



EXPLORING SCOPE OF NEP-2020 FOR AN INNOVATION BASED COLOUR CURRICULUM IN SCHOOLS

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Abstract: The education system in India, from primary to higher studies, has been accredited to the one that was introduced by Lord Macaulay during the British colonial period, which the country has not been able to replace even after six decades of independence. It has been a kind of imposed system that still introduces instructional methods initiated as a large-scale education system aimed at creating a workforce which could adapt to the then status quo of being aptly educated to help run the instructional teaching system introduced by the colonist Britishers which aimed to turn locally sourced human resources into extended helping hands of the rule in controlling the country as one of their colonies. The New Education Policy (NEP) introduced by the Union Cabinet of India in July 2020 has been looked upon with a hope for incorporating an immense transformation in the Education System of India. However, these changes would not become a reality overnight with a limited approach in understanding the actual roles of education systems in relation to context, learning, culture, diversity and cognition. This paper, like multiple ongoing efforts to outline methods for implementation of the New Education Policy, looks forward to exploring newer scopes of learning and discussing introduction of a few newer and creative ways and methods from design which can contribute to exemplify its application with the example of introducing learning on colour for children during the primary education stage. The paper mainly aims to get attention on colour as a holistic phenomenon, for its connect to human, environment and design spaces and recommends considering innovation at its core, as design methods can be one of the key verticals of NEP's 'Universal Foundational Literacy and Numeracy'(UFLN) besides reading, writing and arithmetic for all primary schools.

Keywords - School Education, Design methods, National Education Policy (NEP), Colour, Indian context

INTRODUCTION

It has been ages since the reforms and their implementation were introduced and implemented effectively into the Indian education system, that finds its roots closely to the one introduced by Lord Macaulay during the colonial British rule. The idea of this education system, as was apparent from its curriculum, methods and implementation, was to create a mediocre staff or a work force loyal to the Britishers and assist them running their rule locally while out of their own land (Balaram). The system popularized English language as a highlight of this system and promoted it as a route to achieve higher placement within a social set-up that was otherwise divided by culturally rooted social and economic stratifications. Indian education has not been able to get rid of this system even after different education policies have been introduced in the past. The silver lining on the clouds emerged since the Union Cabinet of India introduced the New Education Policy (NEP) on 29 July, July 2020 (MHRD). The key focus of this newly introduced system has been to re-position the context of 'Bharat' with a renewed approach, decolonizing and placing it far away than the 'India' is still carrying the overshadow of a British Raj. It is important to notice that NEP has recommended 'Innovation' as one of the most important intents of the core of education to be imbibed by the children or learners. Available literature on National Education Policy by Ministry of Human Resource and Development (MHRD), NEP reflects appropriate preparedness with an aim to build a stronger foundation for the Early Childhood Care and Education (ECCE) starting as early as by inclusion of 3 years old students. The idea of this is to endorse much-improved holistic learning accompanied by appropriate development and well-being side by side.

I. NEP AND THE SCOPE FOR INNOVATION IN SCHOOL EDUCATION

Since ages, a higher level of quality in Early Childhood Care and Education (ECCE) has not been felt into a reality or accessibility to a larger percentage of all the younger children's population in the country and the scenario has appeared as placing a tremendous pressure especially on children belonging to a socio-economically weaker section. Thus, designing a well-versed ECCE strategy and required investment in building ample educational access to facilitate participation for all young children is the need of strategic progression today and a notable progression in future. If fulfilled, it will help in appropriate shaping of children's future life, as future society will be in sync with such progressions taking place today while laying action points for the implementation of NEP. While analysing the core of ECCE for its proposed development among children with an aim to provide a

