisfaction, make necessary increments in the honorarium of AWWs based on their work.

Service conditions

Review the work assigned to the AWWs and reduce the burden of surveys and meetings. It will help AWWs to focus on preschool education and to achieve its objectives.

Other supports

Frequent interactions among AWWs and supervisors should be ensured and adequate directions should be provided to AWWs in imparting the thematic calendar. Public awareness on the significance of early childhood years and non-formal preschool education need to be strengthened and more community participation to support the entire services should be ensured.

Conclusion

Curriculum, the backbone of any education system, has an immense role in the development of children. Many factors – learner, teacher, infrastructure, instructional, and parental factors – are responsible for the improper implementation of the thematic calendar in AWCs and for not achieving the objectives of preschool education. However, this study considered the factors regarding the perspectives of AWWs only and has not taken other perspectives like that of parents, learners, teacher educators of AWWs and administrators into consideration. Naturally, instead of self-criticism, AWWs may be attributing the major challenges in implementing the thematic calendar to the factors other than those inherently connected to quality, motivation, training, and commitment levels of themselves and highlighting the learner related, familial and systemic factors. The observations herein needs to be read with these limitations of the present study.

Overwork and underpayment are the major hitches they are facing at present in the proper functioning of preschool education. The additional activities apart from their routine work can lead to extreme stress among AWWs. Most of the NIPCCD reports also recommended that work assigned to AWWs need to be reviewed keeping in view the extreme pressure on AWWs. A report published by NITI AYOG (Government of India) in 2015 revealed that 41 per cent AWCs have either a shortage of space or unsuitable accommodation and only 48.2 per cent of anganwadi centres maintain good hygienic condition. The findings of the study reveal that still there is no improvement in these areas. It is appreciable that realising the importance of preschool education, the Women and Child Development Department is set to construct 210 smart anganwadi centres across the state as the pilot stage, with required infrastructure and focus on the overall development of children. Though it is one of the necessities, only smart anganwadis will not suffice to achieve the objectives of preschool education. Hence, each and every challenge is to be addressed and rectified with necessary steps and innovative strategies to support the development of preschoolers, the most vulnerable group constituting 36 per cent of the total population of India, according to the objectives of the preschool education.

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A Strategic Decision Model Proposal for Open and Distance Flexible Technology-Enabled Learning Environments

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Abstract

Open and distance flexible learning is a strategic issue since it means making the criteria of learning flexible by using technology to support learning. It is necessary to collect data and analyse with analytical methods in order not to succumb to the rapid developments in the environment, especially in technology and to be proactive. In this context, it is necessary to evaluate open and distance flexible learning environments with strategic management principles and to establish continuous development and improvement cycles. This is because the technological changes developing very rapidly in the 21st century we live in reveal the necessity for reorganising open and distance learning environments and the need for continuous improvement. In this study, a model proposal is presented together with a conceptual perspective for a strategy decision model to be developed for open and flexible learning environments. The strategy is the methods and approaches the institution will follow to achieve a goal. Creating strategies in both institutional and educational processes, seeing the progress of the processes, making predictions and planning for the future are important steps to make evaluations. In strategic decision making, attention is drawn to the collection and evaluation of data by analytical methods with a synergistic structure, taking into account the knowledge, experience, wishes and expectations of stakeholders. Within the scope of this study, a research was carried out on how to implement the strategy decision model in developing an open and distance flexible learning environment.

Introduction

The advances in technology continue to gain momentum day by day. Those, who keep up with this change and who are positioned with the right strategies for the future, survive and ensure their sustainability. This is true for governments, companies, as well as individuals, events and learning environments. They can play a proactive role in the future with the right strategies. In this context, it is necessary for the success of education, which is the most important element in the life of societies, to set forth strategies with the same sensitivity in open and distance learning, flexible and personalised flexible learning environments, which is an application method integrated with technology.

