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Vocational Education in Mainstream of School Curriculum

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Abstract

The disconnect between vocational education and mainstreaming has always existed in India. NEP 2020 seeks to fill this void not only through policy-proposed innovations but also by taking into account ground realities such as interviews conducted in urban and urban-slum areas of Delhi. Inviting experiences from teachers, subject experts, students and their parents, this study highlights barriers such as fragmentation of curriculum, inadequacy of teacher training and social biases. At the same time, first-hand experiences highlight emerging trends through competency-based curriculum and public–private partnerships that promise to open up avenues for inclusive and lifelong learning in India.

Keywords: Vocational Education, School Curriculum

Introduction

As India's economy grows rapidly, the demand for skills is becoming increasingly complex. In the traditional educational framework, vocational training has been seen as a 'second option' and has not always been prioritized. The reforms of 1968, 1986 and 1992 failed to have the desired impact as they did not take into account the experiences of students, parents and teacher

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educators at the grassroots level. NEP 2020 recognizes this flaw and suggests a convergence of vocational and academic subjects in the curriculum. Its ambition is not limited to official documents but also proposes policies that are linked to real-world experiences so that policy-making can be more effective on the ground (Pathak, 2020; Aithal & Aithal, 2020).

This study examines government and academic documents as well as experiences gained from interactions with teachers, students and their parents in various schools in Delhi. These interactions gave us a vivid picture of building bridges between the design of the curriculum, teacher training methods and societal expectations.

Literature Review

The journey of vocational education in India has always been full of struggles. The National Policy on Education 1968 recognized this disciplinary path, but lack of resources and institutional support kept it out of the mainstream (Sharma et al., 2024). Later, the NSQF and monitoring committees provided a formal framework, but the steps of rational curriculum design and sustained follow-up remained incomplete (Vats & Malik, 2024; Gadling & Bhosale, 2022).

In international contexts, Germany's two-way model and South Korea's industry-school collaboration system teach us that vocational education flourishes only when the curriculum is constantly updated, teachers receive modern training and close linkages are established with the industry (Singh & Gunasekaran, 2021; Aithal & Aithal, 2020).

In India, scholars have praised the NEP 2020, yet they have also highlighted the ongoing challenges of resource constraints, social bias and teaching-learning. It is clear that continuous adjustments in curriculum and teacher development will be essential to connect policy proposals with ground realities (Pathak, 2020; Sharma et al., 2024; Vats & Malik, 2024).

Research Methodology

This research combines a document-base analysis and an interview-based qualitative approach. A review of policy-key documents such as the National Education Policies and chapters of the NEP 2020 introduced us to the historical and current form of vocational education. In addition, interactive meetings with teachers, students and their parents in various government and private schools in Delhi provided an opportunity to see the impact of the policy on the ground. These

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discussions highlighted the gaps in the fragmentation of the curriculum, training structures, and societal expectations.

A thematic analysis was prepared by linking the perspectives of the audience, investigator and participant, in which cultural perceptions, personal aspirations and technical challenges related to pedagogical-training played a key role.

Early experiences and reflections

When teachers were spoken to, the lack of resources was a common concern: old machinery, limited laboratories and outdated textbooks. They said that unless teaching-learning matches modern equipment and industry standards, it will be challenging to learn in the classroom and become job-ready.

On the other hand, students and their parents shared a dual perception of vocational subjects. Some parents viewed it as a 'second option' in terms of social prestige, like "at least they will fail, they will learn something and will have a lot of respect." On the other hand, many families saw it as a powerful tool to become self-reliant. Students of a government school in Amar Colony were surprised to say that the skill activities in the school related to beauty, cooking and textile industry took their confidence to new heights.

A partially disabled student shared that when he started electronics training, he felt his disabilities were a hindrance, but the encouragement of teachers not only motivated him but also got him an opportunity in a reputed MNC. This experience shows how guidance and a comfortable learning environment can make a huge difference.

Trainers acknowledged that technical issues persist, but they also pointed out that over time, public-private partnerships have led to a wave of improvements in resources at training centers. This indicates that the policy framework is working towards making a difference.

There is a real investment and dedication in the field.

A detailed analysis of the challenges

When we talk about integrating vocational education into the mainstream curriculum, the first hurdle is the fragmentation of the curriculum. Traditionally, the school-college teaching structure has divided subjects into rigid compartments: mathematics, science, languages, social sciences, etc. Attempts to incorporate vocational skills within the walls of these compartments fail when both teachers and parents consider it as an 'additional subject' and not an integral

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part of the overall education. Many teachers reported that the branches of advanced electronics and basic mechanics are dependent on completely separate laboratories and schedules, making it impossible to prepare timetables and share resources. As a result, vocational training remains a side-track learning activity, not a life skill (Aithal & Aithal, 2020).

