

NEP2020: Challenges And Opportunities In General Education With Vocational Education In Schools

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ABSTRACT

The research delves into the alignment of vocational development programs with the broader scope of general education, by the directives outlined in the National Education Policy 2020 (NEP2020). It seeks to compare the integration of vocational education under previous policies with that of NEP2020, shedding light on any disparities and advancements. Additionally, the study explores the hurdles impeding the incorporation of vocational education into the general education framework, identifying both challenges and potential opportunities within this integrated approach. NEP2020 prioritizes pre-vocational education from classes 6 to 8 and vocational education from classes 9 to 12, operating within the National Skills Qualification Framework and awarding certificates at each level. Notably, NEP2020 includes provisions for both vocational and general education, fostering vertical and horizontal academic mobility. Lastly, the research evaluates the ongoing implementation progress of NEP2020, with a specific emphasis on amalgamating general and vocational education, emphasizing the imperative for meticulously crafted action plans to effectively tackle infrastructure and vocational education obstacles.

Keyword: NEP2020, Vocational Education, General Education, NSQF

Introduction

According to AICTE "Vocational education or Vocational Education and Training (VET), also called Career and Technical Education (CTE), prepares learners for jobs that are based in manual or practical activities, traditionally non-academic and related to a specific trade, occupation or vocation, hence the term, in which the learner participates. It is sometimes referred to as technical education, as the learner directly develops expertise in a particular group of techniques or technology". According to Toppo (2023), The traditional Indian education system has primarily focused on textbook knowledge, with less emphasis on developing vocational knowledge and practical skills. People in society are now more inclined than ever to let their kids attend technical and vocational schools. The Skilled India initiatives need to focus and develop more entrepreneurship skills amongst the workforce to ensure more job generation in the country. That skilled and knowledgeable workforce can lead to better earning capacity curb the problems arising out of poverty, and illiteracy and elevate nation-building. The tertiary level of vocational education and occupations are closely related (Horai et al., 2021). According to NA (2021) Establishing a future vocational education system is necessary to lead and prepare for the future. As a result, researchers and policymakers in the field of vocational education ought to plan and evaluate the upcoming regulations and systems for vocational education.

The "industry in a classroom" approach incorporates practical experience into the labs and workshops. Under the "applied learning" approach, students are involved in managing and operating campus-based businesses, including restaurants, delis, retail stores, travel agencies, optometrists, and so forth (VARAPRASAD et al., 2021). Kaushik (2014) mentioned that In India, vocational training has only been successful in industrial training institutes and engineering trades. So, for vocational education to play an effective role in the changing national context and for India to reap the benefits of technical fields, there is an urgent need to redefine the

critical components of vocational education and training to make them flexible, contemporary, relevant, inclusive, and creative. According to UNESCO (2016), TVET education consists of general education, science, and technology-related courses that are closely linked to gaining knowledge, comprehension, and practical skills applicable to a range of spheres of life and the economy. Vocational education is becoming increasingly important today because it can provide the right knowledge and skills to youth, ensuring maximum skill development and, as a result, economic and social development in the country (Bhatta and Bharali, 2024).

Background of Vocational Education

Throughout Indian education history, one aspect that has consistently been present is the emphasis placed on vocational education within the educational system. The Woods Despatch understood the need for both academic knowledge and practical skills even under British rule. Later commissions and committees carried out this priority, chief among them the Indian Education Commission of 1980, which advocated for the introduction of practical subjects at the secondary level. The need for varied secondary courses that would prepare students for primary industries and commerce was highlighted even as early as the 1900s by the Hartog Review and the Sapru Enquiry. Additionally, the Wood-Abbot Advisory Committee of 1936 suggested that diploma programs in technical education be added, as well as the opening of polytechnics (Wood-Abbott Commission, 1936). In addition to this, it concentrated on getting rid of the two processes of theoretical learning and hands-on work. To end the prejudice against manual and intellectual labor, the Zakir Hussain Committee suggested a craft-centered approach to organizing education (Wardha Plan, 1937). The dualistic nature of academic and technical education at the school level was also argued for in the 1944 Sargent Report. Additionally, a maximum lifespan for skill development would be highlighted by this system. Education commissions were established in the post-colonial era of independence to reform the system. The 1948 University Education Commission recommended vocational training in commerce, technology, and agriculture, among other areas. Education became a priority at all levels in rural areas, especially as disciplines like agriculture were given more weight at the national level to inform national economic programming (Radhakrishna Commission, 1948). The Secondary Education Commission of 1952–1953, which supported the creation of multipurpose schools, stated that students ought to be exposed to a variety of careers (Mudaliar Commission, 1952). The National Education Commission of 1964–1966 supported the recommendation in the above line and proposed expanding and stepping up the availability of vocational education opportunities in middle and secondary schools (Kothari Commission, 1964). Furthermore, by generalizing vocational education courses in general education institutions, the 1968 National Policy on Education greatly enhanced vocational instruction (NEP, 1968). The significance of vocational education in creating a strong system of work ethics, enhancing employability, and assisting in the connection between the supply and demand of skilled human capital was further emphasized by subsequent policies in 1986 and 2009. With the National Vocational Qualification Framework, which mandated competency-based credentials and certifications based on national occupational standards, the National Skill Development Policy of 2009 went one step further to harmonize the vocational fields. "The National Vocational Education Qualification Framework," which was implemented by the central government, offers a dependable and uniform framework for directing and bolstering the skill development reforms. The framework encompasses all forms of education, including those offered by higher education providers, schools, vocational schools, and industrial training centers. It's a sound system based on strong industry norms and practices. In light of the goal of the National Skill Development Policy 2015, which is to integrate the acquisition of skills with formal education, the framework aims to integrate skills from grade nine onwards in at least 25% of schools over the next five years into vocational training classes that are directly linked to local economies. Furthermore, the framework aims to provide skills for alternative Sustainable Livelihood careers to children and youth who are dropping out of school or higher education at any level, to appropriately and uniquely meet their needs. The designers of NEP 2020 have concentrated on rethinking vocational education. Typically, fewer than 5% of workers between the ages of 19 and 24 possess formal vocational education; however, in developed nations like the United States, Germany, and South Korea, the percentage is significantly higher National Educational Policy, 2020. Rapid expansion throughout India is required to close the coverage gap and give people access to high-quality vocational education quickly. As a result, the NEP contains provisions that make it possible to incorporate vocational education into the system of formal education. To fulfill the enabling provisions, it also offers smooth vertical and horizontal student mobility within the NSQF in addition to the flexibility of integrating vocational students into mainstream space. "Alignment of Indian standards with internationally recognized classifications of other nations" is emphasized. By 2025, the goal is for at least 50% of students enrolled in K–12 and postsecondary education programs to have experienced vocational education. NEP 2020 offers several recommendations that can be implemented to improve vocational education in several clearly stated areas of concentration. Regarding the first, access, the system suggests exposing students to a variety of careers as early as the sixth grade. Children will learn about the working world and the various careers that are available to them through the Samagra Shiksha Abhiyan program. Regarding "equity," NEP 2020 said that all students are "exposed to at least one vocational skill and all students acquire at least one vocational skill" by integrating vocational education into general education courses. Furthermore, the third component, "adaptability and flexibility" called for updating curricula in vocational education "on an ongoing basis to ensure that it is consistent with changes in industry and global trends." The NCERT is allowed to provide guidelines, handbooks, and textbooks for vocational