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There are various studies in the literature on the strategies of open and distance flexible learning environments. Berge (2001) states, "In an organization that has distance education and training as part of its profile, the key to sustaining technology-based learning at a distance is strategic planning." In his study, Hache (2000) proposes a strategic planning model adapted to the special needs of distance education in a proactive and technological environment. The proposed model is adapted to the specific features of distance education. The diagram created provides a nonlinear approach that shows the interaction and dynamics between various elements and decision-making bodies. Preparation of planning stages; information collecting, analysis, and systemic assessment; strategic decision; implementation; and assessment and management of the implementation are the five major components of this approach. Adams and Seagren (2004) compared three different strategic thoughts and strategic choices in their study of mental models and strategic choices in distance education. The study resulted in that: strategic views are more diverse than predicted; although strategic choices are adapted to local settings, they discuss common DE topics; and the strategic decisions made by the college and the views of the leaders are in sync. McLaughlin-Graham and Berge (2005) examined the strategic planning process in relation to the continuation of distance education and training in their study. Strategic planning is a critical part in the continuation of distance education. Thanks to this type of planning, it can solve business problems involving organisation, education and training in an effective and often cost-effective way compared to staff training efforts. Watkins and Kaufman (2003) proposes to initially conduct a needs assessment to determine whether institutions are eligible for distance education. These suggestions are derived from three fundamental principles: Distance learning is a tool for achieving a goal, not a goal in and of itself; not all outcomes are the same; and for the analysis to be effective, this 'need' should be treated as a noun rather than a verb. As more organisations try to implement or expand distance education programmes, integrating distance education programmes into broader strategic visions and plans becomes critical (Pisel, 2008).

Three experts in the fields of open and distance learning and strategic management worked on this research to develop a strategic decision model for the open and flexible learning environments. This study focusses on theoretical issues.

Open and distance flexible learning

Rapid developments in information technologies such as radio, television, telephone, computer, internet, satellite, etc. in the late 20th century not only affected human life, but also caused a paradigm shift in new education and teaching methods, especially affecting the functioning of educational activities. With these changes, new learning environments have started to emerge in open and distance learning systems. Especially recently, environments such as open course resources and massive open online courses have started to be offered by many leading institutions.

Learners are given several alternatives to customise their learning experience based on their requirements and interests in flexible learning (Demetriadis and Pombortsis, 2007). Making learning flexible depends on different variables such as lesson resources, variety of learning activities, environments used to support learning (Collis and Moonen, 2002a, 2002b). Li and Wong (2018), summarised the components of flexible learning by compiling them from different studies in the literature. These components are time, convent, entry requirement, delivery, instructional approach, assessment, resource and support and orientation or goal. The date/time determined for the start or end of a lesson and the learning rate in the lesson are included in the 'time' dimension. The flexibility of the content is related to the subject in the course

content, the difficulty level of this content and the order of the topics. The prerequisites for attending the course are in the dimension of 'entry requirement' and the platform on which the content will be presented is in the dimension of 'delivery'. What the learning activities will be, the language to be used, the presentation methods, the duration and type of these activities are determined in the dimension of 'instructional approach'. The 'assessment' dimension includes the assessment mode, standard, deadlines and grading of assignments and exams. While learning materials, tools and support services are in the 'resource and support' dimension, the orientation and purpose of the course are in the 'orientation or goal' dimension.

Different researchers focussed on different dimensions of flexible learning, and generally there is no holistic approach in the studies. Institutions in the field of open and distance learning offering flexible learning opportunities should develop specific strategies to plan the future. While there are different alternatives especially for individuals to choose from, it will be insufficient for each institution to only develop a strategy. The implementation of the developed strategies, their sustainability and the presence of control mechanisms are important points. Based on this point of view, the current study gives conceptual explanations on how to develop a strategic decision model for open and distance flexible learning environments, and afterwards a model is created.

Strategic management and strategic planning

"Strategy is used to create a focus, harmony, rhythm and purpose for an organisation by developing plans, manoeuvres, models, positions and perspectives to guide the strategic movement" (Nut and Backoff 1992:55). The strategy covers the measures and regulations taken to achieve the goals. It can also be considered as the path that all organisations will follow to survive and increase their effectiveness (Güçlü, 2003: 67).

Creating an institution's strategy consists of five interrelated stages (Thompson et al., 2016) (Figure 1).