holistic, a multi-faceted and a multi-level flexible learning emphasizing play, activity and inquiry-based learning (MHRD), can be observed and visualized in the form of multiple layers. These layers, with the variety they offer, need to be explored to develop innovative methods for implementation and efficiency. Hence, each of these layers can be explored to provide a broader scope for introducing interesting and engaging learning methods to help the children get involved in the learning of core communications, which includes (a) Alphabets-languages focused approach, (b) Numbers-counting focused approach, (c) Colours-form-composition focused approach, (d) Indoor-outdoor play focused approach (e) Puzzles-logical thinking focused approach (f) Opportunity mapping-problem solving focused approach, (g) Fine art- performance art-applied art focused approach (involves drawing, painting and other visual art, craft, drama and puppetry, music and movement) and (h) Socio-cultural-sensitivity-moral-ethics focused approach and (i) Enterpriser-professional development focused approach (MHRD). Holistically, the development of appropriate learning systems and approaches to these inputs should be considered vital for achieving a consolidated, impacting and outcome-centric developmental objective via ECCE across child's learning domains such as physical and motor, cognitive, socio-emotional-ethical, cultural, artistic, communication, early language, literacy, and numeracy.

II. NATIONAL EDUCATION POLICY 2020, INNOVATION AND RESEARCH SCOPE

The paper, as initiated by a design researcher and educator, foresees a larger scope in NEP by inviting a freshness in approach towards an 'innovation based, improved education and learning system' starting as early as at a primary level, class three. As observed by Charles and Ray Eames, who viewed design as an activity improving quality of life, deliberated on identifying India's 'values and qualities' towards a good life (Eames and Eames). Eames also identified India as a tradition-oriented society and cautioned that conscious decisions are a must while introducing changes to a traditional society or to its values and qualities (Eames and Eames). Design learning at school is aimed at equipping learners with the information and capabilities appropriately fit to the need if they aim to follow design as a career and might overall have a series of objectives for their broader reach and development as a thought process appreciating creativity as one of the most fundamental quality (Tovey). Thus, NEP appears to represent a scope that can be nurtured into a fertile base for the carefully designed seeds of changes to be sown for appropriately conditioning the learners. This, in return, will help them become conscious, creative and empathetically enable professionals or citizens – as change makers emerging from all the future disciplines that they opt for - be it management to take conscious and innovative decisions, technology to balance technology and environment, literature to create newer narratives or industry to create innovative products and so on.