education as well as incorporate them into the National Curriculum Framework to mainstream vocational education. For integration to be successful, "community and industry partnerships" are also required. To do this, cooperation with ITIs, polytechnics, regional industries, craftspeople, and other members is also necessary. According to National Education Policy 2020, assessments and evaluations in vocational education should be competency-based, and the NCERT will be given the necessary guidelines to evaluate students enrolled in vocational education. A variety of training modules, including workshops, seminars, teacher development programs, and digital and online modules, will be implemented as part of the "Professional Development of Vocational Teachers" initiative. Under the Planning and Development Division, the NCERT will work with the university departments of education to develop teacher training manuals and modules. Vocational education will be incorporated into regular education in schools and higher education establishments during the next ten years. By 2025, 50% of students will have participated in a vocational education program. In addition, a National Higher Education Qualification Framework will be developed to work in tandem with the NSQF, allowing higher education institutions to incorporate vocational education without interfering with one another. The reach of vocational education courses is being expanded by the opening up of Open Vocational Education programs through open and remote learning modes. A comprehensive NSQF would be created for a range of occupations. The reintegration of dropouts into the system might facilitate the Recognition of Prior Learning strategies, which include general education to vocational education course transfers. It is suggested that the NSQF be expanded to include all occupational categories and sectors. The National Skills Qualification Framework, an RPL mechanism, ought to serve as the cornerstone for reintegrating dropouts and facilitating the transition from general to vocational education. In a variety of professional domains, it is imperative to document and promote good work practices along with the knowledge that these practices generate. The most recent monitoring program was reauthorized to develop Lok Vidya. One of the main priorities is to set up PSSCIVE. Encouraging people, funding, scientific infrastructure, and technological contributions are necessary for a large-scale expansion of vocational education.

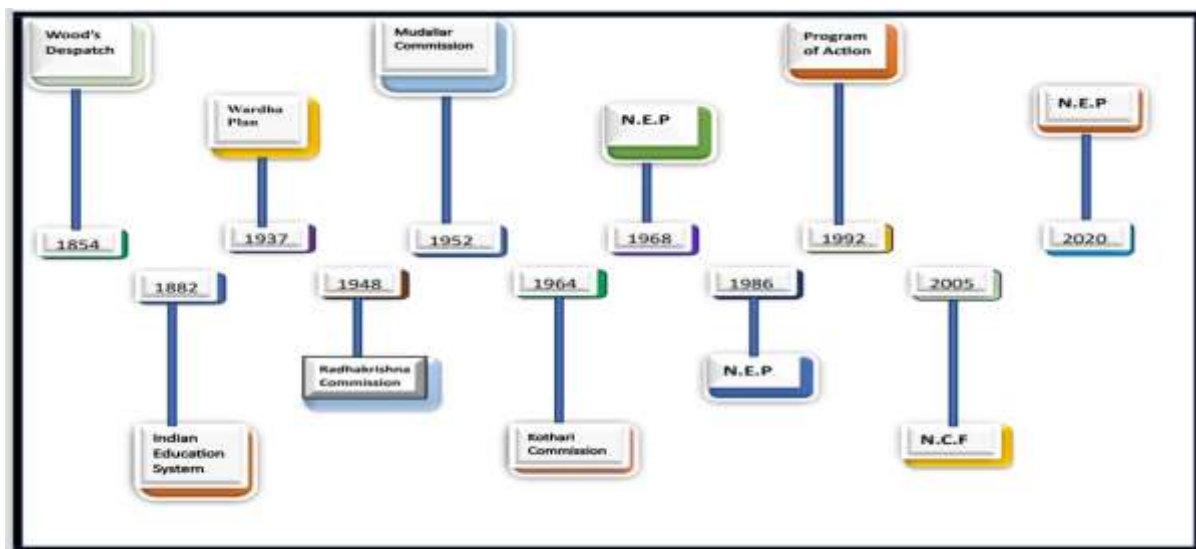


Fig 1.1 implementation of Vocational Education in policy

Objective:

1. To study the level of integration of vocational development Programs achieved under NSQF.
2. To study the difference between the previous education policy and NEP2020 in integrating vocational education.
3. To study the current status of integration of general education and vocational education in implementing the National Education Policy 2020.