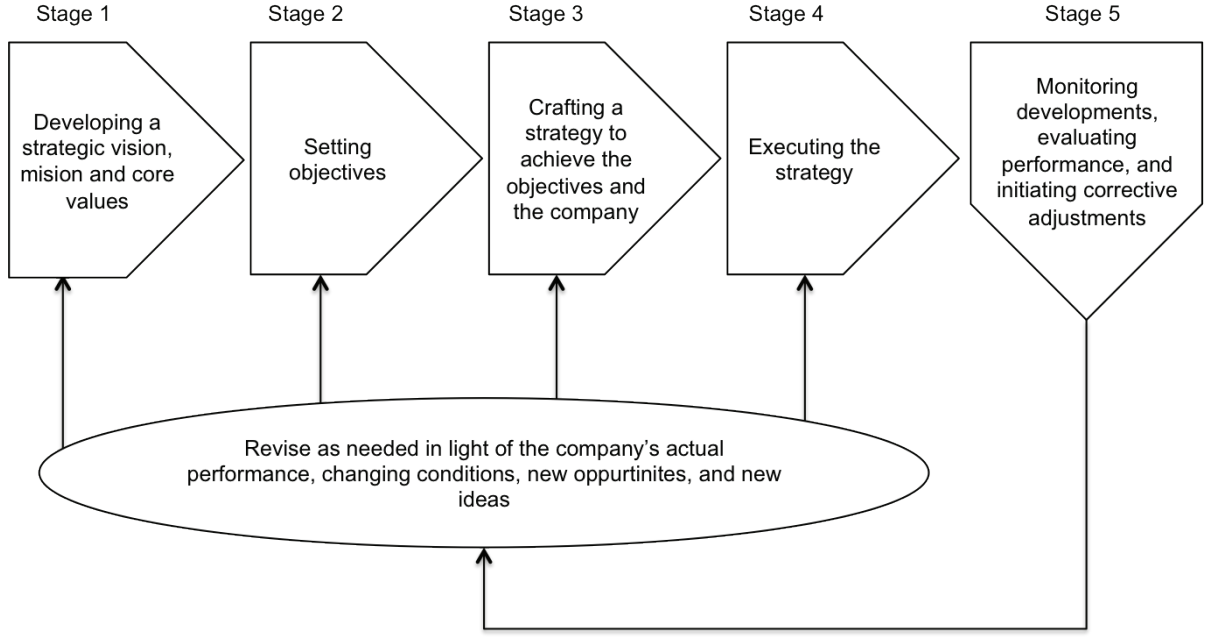

Figure 1. The strategy-making, strategy-executing process

Phase 1: Developing a vision that defines the direction the company wants to be in the future, a mission statement that defines the purpose of the company, and values to guide them.

Phase 2: Measuring performance to evaluate the direction the company will move forward in the long run.

Phase 3: To set a strategy and target to realise the big goal (vision) determined by the company management.

Phase 4: Implementing strategies effectively and efficiently.

Phase 5: Continuous improvement by following all the above steps regularly.

In the 21st century, which is becoming globalised and in which competition is intensifying, strategic planning is gaining more importance every passing day. Strategic planning, which is a discipline of questioning and investigation, seeks to answer the following three basic questions (Gürer, 2006).

1. What are we as an institution? (Which business are we in? What are the quality and quantity of our human resources? What are our management methods and techniques? Who are our customers?)
2. What do we want to be? (In which area do we want to do business? To which level do we want to bring our human resources? How will we improve our technology?)
3. How will we achieve our goals? (How to combine human resources, technology, finance and management strategies to achieve goals will be determined at this stage.)

In these questions, we have to add the question "How do we measure that we have reached our goal?" as the fourth item. With this question, the performance evaluation phase of the strategic plan is also created.

The strategic plan is expressed as the decision of where to reach in the future from the current situation, and how, as well as what is intended to be realised, and it is defined as the sum of the decisions on this issue (Demir and Yılmaz, 2010). The benefits of strategic planning for institutions have been expressed by experts in various researches. Bryson (2004) stated that the first benefit with regard to strategic planning is the promotion of strategic thinking and acting skill. The second benefit is that it provides improved decision making. The third benefit of strategic planning is enhanced organisational effectiveness and improved performance. *Fourth, beyond organisational effectiveness, strategic planning can produce enhanced effectiveness of broader societal systems. Finally, strategic planning can directly benefit the people involved.*

In addition to strategic planning, strategic management also deals with the management style, structure, culture, behavioural elements, and implementation and control functions of the enterprise (Ülgen & Mirze, 2010). Strategic management based on the strategies is open to development and innovation. It uses information and communication technology tools. Since the process is dynamic, processes need to be reshaped as conditions change and to maintain strategic management (Narinoğlu, 2009).