III. MOVING FORWARD WITH DESIGN AS AN INNOVATIVE APPROACH

Design incorporates popular methods for thinking and problem-solving that are highly driven by identifying and applying intuitive approaches to map new opportunities or problems. Design has also been credited for incorporating empathy as one of its cores, while placing innovation and creativity as its other vital cores. It considers these in the paradigm of context, stake holders, locations and availability. However, as observed by noted design educator S. Balram (Balaram), students complete an over-structured, didactic 'rote, routine, restriction' based Macaulay's higher secondary education system in India, but once they join any higher education professional discipline which demands their ability to take decisions, their struggles in adapting to these newer systems affects a creative learning process in return. Professor Balram also mentions that the Indian design schools spent ample time to make the students unlearn the ways of learning that they had been exposed to in past school systems to enable new learning, new things and new ways of design. The reason introductory input on design must be added to the school curriculum is because of its ability to address multidisciplinary requirements within the paradigm of any discipline. Findeli has already argued about paradigm shift in the field of knowledge and applied aspects in relation to design establishing that the history of design has witnessed it progressing from the influence of product engineering and marketing that stressed on the economic progression, a narrow view borrowed from anthropology emphasizing on human populations or users only as subjects or customer, an outdated 19th century idea of design narrowed to cognitive and ergonomic factors, an overly emphasized idea on material, product and aesthetics – extending to their shapes and characteristics, from a code of ethics in the business culture, contracts and agreements, a market-centric ecosystem, a history conditioned by material progression, a sense of time restricted by the fashion cycles and from an innovation fueled technological change (Findeli). Even though design is not one of these alone, it has crossed through all these as a part of its evolutionary progression into what it stands for today and as an umbrella capable of adapting multidiscipline as per the need. In recent times, it has become evident that the evolvement of economy in India has been shifting its core from being a service-economy to evolve into an innovation-economy. During the phase of the service-economy era within a few earlier decades, the hiring of the workforce needed to follow and meet client's instructions and decisions. A shift in this approach and development towards an innovation-centric economy has been changing the scenario and the country by adding innovators, decision makers and start-up entrepreneurs as new stakeholders of this new innovation-based economy. Also, these professionals belonging to various discipline domains are fueled by creativity in their approach and in novel ways, seeking a balance between sustainability and creative decision making. This growth has still been ongoing and has made India being observed as a fertile economy of future. Tovey quoting Gardner (1984) argues that abilities to handle issues with a focus on solutions, and visuo-spatial thinking are complex and time consuming to develop, hence we cannot witness them mature if their introduction takes place only at higher studies level (Tovey). Tovey also argues 'spatial ability' being a fundamental form of intelligence besides numerical and literary abilities. This research, therefore, looks forward to 'creativity' as one of the key guiding factors with the scope to build on creative thinking, critical thinking and holistic development as important guiding factors to be introduced for newer ways of learning. This, in return, might help achieve the goal of NEP faster in future. As mentioned above, NEP, through the core of ECCE, proposes a holistic, multi-faceted, multi-level flexible learning development among children with an emphasis on play, activity and inquiry. The influence of designed objects on life and values or solutions has personal and social implications and their impact on choices influences future material and visual culture (Tovey). Also, a design aware and design literate society can be seen as a help in better design decisions for meeting global issues such as sustainability. Basing itself on this NEP recommendations, this paper proposes introduction of learning on colour as a part of first initiation to an innovative and creative approach at an early, primary learning stage. Thus, the research also looks forward to the idea of making design education accessible to all, especially for the school children which might influence their competence in decision making or in dealing with general public (Tovey).

METHODOLOGY: Colour as a Design Method to Explore Learning Innovation

Colour has been a vast, complex and varied subject and it poses a series of challenges that encompass different aspects of human, society, environment, product and services. It has been part of both kinds of learnings, objective and subjective. While sufficient research appears on a few scientific, chemical and physical aspects of colour, it has never been introduced with learning scope on its unexplored areas at higher education stage in design. It has been considered important in human life and is driven through marketing approaches with a mix of psychological, social, environmental, visual, material, technological and creative decisions. Humans have missed on social history on colour because of the complexities it poses (Finlay). Wittgenstein also defined it being 'perplexed' (Wittgenstein and Anscombe). There still remain fundamental questions related to colour's prescription, use, nomenclature and choices (Sinha). As used in the fashion cycles, the 'colour trend and forecast' has been a borrowed idea from the western practices that has been adopted by the Indian markets and commerce. However, unlike western counterparts, the rationale behind these does not actually study the taste and choices of its own, local population and its adaptations have been purely commercial. Interestingly, existing views elaborate that people living in the manufactured world have complete colour control for everything offered through manufacturing or service while it is completely different in a natural setting where it cannot be fully controlled for market, product or service (Zorich). Similarly, the 20th century design education adapted into the curriculum of India's design institutes has also been a borrowed idea that practices the 'Bauhaus's model of curriculum. Even if a few achievements by local institutes have been milestones of change to orient the learning to a local context, the conditioning through a Bauhaus based 'foundation course' for students coming from different disciplines and backgrounds has not changed for ages. The colour course is introduced at this stage only and later, when students work on projects or practice as designers, do not have a local method of colour application but to rely on a market centric choice system adapted directly from western colour forecasts. Besides, there have been sufficient proof of Indian colour practices, as diverse as the crafts of different regions with their own colour contexts, colour meaning and colour applications. These demand sensitive and empathetical take on colour. These provide a vast base of Indigenous knowledge on colour yet to be explored. Indian ethos also cover their own colour theories through ancient and medieval literature – *Chitra sutra*, *Natyashastra*, *Ain-e-Akbari* to name a few which provide detailed description on colour meaning, method and use. One of the earliest design institutes, National Institute of Design, might also have its own experience of colour after exploring colour course for more than six decades along with its long exposure to the locally explored context of design through grassroot level projects and documentation.