The second major challenge is the lack of training and number of teachers. Vocational subject specialists are not as comfortable in schools from nursery to secondary as teachers of academic subjects. Trainers not only have to master technical knowledge, but also have to maintain complex equipment in the laboratory and provide students with a real industry environment experience. But this provision is almost negligible in our teacher training institutes. Most trainees do only one or two weeks of workshops, after which they are entrusted with the responsibility of completing the syllabus. In this process, trainers do not get the opportunity to teach modern pedagogical methods and practical teaching skills, due to which they themselves are confused about how to teach technical skills effectively in the classroom (Sharma et al., 2024).

At another level, social perceptions are the biggest obstacle in the way of appreciation of vocational education. Often parents see vocational courses as a 'second option' and limit it only to immediate employment. Responses from places like Amar Colony clearly showed that parents wanted their son or daughter to find work immediately in tailoring, beauty therapy or cooking to meet household expenses. These limited views have led to children themselves not valuing these courses, even though NEP 2020 aims to update them to the needs of the 21st century market (Pathak, 2020; Vats & Malik, 2024).

The growing urban–rural divide is also a major problem. While public–private partnerships and corporate-sponsored training centers are growing in metros, resources do not reach as far as rural and urban settlements. In interviews, several rural education providers reported that while simulation-based learning is possible in the classroom, computerized training is denied to students at the other end due to the lack of adequate electricity, internet or modern equipment. As a result, they lose out in the competition to find jobs (Gadling & Bhosale, 2022).

Inadequate resource allocation also aggravates this problem. Unless schools secure adequate machinery, raw materials and budget for maintenance, the level of vocational education will not rise above average. Many teachers shared that old equipment breaks down frequently, reducing training time and demotivating children. In NEP 2020, the Ministry of Education and Skill Development has allocated some funds in this direction, but delays in ground

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implementation and lack of transparency have weakened the impact (Sharma et al., 2024; Vats & Malik, 2024).

Finally, there is also a burning need to improve the curriculum assessment mechanism. While academic subjects have quarterly tests, semester exams and annual board exams, the measurement of vocational skills is often limited to individual projects or practicals. It is not logical that there is no consistent standard to convert a student's marks into formal marks after doing some household electrical repairs. NEP 2020 has talked about multi-faceted assessment, but the prerequisite for its implementation is to train teachers in its design and execution, which is currently incomplete (Singh & Gunasekaran, 2021).

All these challenges are interconnected. Curriculum fragmentation increases the teaching-learning crisis, social perceptions affect resource allocation, and assessment flaws weaken the credibility of the entire system. NEP 2020 has highlighted all these points and suggested modern solutions, but their implementation on the ground will be possible only when policy-making is not just a paper framework but is linked by taking capital, skills and commitment to the ground training centers.

Discussion of positive trends and prospects

NEP 2020 has presented a framework for mainstreaming vocational education, with a continued focus on skill development and intensive collaboration between academia and industry. The plan to introduce students to various vocational subjects from Class 6 itself has acknowledged the importance of early exposure. This was also benefited by the girl students of Amar Colony, who started receiving early training in cosmetology and culinary arts. They themselves said that when they were assigned simple industry-related projects in Class 10, their enthusiasm for learning remained intact, and they started to learn the subjects more effectively. This also boosted their morale (primary interview, 2025).

The development of competency-based curriculum in educational institutions is important in this context. The modular structure divided classes into smaller but industry-oriented units, allowing students to enter and exit as per their interests. For example, a student who completed just two months of tailoring course immediately began employment in a partially self-reliant format at a local boutique and later took the first steps towards business by upgrading her skills on a larger scale. Such outcomes are proving to be appropriate preparations for dealing with the complexities of the modern job market (Singh & Gunasekaran, 2021).

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Public–private partnerships have contributed to resourcing training centres and increasing practical experience. A school in Delhi, in collaboration with a leading automobile company, introduced the 'Industry in a Classroom' model, where secondary level students got an opportunity to learn in a workshop with real vehicle parts. This helped students not only gain mechanical knowledge but also develop an understanding of teamwork and project management. This initiative made it clear how comprehensive and practical the quality of learning becomes when academia and industry join hands (Aithal & Aithal, 2020).

The NEP 2020 has paved the way for increased coordination by suggesting a National Committee for Integration of Vocational Education (NCIVE). This committee aims to establish an 'information-extension mechanism' between schools, colleges, training institutes and industries. While the concrete effects of this mechanism are yet to emerge, many teachers reported that state-level workshops have finally brought consistency in training content and bringing in industry experts as resource persons has significantly improved the educational quality (Vats & Malik, 2024).