Decision making, in general, is a problem solving process by choosing, sorting or classifying among the available options (Karatop, 2015). The decision making process should start with identifying the decision makers and those affected by the decision outcome and minimising possible contradictions regarding the definition of the problem, options, needs, key objectives and criteria. The general decision making process is shown in Figure 2 (Özdemir, 2009).

Alternative criteria must be determined for decision making. If these are not available, there is no decision. The characteristics of the decisions we encounter in real life are multi-criteria, complex and uncertain. Karatop et al. (2018) benefited from expert and stakeholder views in the strategic decision model they created for domestic car production strategies in Turkey. In the study, it is emphasised that using this information, multi-criteria decision making techniques

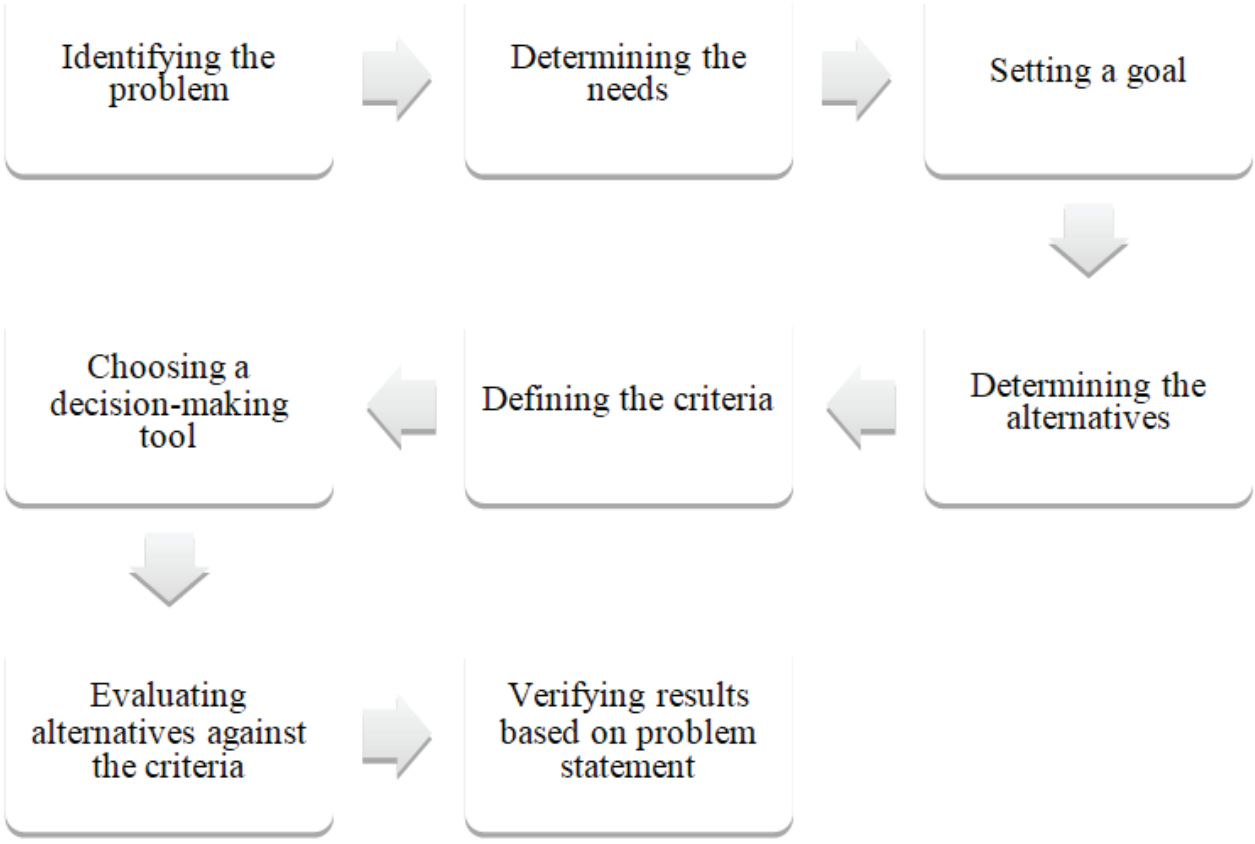

Figure 2. Decision making processes (Source: Özdemir, 2009)

integrated with artificial intelligence will contribute to the solution of the problem to reach optimal results.