On the pretext to these, few studies posit that colour impacts cognitive thinking processes and affective learning domains. One of such studies demonstrated that the effect of colour depends on the individual's age, gender, developmental stage, colour sensitivity and preference, the kind of subject under study, and the activity being carried out. Research also posited that specific colours impact learners' morale, emotions, behaviour, and performance (Hill). This paper, henceforth, is an effort to start a dialogue on establishing the core need of the new education from a perspective to be 'inclusive to local needs' and 'local knowledge creation' which might help in setting up an outcome-centric developmental objective using colour via ECCE across child's learning domains such as physical and motor, cognitive, socio-emotional-ethical, cultural, artistic, communication, early language, literacy, and numeracy. Considering the complexities the nature of colour offers and its vastness across domains, cultures, disciplines and in the variety of its meaning and usage in a highly diverse country like India, it requires empathetic take on colour from a diversity context which might demand a gradual and long-term and a very engaging approach to help children connect across discipline with higher interests. Also, it should be planned as gradually moving from the simple to complex domains involving colour articulation, communication, perception, meaning, material, making and application. Considering the absence of such a scope in any of the existing disciplines or domains taught at the school education level, the research identifies design, a discipline efficient to address open ended and speculative situations, to be incorporated as the key stakeholder for developing the introduction of this specific curriculum for early schooling classes as per NEP guidelines.

To strengthen its deliberations, this study draws inferences from some of the relevant questions that were asked during survey research, that was conducted on 80 first year undergraduate students undergoing design foundation studies at the National Institute of Design (NID). The purpose of this study was to understand and elaborate on subjective aspects related to colour that were imbibed previous to design education or before going through a formal education specific to colour, and were developed, understood and related to by the students as a part of their informal learning on colour. Such studies have also been initiated as a part of scholarly research by the author. The idea of these studies is to utilize the findings in establishing contextual relevance to colour – environmental, cognitive, perceptual and applied - which can contribute to the larger agenda of making the colour learning in design more relevant and inclusive to real life, the Indian context with a pluralistic approach by identifying connecting dots that can contribute to revise its curriculum.

The frequency distribution from some of the survey questions represented interesting findings, which are discussed here:

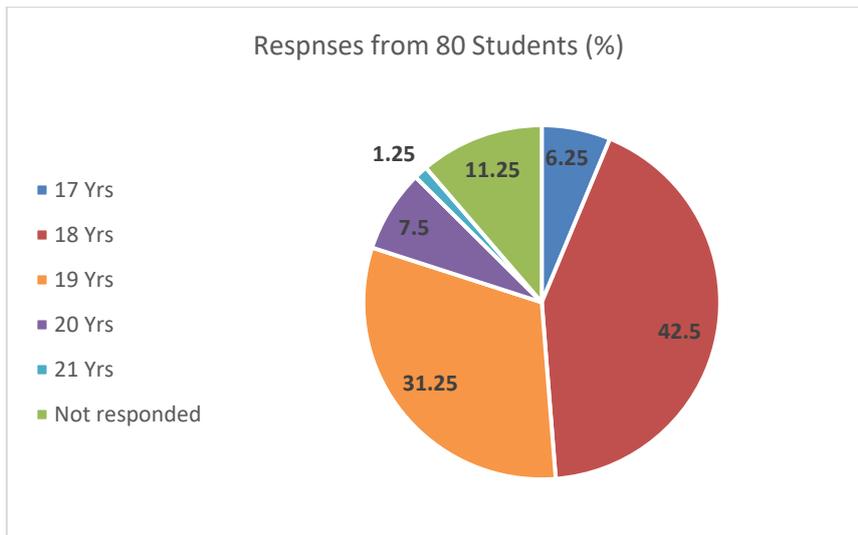


Diagram 1: Demographic data of age wise distribution of responses

The demographic data presented in Graph here represents that the maximum percentage (42.5 %) of students belonged to the age of 18 years from those who responded to the survey from a class of 80 students. The 2nd largest respondents (31.25 %) belonged to the age of 19 years. 9 students belonging to this group did not provide any information on demographic details and account for 11.25 % in the graphic diagram. One of the findings suggests that 17-19 years combined cover the 81.25 of the group who were still into teens, hence, had joined undergraduate design education immediately after completing their schools.