Evolution of the Skill Development System

The evolution of the skill development system in India is marked by numerous initiatives and reforms aimed at enhancing vocational education and training to meet the dynamic demands of the labor market. This evolution reflects a continuous effort to integrate vocational skills into mainstream education, promote industry-specific training, and establish robust frameworks and policies to guide these efforts. The journey began with the establishment of the National Council for Vocational Training (NCVT) in 1956. NCVT was created to develop curricula, uphold quality standards, set affiliation criteria, and award affiliations to vocational institutions. This was a foundational step in formalizing vocational education and ensuring standardized training across the country. In 1961, the Apprenticeship Act was enacted to set guidelines and controls for apprentice training. This act aimed to create a structured apprenticeship system, ensuring that trainees received practical and theoretical training aligned with industry needs, thereby enhancing their

employability. The vocationalization of education in 1988 introduced vocational training in higher secondary education, allowing students to pursue vocational courses alongside academic subjects. This initiative aimed to provide students with practical skills and knowledge, preparing them for various career opportunities upon graduation. A significant milestone was the establishment of the National Skill Development Corporation (NSDC) in 2008. NSDC's goal was to stimulate the creation of large, high-quality for-profit vocational institutions. It focused on identifying skill gaps and facilitating the development of training programs across 24 high-priority sectors, as highlighted in the Human Resource Requirement Reports for 2013-2017 and 2017-2022. The first National Policy on Skill Development (NPSD) in 2009 outlined the framework, goals, and outcomes for the nation's skill development initiatives. This policy aimed to create a cohesive environment for skilling activities and set the stage for future reforms and initiatives. In 2011, the Vocationalization of Higher Secondary Education (VHSE) initiative was launched to integrate vocational education into the higher secondary curriculum. This initiative provided multiple entry and exit points, vertical mobility, and qualification interchangeability, making vocational education more flexible and accessible. The establishment of the National Skill Development Agency (NSDA) and the introduction of the National Skill Qualification Framework (NSQF) in 2013 were pivotal in policy research and quality control. The NSQF organized qualifications based on skill, knowledge, and aptitude levels, guiding states in creating qualifications aligned with national standards. In 2014, the Department of Skill Development was notified, eventually becoming the Ministry of Skill Development & Entrepreneurship. This ministry spearheaded the Skill India program, benefiting over 10 million youth annually by providing skills for better employment opportunities. Sector Skill Councils (SSCs) were established in 2015 to oversee sector-specific skill training and certification. Additionally, the National Skill Development Mission was launched to coordinate and oversee skilling activities across India, with an ambitious goal of educating over 400 million individuals by 2022. The National Policy on Skill Development & Entrepreneurship 2015 aimed to align skilling activities with demand centers and create a national framework for standardized skilling practices. This policy reinforced the importance of linking skills with employment opportunities. In 2018, the National Council for Vocational Education and Training (NCVT) was established as a national regulator for vocational training. By combining the NCVT and NSDA, NCVET aimed to streamline vocational training oversight and ensure quality and consistency. The New National Education Policy (NEP) 2020 emphasized integrating vocational education into mainstream education through the National Higher Education Qualification Framework (NHEQF), coordinated with the NSQF. NEP 2020 aimed to provide vocational skill exposure from middle and secondary grades through internships with local artisans, craftsmen, and blue-collar professionals. These initiatives and reforms highlight India's commitment to evolving its skill development system to meet the changing needs of the economy and empower its youth with relevant skills for the future.

Table 1.1 Evolution of the Skill Development System in India

Year	Initiative	Objective
1956	National Council for Vocational Training (NCVT)	creating curricula, upholding standards of quality, establishing affiliation criteria, and awarding affiliation.
1961	Apprenticeship Act	establishes guidelines and controls for apprentice training
1988	Vocationalization of education in India	two years of higher secondary education that includes vocational training in addition to other subjects.
2008	National Skill Development Corporation (NSDC)	intends to stimulate the establishment of sizable, high-caliber, for-profit vocational schools to advance skill development. The Human Resource Requirement Reports illustrate how incremental skill requirements are distributed geographically and sectorally across 24 high-priority sectors between 2013–17 and 2017–22.
2009	The first National Policy on Skill Development (NPSD)	The NPSD outlined the overall framework, goals, and outcomes for the nation's skilling environment.
2011	Vocationalization of Higher Secondary Education (VHSE)	to provide elective vocational education in addition to academic subjects in schools. Learning opportunities with multiple entry and exit points as well as vertical mobility and qualification interchangeability.
2013	The National Skill Development Agency (NSDA)	Policy research body and quality control.
2013	National Skill Qualification Framework (NSQF)	arranges all qualifications based on a range of aptitude, skill, and knowledge levels. Helps States create qualifications that are in line with the NSQF by providing guidance and support.