Developing a strategy decision model for open and distance flexible technology-enabled learning environments

Strategy development is an important concept both institutionally and in terms of execution and sustainability of education in open and distance learning. The strategy decision model is developed to provide the closest solutions to real life problems (Karatop, 2015). Open and distance learning is a very strategic real life problem for societies. For this reason, the main strategic management tools and strategic decision making techniques are as follows (Aktan, 1998):

- SWOT analysis
- PESTS analysis
- Stakeholder analysis
- Portfolio analyses
- Q-Sort analysis
- Scenario analysis
- Vision/mission statements
- Call conference
- Delphi technique
- Nominal group technique
- Multi-voting
- Open group discussions
- Quality circles
- Cost-benefit analysis
- Risk analysis

Within the scope of this study, SWOT analysis, PESTS analysis, stakeholder analysis and difference analysis that can be used in forming strategies for open and

flexible learning environments, will be mentioned.

SWOT analysis

An important part of strategic management is strategic planning. An important part of strategic planning is current situation analysis. We can say that the most frequently used current situation analysis in the literature and practice is SWOT. The SWOT (strengths, weaknesses, opportunities, threats) framework provides evidence for strategy formulation, and analysis allows the collection of information about internal and external factors that may have an impact on the business (Pickton & Wright, 1998). The conceptual structure of the SWOT framework is as shown in Table 1 (Valentin, 2001).

Table 1. Conceptual structure of the SWOT framework

	Internal factors	External factors
Favourable factors	**S**trengths	**O**pportunities
Unfavourable factors	**W**eaknesses	**T**hreats

The strengths-weaknesses (SW) part of the analysis serves as in-house analysis and opportunities-threats (OT) part serves as environmental analysis. Therefore, the part that organisations can control and make the changes they want is SW. OT is the part where control is not with the organisation, but it will reinforce its position by taking measures (Kararop, 2015). Opportunities are the factors that can create positive results for the business as a result of the analysis of the external environment. Threats, unlike opportunities, are unwanted occurrences that arise as a result of changes in the far or near environment that may hinder the business from surviving or cause it to lose its competitive advantage. Strengths are the assets and abilities that have been revealed as a result of the analysis of the internal environment of the business and in which it can provide superiority to its competitors. Weaknesses indicate the situations where the current assets and capabilities of the enterprise are weak and low compared to its competitors (Ülgen and Mirze, 2010).

We can say that SWOT analysis is one of the important tools used in determining strategy. The strategies generally obtained from SWOT analysis are shown in Table 2 as SWOT strategies. The purpose of these strategies is to strengthen the institution or event by eliminating its weaknesses and to make use of all opportunities by

Table 2. *SWOT strategies (Source: Karatop, 2015)*

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Strengths	To reinforce the strengths more	To reinforce weaknesses by using strengths	To take advantage of opportunities by using strengths	To turn threats into opportunities or neutralise threats by using strengths
Weaknesses			To take advantage of opportunities that can reinforce weaknesses	To reinforce weaknesses to counteract threats
Opportunities			To take advantage of all opportunities by using opportunities	To turn threats into opportunities or neutralise threats by using opportunities
Threats				

turning threats into opportunities. The aim is to ensure sustainable development or improvement by performing this SWOT strategy cycle regularly.

PEST analysis

The concepts in PEST (political, economic, social and technology) analysis can be explained as follows (Downey, 2007).

Political factors include legal regulations such as labour laws, environmental regulations, tax policies, as well as political factors such as trade restrictions and political stability.

Economic factors affect an organisation's financial and purchasing power, such as economic growth, interest rates, inflation and exchange rates.

Socio cultural factors determine the needs and market size of the consumer such as population growth, age, cultural structure, and health.

Technological factors affect making new decisions and making investments on issues such as innovation, automation, investment incentives, and technological change.

Open and distance learning is an interdisciplinary field. It should not be considered as educational processes only. Many variables affect this system, from the technologies used to the characteristics of students, from the characteristics of institutional structures to changes in the economy, from the socio-cultural structure of the society to political stability. Therefore, the use of PEST analysis in open and distance learning in analysis processes will lead to correct results (decision).

Stakeholder analysis

Stakeholder analysis enables the identification of individuals, groups and organisations that will be directly or indirectly affected by the project results positively or negatively (Ünal and Ünal, 2015). Constant communication with stakeholders offers important opportunities to managers. Managers can evaluate organisational goals, provide unexpected opportunities for both stakeholders and the organisation, and prevent potential conflict before reaching the critical stage (Phillips, 2004 as cited in Sarıkaya, 2011).