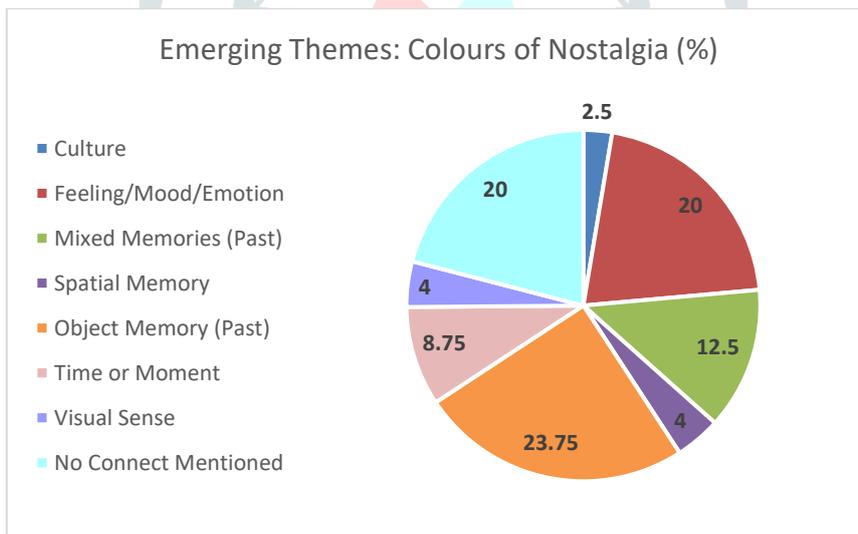


Diagram 2: Thematic coding analysis of responses of the survey on colour and nostalgia

One of the key questions asked was on ‘what was the colour students found most relevant to nostalgia?’ A particularly important reason behind asking this question was the fact that they could strongly relate to nostalgia because of their stay away from their parents and home for a longer time, while trying to adjust to a new Hostel environment. Most of them, coming straight from schools, were, for the first time, in a 100% residential education that NID offers. The responses in the questionnaire allowed subjective responses but with strict indicators so that they do not loose relevance as well as the depth of connections could be understood at an emotional level too if so emerged. The responses to this subjective question were analysed through thematic coding analysis and were articulated into distribution of responses relevant to these theme codes. Around a total of 8 themes emerged as key connections which were used as codes.