The use of technological innovations is also empowering teaching-training. Digitalized laboratories and virtual reality-based simulations have helped reach rural and urban settlements where it was difficult to physically bring modern equipment. For example, an NGO engaged students from remote areas in a Hadron cloud-based workshop where they received training on electrical repairs with the help of a web-virtual trainer. Students reported that this not only helped them understand technical concepts but also boosted their confidence (Gadling & Bhosale, 2022).

These initiatives have led to a new thinking, where flexible academic paths and industry-tailored training complement each other, increasing the ability of students to make job-path decisions and strengthening the sense of respect for vocational education in society.

When these positive trends are combined with the challenges and forward thinking, it is clear that the framework of NEP 2020, if implemented with sustained investment on the ground, trainer development and social awareness campaigns, can make vocational education a real, prestigious option in India.

Policy Implications and Recommendations

As we witness the positive trends of NEP 2020 and the effectiveness of local innovations, it is evident that it is now necessary to firmly establish these initiatives on a structural and long-

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term footing. To make the curriculum fully integrated, it is necessary to move away from the mindset of "adding subjects" to integrating them into the entire pedagogical framework. Before teachers shift to separate laboratories or focus on creating windows in the timetable, policymakers must ensure that the curriculum itself is designed to have common threads across broad topics, such as life skills, problem solving, teamwork, and projects aligned to industry standards. Such modular courses will give students the freedom to take additional units and return to them according to their interest and proficiency, thereby helping to maintain continuity of learning (Aithal & Aithal, 2020).

To equip the teacher-trainer community with both expertise and confidence, institutions need to focus on long-term training programs. One-two week workshops are not enough; rather collaborative programs with industry offering diploma or certificate courses should give trainers an opportunity to learn in a real industry environment. This will not only develop technical skills but will also boost teachers' self-esteem and enable them to provide better guidance in the classroom (Sharma et al., 2024).

To bring about a uniform level of infrastructure across the country, public-private partnerships should be seen not just as a way to start projects but also as a way to establish sustainable models. For instance, the government can encourage local industries to set up workshops in nearby schools by giving them tax breaks or subsidies on equipment and assure regular machinery upgrades. Thus, digital labs and virtual reality-based training centers in rural and urban slums will serve as cost-effective models, which have already seen success in some NGO models (Gadling & Bhosale, 2022).

To further strengthen industry-academia relationships, internships should not be limited to just internships but partnerships like the "Industry in a Classroom" model should be incorporated as regular events in the academic calendar.

Initial results with an automobile company in the U.S. have been encouraging, but this needs to be expanded to healthcare, IT, fashion and services sectors to cover all interest areas. Such partnerships enhance the quality of learning and also give students the confidence to take on real challenges (Aithal & Aithal, 2020).

Changing social perceptions is as difficult as it is crucial. This requires extensive awareness campaigns at both the state and central levels, including stories of successful alumni, special events in local media, and parent–teacher seminars. When a family sees how skills acquired through vocational education have transformed their life circumstances, such as a partially

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disabled student's career in an MNC, social acceptance will increase and the feeling of 'second choices' will disappear (Pathak, 2020; primary interview, 2025).

Finally, the assessment mechanism also needs to be transformed into a system that goes beyond just giving marks on a board. Following the multi-faceted assessment vision of NEP 2020, project-based assessment, portfolio assessment and peer assessment should be incorporated so that students not only demonstrate technical proficiency but also develop self-introspection and partnership skills. This shift will require training instructors in new assessment methods first so that they can understand student progress under a broader yardstick during reviews (Singh & Gunasekaran, 2021).

Conclusion

The effort to mainstream vocational education seen in the ground-breaking work of NEP 2020 is no longer limited to a policy aspiration but is being reflected in laboratories spread across the streets of Delhi to remote villages. While the old segmentation of the curriculum and social bias have often created obstacles, early experiences, competency-based curriculum and innovative public–private partnerships are proving to be the pillars on which the holistic education of the future can be built.

It must be remembered that policy proposals do not bring change by themselves; They need training, resources, social acceptance and continuous evaluation to flourish on the ground. Unless all these elements come together, the dream of NEP 2020 will not take shape. But some inspiring stories starting from Amar Colony in Delhi to every corner of the country are proof that the right guidance, engagement and commitment can together open the doors to economic and social mobility.

The aim of this research is to believe that vocational education is not just a means to jobs, but a core of self-reliance, self-esteem and lifelong learning. If we implement policies by connecting them to ground needs, then in the coming decades, the youth of India will not only be skilled, but they will also become the harbingers of social and economic change.

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