Stakeholders are people who are related to a structure. They may be in a position that affects or gets affected by that structure. Stakeholder maps consist of wide categories. The probability of all people and groups in these categories to communicate or influence the institution is not equal. It may also not be possible for the institution to respond to the demands and expectations of all stakeholders at the same time (Grunig and Repper, 2005:142). It is necessary to determine which stakeholder groups have the most impact on the organisation, which expectations need to be considered more, and to what extent the expectations and effects of different stakeholder groups are diversified (Johnson et al., 2008, 103: as cited in Hoştut, 2018).

While designing open and distance learning environments, it should also be taken into consideration that there are many stakeholders in the system. It is important to involve stakeholders such as students, field experts, other experts, academics, volunteer learners, application developers, instructional designers, and administrators in the open and distance learning field. In open and distance flexible learning environments, involving stakeholders in decision making processes and performing stakeholder analysis meticulously plays a critical role in determining strategies.

Delphi technique

The delphi technique is often used for the prediction of factors in the technological environment. They enable experts with various opinions to share information and ideas on a particular subject and agree on a common decision on that issue. In this technique, experts do not come face to face, so it is not known which idea belongs to

whom (Ülgen and Mirze, 2010).

The delphi technique can be used in the design of open and remote flexible learning environments and in SWOT analysis. Right and optimum decisions can be made by transforming the demands and expectations of the stakeholders and the implicit knowledge and experience of different experts in the field into open information with the delphi technique.

Difference analysis: The difference analysis, which we can describe as the performance gap, is the difference between the expected situation and the desired situation in the future. It is not the difference between the current situation and the desired situation. In general, these two situations seem to be confused in practice (TÜSSİDE, 2007).

After determining the difference, answers to the following questions should be sought in general to identify the situation better and to make the analysis.Is the difference arising from the internal or external environment (from which factors of SWOT)?

- Are the organisation's potential resources (strengths in SWOT analysis) capable of closing the gap in performance?
- Can an appropriate strategy be developed (with strengths and opportunities in SWOT analysis) to close the gap?

To ensure continuous improvement in open and remote flexible learning environments, performance must be measured and negative aspects need to be eliminated with difference analysis.

Creating models

The model proposed in this study (Figure 3) is based on strategic management principles that are critical for businesses. Open and distance flexible learning is shaped on a certain mission and vision. We can say that it has values accepted by field experts. At the same time, it is necessary to analyse, and update the mission, vision and values that are named strategic concepts by field experts with analytical methods. The acceptance of these updated concepts by all stakeholders is another important aspect of the issue.

Since the mission is the reason for existence in strategic concepts, it does not require frequent changes. However, it is necessary to update the value and vision of education that feeds the capillaries of the society periodically by using stakeholder information in rapidly changing environmental conditions. We suggest that stakeholder information of these analyses should be done by analytical methods (multi-criteria decision making, fuzzy logic, artificial neural networks and other artificial intelligence methods).

The current situation analysis, which is the first step in determining the strategy, should be created by PEST and SWOT analysis. While PEST analysis completely analyses the entire environment of open and flexible learning with analytical methods, it is suggested in the model that the information of the field experts be obtained systematically with the delphi technique via the SWOT analysis question template. Thus, it is aimed to make SWOT analysis more inclusive and optimum.

Current situation analysis and in particular SWOT analysis can be described as the source of information for strategy formulation. Strategies for an open and flexible learning environment should

- reinforce its strengths even more.
- reinforce (weak) aspects that are open to development.
- take advantage of opportunities.
- turn threats into opportunities or eliminate threats.

It can be said that this will increase the added value of the learning environment.