2014	The Department of Skill Development	In November 2014, the Ministry of Sports & Youth Affairs notified DSD, which subsequently became the Ministry of Skill Development & Entrepreneurship (9.11.2014). Over 10 million young people participate in and gain from the Ministry's Skill India program each year, which aims to give them the skills they need for better employment opportunities.
2015	Sector Skill Councils (SSCs)	Sector-specific leaders in the industry oversee SSCs. In addition to conducting expert training and testing candidates, they also develop competency frameworks and occupational standards.
2015	National Skill Development Mission	The goal is to bring skilling activities from all over India together, coordinate them, carry them out, and oversee them. By 2022, intends to provide more than 400 million Indians with various forms of education.
2015	Vocationalization of Secondary and Higher Secondary Education	Vocational education will be offered starting in Class IX, or secondary school, which includes the 9th and 10th grades.
2015	National Policy on Skill Development & Entrepreneurship, 2015	Its objectives are to link skilling with demand centers, provide a national framework for all skilling activities, and align them with common standards.
2018	National Council for Vocational Education and Training (NCVT)	a national regulator tasked with overseeing both short- and long-term vocational training. By combining the pre-existing NCVT and NSDA, NCVET was established.
2018	National Skill Qualification Committee (NSQC) is anchored in National Skill Development Agency (NSDA)	The NSQC approves qualifications for NSQF alignment and accreditation norms, prescribes guidelines for disadvantaged groups, reviews inter-agency disputes, and aligns NSQF with international qualification frameworks.
2020	New National Education Policy	The NEP 2020 aims to gradually integrate vocational education into mainstream education through the development of a National Higher Education Qualification Framework (NHEQF), which will be coordinated with the National Skills Qualification Framework (NSQF) to facilitate mobility between streams. The policy aims to provide vocational skill exposure starting in middle and secondary grades through internships with indigenous artisans, craftsmen, and blue-collar professionals.

Vocational Education in NEP2020

As part of the 2020 National Education Policy, aims to eliminate a caste-like system in vocational education where they are merged into general education in all institutions. Vocationalisation should begin in middle and secondary school with the start of vocational elements even from class IV, ultimately having a high standard of vocational education integrated within higher education. It aims at ensuring that every child not only attains competency in at least one of the vocational skills but should also have exposure to other vocations so that he/she finally makes an intelligent choice about his/her career with job market demands and leads a satisfactory life. The policy aims for at least 50% of learners in the school and higher education system to have exposure to vocational education by 2025, aligning with Sustainable Development Goal 4.4, and leveraging India's demographic dividend. To achieve this objective, clear targets and timelines will be set about the number of students in vocational education (as a component of GER); along with action plans. Vocational education will start integrating into all secondary schools, over the next 10 years, and encourage partnerships with Industrial Training Institutes (ITIs), polytechnics, and local industries. The integration involves the setting up of skill labs where established by the hub-and-spoke model. Thus, vocational educations are thought to be offered by Higher Education Institutions (HEIs), whether independently or by HEIs collaborating with industry and non-governmental organizations (NGOs). The current Bachelor of Vocation. Students of vocational courses will also be able to take up those courses if they are enrolled in other Bachelor's degree programs, such as students of 4-year multidisciplinary courses. HEIs can offer short-term certificate courses covering a plethora of skills, including soft skills. NERIS submitted, "Under NEP2020's LOK VIDYA program, locals from nearby areas can get enrolled for training in various activities like gardening, pottery, etc with local experts. This will help achieve the purpose set in NEP2020 (Para16.5). This focus of initiative should be the promotion of skill and knowledge on the subject. This calls for the integration of 'Lok Vidya,' basic vocational knowledge developed in India, in vocational education programs and provides a direction for providing vocational courses through Open and Distance Learning (ODL) mode. The Ministry of Human Resource

Development (MHRD) will make provision for this by establishing a National Committee for the Integration of Vocational Education (NCIVE). A new expert committee of leading voices in vocational education, convened as a national entity, representing multiple ministries and industries across the country will provide oversight for phased integration. Vocational education is described as education that focuses on occupation and employment (Dey and Srivastava, 2022). Institutions that are the pioneers in vocational education should be further encouraged to innovate and replicate successful models and practices developed by them through NCIVE for a wider spread of vocational education. As a further indication, the National Skills Qualifications Framework will specify competencies for each discipline, vocation, and profession. This framework, which is being aligned with Indian standards to the International Standard Classification of Occupations (ISCO) maintained by the International Labour Organization, shall serve as a basis for Recognition of Prior Learning. This method helps to reintegrate school dropouts into the formal educational route, by situating what they can do about the French frame. It will also allow greater flexibility between "general" and applied (vocational) higher education. Vocational education will be included in mainstream education as per NEP 2020 and as a part of this students can now opt for vocational courses alongside their regular academic streams.