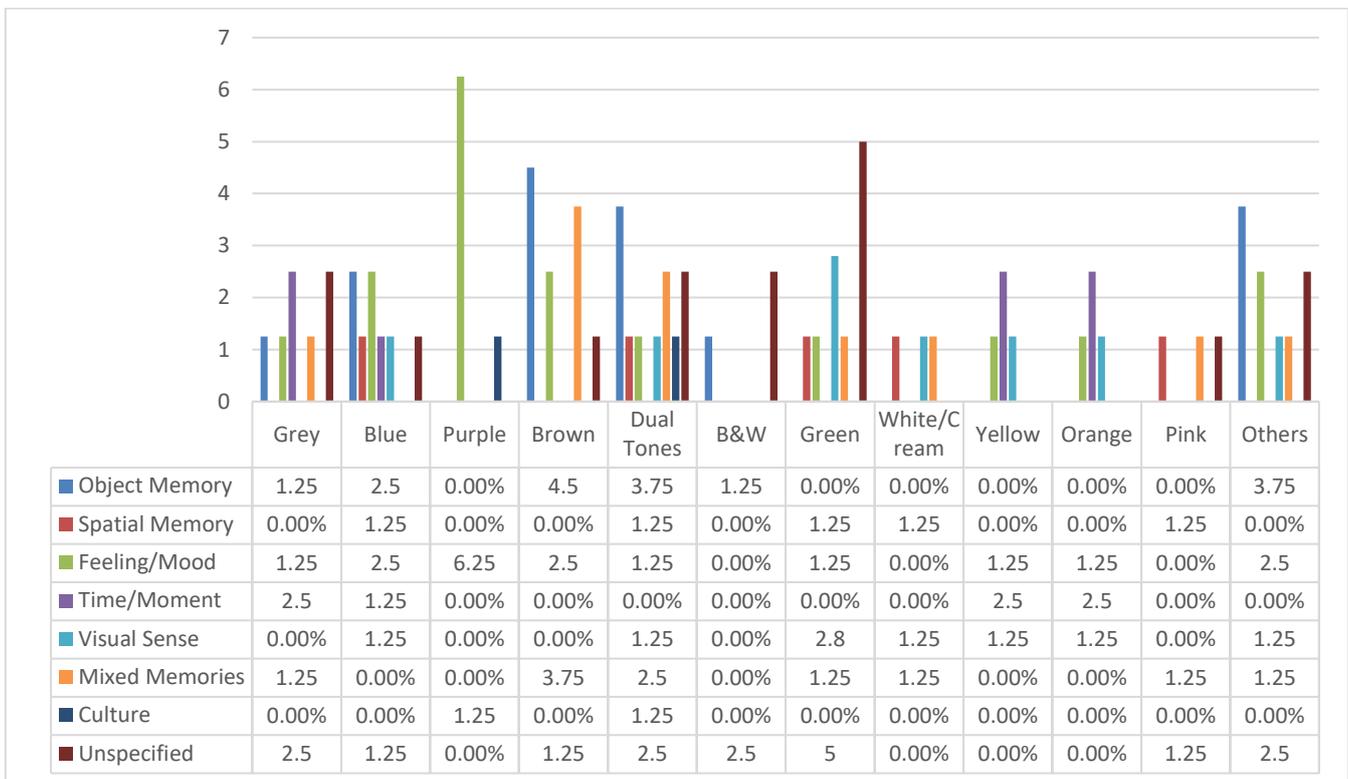


Diagram 3: Theme code analysis of responses and emerging connection with colours and nostalgia

As mapped from the responses, the analysis in **Diagram 3** here represents that Blue, which accounts for 7.5% as a single hue, represented a diversity while being spread across maximum differently coded themes that it was associated with. Hence, making it a common connection across a variety of themes. Grey accounting 6.25% of the responses also was next to blue. Besides, there were also mention of a colour grouping with more than one colours as ‘Dual tones’, with 7.5% of selection, it included 6 different theme codes to connect to. Brown emerged as the single colour with maximum associations. However, most of the connects it had was with the theme, ‘Object memory’. Purple accounting for 7.5%, emerged as having maximum responses to connect to the theme ‘Feeling/Mood’ (Emotional aspects). Maximum number of connects were made with Brown (16.25%) and Dual tones (12.5%). If we include ‘Black and whites’ also in dual tones, its score will become equal to Brown’s.

FINDINGS

The summated findings that emerged from the research strongly indicated that in India, stronger colour connections are not universal and demand a close observation to identify their indicative routes to the past knowledge that gets ignored in formal education. It also suggested that instead of universal approach for all, like trend and forecasting, India needs to establish its own ethos to expand strength on colour which requires gradual conditioning and not teaching. It also emerged that many students who were interested in responding, found their own connects which suggests increase in learning engagement of learners, as all had their own personal connects to it. The kind of possibilities it has, if introduced at school level. will not only help leverage on economy or industry but knowledge wise and holistically.

