NEP 2020 and Environmental Studies (EVS) Curriculum

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Introduction¹

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 concepts1, 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 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. 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 dowithout 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. 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 ageappropriate 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) 				

1. Multidisciplinary nature EVS curriculumThe 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 andfriends (relationships)	Family and friends (plants and animals)	Water	Travel
Key concepts/issues	Different eating practices in the family. Cookingand gender/casteroles in the family	Basic ideas of plants used as food; food from animals. Parts ofplants that are eaten	Use of water in cook- ing(steaming, boiling, mix- ing), 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 centred learning opportunities child 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 curriculumdevelopment is an emergent need of the hour.

Pedagogy and assessment in EVS

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 pedagogical approaches. in 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 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 child-centred, integrated, inquirydriven, 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 bewell 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 psychomotordomains" 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 inquiryoriented 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 curriculum review 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 pre-service and in-service) strengthened and improved simultaneously. The teachers need to be provided with training through the approaches such as multi/interdisciplinary, inquiry-based, exploratory, projects, etc., that they are asked to practise in the classrooms. The in-service and preservice 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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