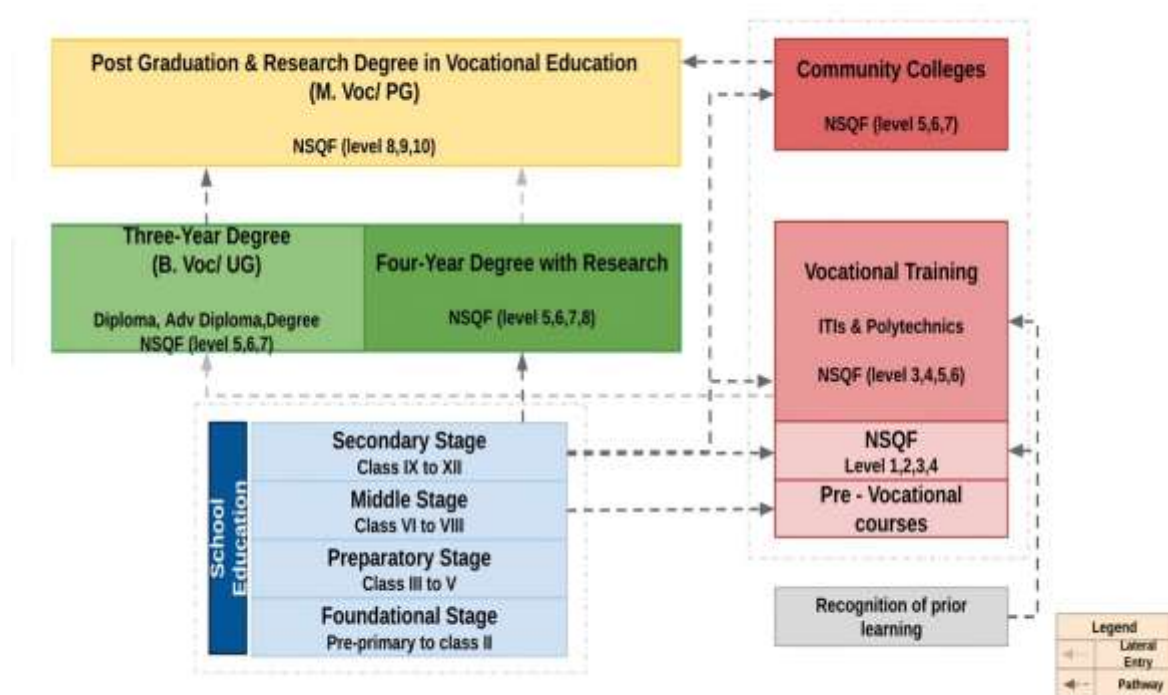


Fig 1.2 Vocational Education Roadmap

Source: Re-imagining Vocational Education: The NEP-2020 Perspective

Comparing General and Vocational Education

General education focuses on psychological theories, providing general training with standardized content derived from traditional selections. It does not emphasize special interests or aptitudes and admits students based on their ability to meet standardized academic requirements. This type of education primarily serves youth and involves little repetitive training. Instructors are qualified based on their knowledge of content, and the standards are academic. The objectives include fostering appreciation and developing trained faculties through illustrations, information, and exercises. The working conditions are practically common to all courses, aiming to offer general opportunities. Leadership is general, group characteristics are ignored, and administration is easy, simple and rigid.

In contrast, vocational education is based on habit psychology, offering specific training with widely diversified and specific content sourced from the experiences of competent workers. It regards special interests and capitalizes on special aptitudes, admitting students based on their ability to benefit from the instruction. Vocational education serves all age groups and involves significant repetitive training. Instructors need specific occupational experience or certification, and the standards are occupational. The objectives focus on meeting the demands of a specific occupation through on-the-job training. Working conditions vary for each course, designed to meet specific needs. Leadership is specific to occupations, group characteristics are considered, and administration is difficult, complex, and elastic.

Table 1.2 Comparing General and Vocational Education

Factors	General Education	Vocational Education
Basic theory	Psychology	Habit psychology
Form of training	General training	Specific training
Character of content	Standardized	Widely diversified specific content
Origin of content	Traditional selection	Experiences of competent workers
Special interest	Not regarded	Regarded
Special aptitudes	Not capitalized	Capitalized
Basis of admission	Ability to meet standardized academic requirements	Ability to profit by the instruction
Scope of service	Limited-chiefly youth	Serve all groups, all ages
Repetitive training	Little	Much
Qualification of instructors	Knowledge content	Specific occupational experience/certification
Standards	Academic	Occupational
Objectives	Appreciation and trained faculties	Ability to meet demands of a specified occupation
Method of training	Illustrations, Information, exercises	On the job
Working conditions	Practically common to all courses	Different for each course
Basis of operation	To offer general opportunity	To meet specific needs
Leadership	General	In specific occupations
Group characteristics	Ignored	Considered
Administration	Easy, simple, rigid	Difficult, complex, elastic

Source: Prosser & Ouigley, (1950). Vocational Education in a Democracy. Chicago: American Technical Society, p.233.

NEP2020: Integration of Vocational Education with School Education

NEP 2020 emphasizes integrating both general education and vocational education; to improve the quality of education at all levels. Also, inclusion of Equity and Inclusion measures at every stage for their implementation. NEP, rooted in the fundamental principles of access, equity, quality, and affordability with accountability, envisions the transformation of India by making it a knowledge superpower and global knowledge society. Contrasted with general education, vocational education is skill-oriented and trains both the head and the hands (Oranu,2009).

A national credit accumulation and transfer system must be set up and formalized to realize the vision outlined in NEP 2020, which seeks to make education more holistic, flexible, high quality, and integrated with academic education and vocational education including relevant professional components like field experiences, skills, etc. It is a key feature of the system to facilitate the linkage of general and vocational education and enable the free movement of candidates from one set or sector to another. In doing so it is hoped that the formalization of such a credit system would establish an integrated and flexible educational structure that best meets the demands of learners in their movement into and out of academic studies, guiding these transitions between academic and vocational education. Vocational education in India is a form of education that aims to provide learners with practical skills and knowledge in a particular field, trade, or profession. (Negi and Bhakuni 2023).

**Fig 1.3** Interface between the Education System & Industry

Source: Re-imagining Vocational Education: The NEP-2020 Perspective

Vocational Education under the National Skills Qualifications Framework (NSQF)