One of the key emphasis that NEP has placed higher on its agenda as an urgent and necessary prerequisite for future schooling and lifelong learning has been introduced as the concept of Foundational Literacy and Numeracy (FLN) to tackle the current learning crisis of around five crore elementary school children not being able to read, comprehend basic textual information or understand basic math or numerals to even carry out addition and subtraction (MHRD). However, as identified from study, visual, colour and form literacy can also be given consideration as an important aspect to be introduced as early as elementary school learning. Visual literacy can cover the fundamentals of appreciating and applying foundation learning from design and might emphasize elementary learning of colour, form, shape, composition. Also, as a third vertical within the domain of FLN’s visual-form literacy, it should also be included in the new curriculum of elementary school learning. The NEP policies can look forward to its systematic inclusion to reach to the objective of achieving foundational literacy and numeracy as a part of important national mission to achieve the preliminary level of the milestone by 2025 (MHRD).

The implementation and monitoring plan, hence, needs to be achieved stage wise, requires defining the two verticals with three distinct focuses as following:

Table 1: Mapping Concept and Focus on School Inputs for NEP

SN	Concept of Input	Focus	Type of Input
1	Foundational Literacy:	Vertical A:	Alphabet-languages focused approach
		Vertical B:	Colours-form-shape focused approach
2	Numeracy:	Vertical C:	Numbers-counting focused approach

For the two core focuses of these two verticals, Alphabets-languages focused approach for developing foundational literacy on reading and writing and Numbers-counting focused approach for developing numeracy abilities in carrying basic

calculations of addition and subtraction have to be addressed by identifying and recruiting sufficient teachers in the areas with low student-teacher ratio and disadvantaged areas with lack of education system, the third focus, development and learning of a 'colours-form-shape focused approach' requires an innovative strategy different than these. To yield favorable results, the plan requires to conduct 'basic design aptitude tests' to identify appropriate number of teachers who, further can be trained through introduction on teaching of the most basic and 'fundamental design courses' – Colour, Form and Composition.'

CONCLUSION

The education in India has been continued with Macaulay's linear, didactic based, colonial education system having a different intention than what India seeks for today and future. The Government of India introduced the New Education Policy in 2020, which offers tremendous scope to deviate from earlier system and establish NEP with innovation as one of its cores. This study evaluates NEP for the scope on inclusion of innovative approaches which can help to convert the early stage of school education to nurture creativity, empathy, problem-solving and parallel thinking by incorporating the basics of design approaches. However, it requires careful analysis and elaboration of the NEP into practical, implementable curricula structures which, in return, can become engaging and encouraging for the children to take-up studies and develop parallel abilities besides basic education. It is also high time to align the outcome to target a strong future of social and economic development that is 'innovation driven' and not merely 'skill driven'. Colour, being an extremely complex phenomena, offers a multi-faceted learning scope relevant to different aspects, be it socio-cultural, environmental, technical, visual, communicative, cognitive, psychological, physical and many others. Thus, it becomes an important subject having grounds with both scientific aspects as well as subjective aspects. Learning to articulate different aspects of colour is not possible within the short-term basic courses at a higher education level. Hence, starting an early education on colour and its evolvement with progressing classes would prepare the learners with a strong focus while dealing with different challenges within a variety of contexts on the same entity. If designed well, it can develop creative and innovative abilities, handling emotions, developing empathy and becoming considerate as well as developing different levels of skills. It will also help develop a repository of existing and past Indian ethos on colour that has become obsolete for some time. It will help develop better control over our own market choices than allowing any other trends and forecasts to take over it as a business. Also, the future looks forward to inclusive approaches to colour by meeting challenges it poses for a democratic practice, as its values also demand to consider colour a social or cultural phenomena. As the community practices are dependent on human culture, education and such periphery, to provide support to a growing child as the future member of it, education must help in shaping everything that colour influences - communication, symbolism, value and engagement into aesthetics - for a better tomorrow.

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