Determining the performance criteria of the strategies is an absolute condition for continuous improvement. Performance criteria should be evaluated periodically and when there is a difference between the expected situation and the desired situation, the source of this difference should be sought in the SWOT analysis. This is

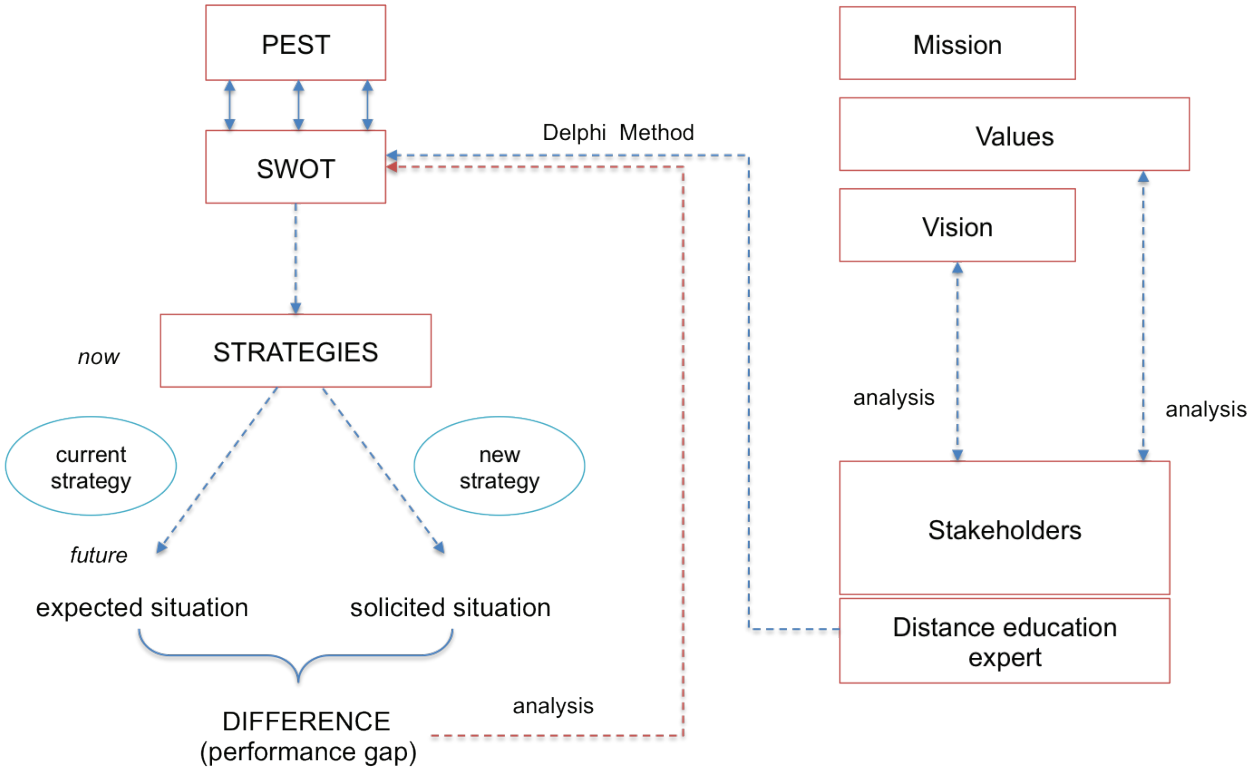

Figure 3. A strategy decision model proposal for open and distance flexible learning environments

because the strategies are based on SWOT analysis. If the strategies are not placed on an analytical basis, it will not be possible to detect where the difference may arise. At the same time, it is necessary to benefit from SWOT analysis to close the gap and to determine new strategies. For this reason, while creating SWOT analysis, which takes such an important place in the model, delphi technique is used to enable field experts to convey all their knowledge and forecasts.

Strategies in open and distance flexible learning environments should be evaluated periodically. Now, when we make this evaluation, we can see that "if we continue with this performance, we will not be able to realize the strategy with the desired performance at the end of the year." New resources (manpower, materials, more time) may then be required to close this gap. It also requires new strategies. The aim is to realise the strategy, objectives and activities of the current strategic plan.

Conclusion and implications

Creating strategies and making decisions about them is not a one-time application. There are also different variables such as whether the created strategies can be implemented or not and are sustainable. Open and distance flexible learning is a system integrated with technology. Developments and changes in technology lead to differentiation in open and distance flexible learning environments. Therefore, it is important to ensure the continuity of the strategies and adapt to changing environments. In this context, the proposed model has a dynamic structure and also ensures continuous development. It also uses a method that actively involves model stakeholders in strategies, transforming the implicit knowledge of the field experts into open information, thereby bringing their knowledge and experience to the analysis within a synergistic structure (SWOT).

While open and distance learning is a very strategic learning method that concerns

large masses, we can say that making decisions with analytical methods and strategic management principles will provide continuous improvement. The model is designed for this purpose.

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