Naveen (2022) found that integration of the National Skills Qualifications Framework (NSQF) with education and employment sectors, coupled with alignment to international standards, provides a strong basis for skill acknowledgment and reintegration of dropouts. According to UGC, the National Skills Qualifications Framework (NSQF) will be detailed further for each discipline vocation and profession to synchronize it with General Education. India's incorporation of vocational education from secondary to higher levels aims to meet workforce demands and promote inclusivity in science and technology progressions. It is a framework that has been endorsed by the Cabinet committee and it classifies qualifications according to knowledge, skills, and abilities within each significance level. This focuses on whether the learner gets the competency or not regardless of whether it comes in part informal, formal, or blended and requires passing a level 1 to Level 10. In India, the NSQF was announced on 27th December 2013 and is to replace all the earlier frameworks like the National Vocational Educational Qualification Framework (NVEQF) by the Ministry of HRD. The NSQF is tier or level-based with two levels of outcomes, i.e. LODR (Learning Outcome Descriptors) and LOs (Learning Outcomes), based on graded levels from 1 to 10 with 1 being the lowest and 10 being the highest in terms of complexity of Knowledge, Skills and Candidates qualifications at each level. The outcome-based levels provide a reference point for qualifications, which allows comparisons to be made and qualification reviews to be conducted. Levels are determined by the complexity of learning with level 1 being the least complex to level 10 which is the most complex. The framework comprises courses ranging from school level to post-graduation and beyond including short-term vocational courses in a few sectors (NSQF level 1 to 10). NSQF brings about an orderly arrangement of a quality assurance framework for skills and qualifications in different learning pathways to improve the job market in India. Pathak (2020) found that vocational development programs encounter hurdles in developing nations, India's emphasis on NSQF and NHEQF indicates a move towards advanced skill incorporation. NEP 2020 recognizes access and lifelong learning's significance, but necessitates structural enhancements for comprehensive learner growth, fostering skilled human capital mobility.



Fig 1.4 School-level program under National Skills Qualifications Framework



Fig 1.5 College/University level program under National Skills Qualifications Framework

National Skills Qualification Framework (NSQF) defines the different levels of qualifications and minimum education on which it's based. Minimum 8th class passed starting from level 1 The Next Level: To progress to level 2, candidates should have passed a minimum of Class 9th or should be of level-1 completion. Level 3: one must have completed Class 10 or should qualify for Level 2. Likewise, level 4 requires having passed/or holding a level 3 qualification and Level 5 requires passing Class 12th or holding a level 4 qualification. As we move upward, level 6 says you must have a degree or a level 5 qualification, and then level 7 requires an advanced diploma or a level qualification. You need to be at level 8 or above, a graduate, or have a level 7 qualification as a minimum. Level 9 requires graduation and one postgraduate year of study or a level 8 qualification Lastly, by level 10, a Master's degree or level 9 qualification is the minimum necessary.

Table1.3 Course under National Skills Qualifications Framework offered

NSQF Level	International Equivalents	Minimum qualification
Level 1	Certificate	Class 8 th
Level 2	Certificate	Class 9 th or level 1
Level 3	Certificate	Class 10 th or level 2
Level 4	Advance Certificate	Class 11 th or level 3
Level 5	Diploma	Class 12 th or level 4
Level 6	Advanced Diploma	Diploma/level 5
Level 7	Graduate Degree/Bachelors	Advanced Diploma/level 6
Level 8	Post-Graduate Diploma	Graduation/level 7
Level 9	Post-Graduate Degree	Graduation + 1year / level 8
Level 10	Doctorate	Master/ level 9

Need for Vocational Education with General Education

According to the 12th Five-Year Plan (2012-2017), less than 5% of the Indian workforce aged 19-24 received formal vocational education, while countries like the United States (52%), Germany (75%), and South Korea (96%) have higher rates. These statistics highlight the urgent need to expand vocational education in India. One of the primary reasons for the low number of students receiving vocational education is that it has traditionally focused on Grades 11-12 and dropouts in Grades 8 and up. Furthermore, students who completed vocational subjects in Grades 11-12 often lacked clear pathways to further their education. The policy suggests starting vocational education in Grade 6 to ensure students have access to high-quality skills for further education and employment opportunities. Another study found that the youth of the nation should be empowered with formal education, technical and vocational training to meet the industrial requirements as per the global standard and to make this India project successful (Deka et al., 2016).



Graph:1.1 Vocational education status

Importance of Integrating Vocational Education with General Education

The integration of general education and vocational education is highly valued in the National Education Policy 2020 (NEP2020), which signifies a significant shift in the educational landscape of India. It is crucial for several reasons because this integration impacts the individual student as well as the greater socioeconomic environment. Firstly, curricular relevance is increased when vocational training is integrated into the general education framework. Theoretical knowledge is often the focus of traditional training, which does not always translate into the practical skills required in the workplace. Through vocational training, students are provided with practical skills in addition to academic knowledge, making their training broadened and more applicable to real-world situations. This dual approach ensures that students are better equipped for a variety of career paths, increases employability and closes the skills gap that exists in many industries.

Secondly, vocational training promotes a culture of continuous learning and flexibility. The ability to learn and adapt is critical in today's rapidly evolving job market. By exposing students to a variety of skills and real-world problem-solving scenarios, vocational training helps instill these qualities in them. Flexible students not only

have better immediate employment prospects but also develop the resilience needed to cope with future career changes and development.

In addition, the integration of vocational training promotes economic development by producing workers with higher qualifications. Workers with specialized technical skills are in increasing demand as industries change and new sectors emerge. Vocational education helps bridge the gap between supply and demand by aligning educational goals with industry needs. Additionally, it promotes entrepreneurship by giving students the know-how needed to start and grow their businesses, which boosts the economy even more.

By providing opportunities for all students regardless of their socioeconomic background, the integration of vocational education can also address social justice issues. Students from disadvantaged backgrounds often encounter obstacles when looking for good educational and career opportunities. Vocational training programs, particularly those aligned with the National Skills Qualifications Framework (NSQF), can provide these students with viable pathways to employment, thereby promoting inclusion and social mobility.

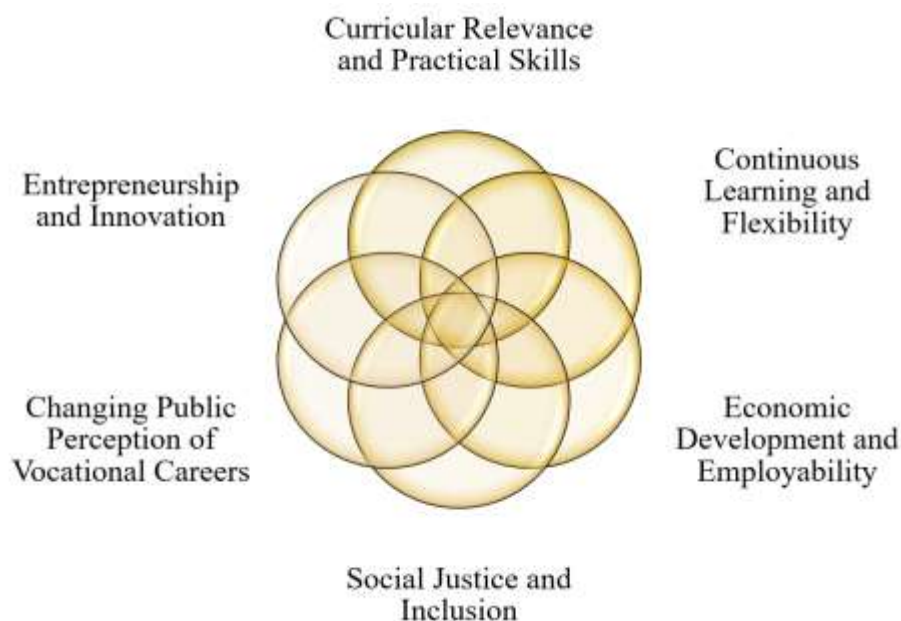


Fig 1.6 Multifaceted Benefits of Integrating Vocational and General Education in NEP2020

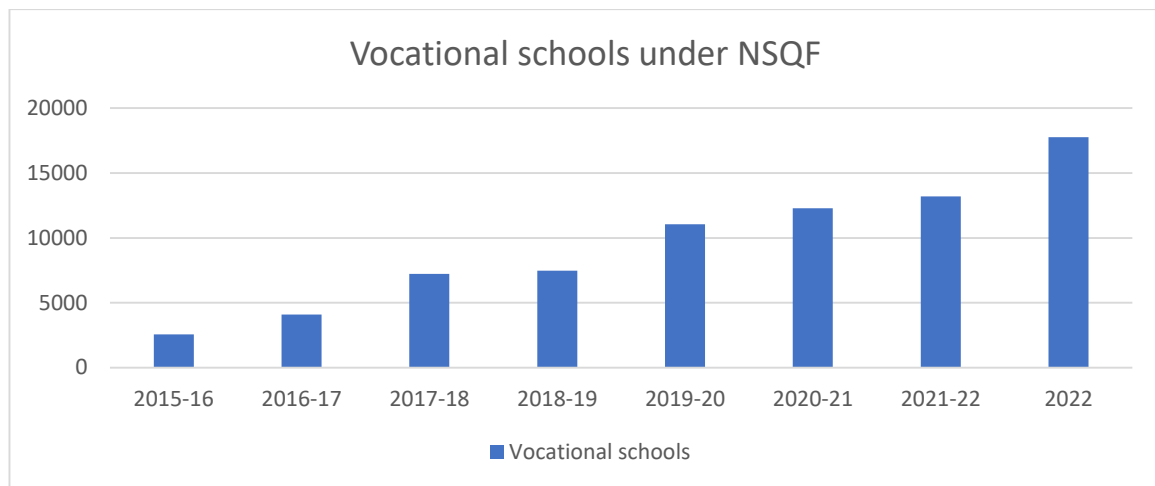
in addition, integrating vocational training into general education helps change public attitudes towards careers in the world of work. Compared to academic training, vocational training has historically been considered less prestigious. NEP2020, on the other hand, aims to highlight the value and importance of vocational training while increasing its status. This change in perspective can lead to a more polite and balanced understanding of different careers and inspire students to choose their careers based on their skills and interests rather than peer pressure.

Findings

1. To study the level of integration of vocational development Programs achieved under NSQF.

Finding

According to the U-DISE+ data, the number of NSQF-compliant vocational training institutions increased over time. For example, as seen in the table below, in the year 2015–16 there were 2550 such schools and the increase in terms of percentage in the subsequent year i.e. 2016–2017 to 4084 schools was very high. Between 2017–18 (7232 schools) and 2018–19 (7471 schools), the growth trend continued. A further uptick was registered in the subsequent academic years when 11038 schools were picked in 2019–20, then 12292 schools were scrutinized in 2020–21, and lastly a total of 13206 schools were monitored during 2021–22. In 2022, 17761 schools were offering the NSQF-funded vocational education. The growth trend demonstrates a great move endeavor to promote the establishment of VET in the education system, reflecting an annual increase that is both well-supported and positive in their integration with the NSQF. Chandrakar and Saxena (2023) found that India's vocational education efforts through the revitalized Samagra Shiksha program demonstrate encouraging outcomes, particularly in empowering women and rural communities. The extension of vocational training to government-aided schools, along with favorable responses from instructors and employers, signifies progress in bridging skill disparities and improving employability across the country.



Graph 1.2 Vocational school under National Skills Qualifications Framework (NSQF)

2. To study the difference between the previous education policy and NEP2020 in integrating vocational education.

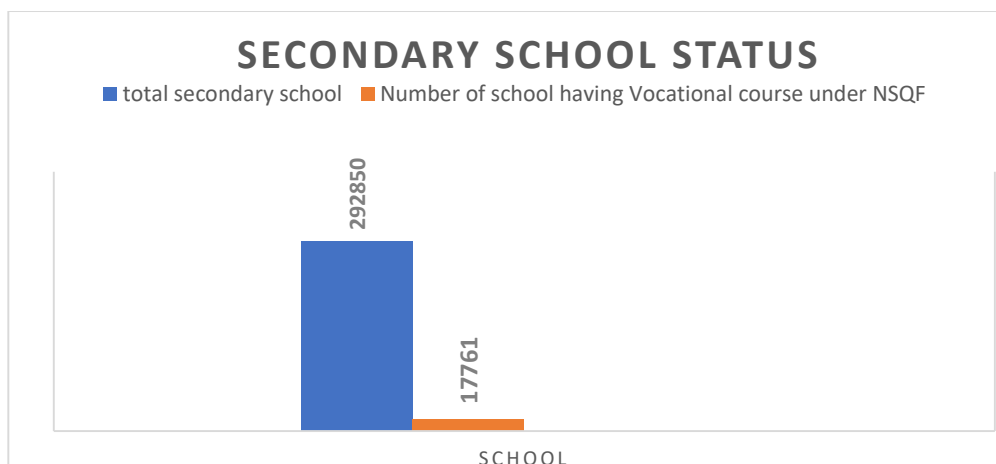
Finding

the NEP 2020 makes some of the most transformational changes in education policies yet. The Bill also makes it compulsory to teach a vocational subject, from class vi to viii, promoting early skills training. It also suggests a "bagless day," 10 days aimed at ensuring stress-free learning and freedom from the burden of textbooks. The policy emphasizes discovery interest and aptitude with which students can enter the world of work. In addition, it brings vocational interest inventories for Students of Grade 8 and skill-based aptitude tests for the students of Grade 10 helping them to make informed decisions about career path. Another initiative under the NEP 2020, is the LOK VIDYA Program which will be introduced for classes 6 to 8 focusing on locally and contextually relevant learning. Working on this project, I have started seeing these initiatives as an exciting departure from old policies and a move towards a more holistic, more realistic approach to education. Parimala (2023) found that NEP 2020 emphasizes vital aspects overlooked in previous policies, including universalizing education from early childhood to secondary level by 2030, foundational skill development by 2025, ensuring 100% enrollment, tackling out-of-school children, preparing teachers for assessment reforms, promoting inclusive education, enhancing skill proficiency, and establishing uniform learning standards across public and private schools.

3. To study the current status of integration of general education and vocational education in implementing the National Education Policy 2020.

Finding

Out of the 292,097 secondary schools in India, only 17,761 provide vocational education by the National Skills Qualifications Framework. The rate at which secondary schools offer vocational education is comparably lower (only 7%). The data indicates a significant gap between the total number of high schools and the number that are delivering vocational education. That suggests that to increase the accessibility and coverage of vocational education programs throughout more high schools, an overall integration and legitimization of vocational skills in the educational landscape may be required.



Graph1.3 Secondary school status

Challenges in Vocational Education



Fig 1.7 Challenges in Vocational Education

- **Infrastructure and Resource Limitations**

It is, therefore, a hard nut to crack to implement vocational education in the general education setting of NEP2020 without proper infrastructure and resource backup. Vocational training in Schools and institutions is not only devoid of specialized workshops, tools, and materials required for training. Further, there is a lack of qualified teachers who can teach formal vocational courses which impedes the modal integration of vocational education with a general educational stream. Kumar (2015) mentioned that A collaborative ecosystem involving various stakeholders, including the government, corporate sector, social business, and non-profit organizations, is necessary to address the issues of capacity, quality, and utilization in vocational education. Improving vocational education to increase employability is a complicated topic that involves industry participation, education system, economic and labour market reform, demographic trends, and upward mobility for social groups that are historically underrepresented

- **Curriculum Design and Flexibility**

This is a contorted process by which it creates an educational program that confines vocational training with general education. The NEP2020 is intended to bring out a fun, integrated approach to learning instead of students just graduating with marks and degrees and mainly aims towards making education more holistic and multidisciplinary but bringing vocational education in line with academic subjects as well as ensuring their rigorousness and relevance which appears very challenging. Sustaining such flexibility in pathways that allow students to migrate to vocational or academic streams without disruption is a complex task as it requires significant planning and frequent alterations of the curriculum.

- **Teacher Training and Professional Development**

The biggest hurdle in the way of mainstreaming vocational education is teachers who have not been adequately trained. The vast majority of the time, educators simply do not have the credentials or skillsets necessary to teach these subjects well. While this is imperative, it is far from sufficient, and much more needs to be done in the area of professional development programs and ongoing training. The CFIs firmly believe that teachers have to be adequately prepared to deliver subject matter of both academic and vocational and the implementation of NEP2020 would demand this so that knowledge outcomes are achieved.

- **Societal Perception and Acceptance**

In India, vocational education has been common with a perception that it falls below academic studies in prestige. This societal bias presents an obstacle to the inclusion of vocational programs in regular education. Working on public opinion and changing the notion of vocational training as a serious issue, takes a huge amount of time, requiring both active propaganda and demonstration of successful examples.

- **Funding and Financial Constraints**

Adequate financial support is required for the successful execution of vocational education programs. In addition, high costs have caused many schools to be unable to invest in the appropriate infrastructure and resources. Ensuring the requisite and prompt public funding from all possible sources - government sector, private partnerships, and other stakeholders is equally a major uphill challenge that has to be tackled if the aims of NEP2020 are to be realized.

- **Integration with Industry Needs**

Ensuring vocational education aligns with the needs of industry and also has a robust eye on future job market trends is difficult but essential. Technological advancements and economic developments move so fast that constantly changing the curriculum for vocational classes or professional training programs may become a necessity. A key, ongoing challenge is forging deep industry partnerships to keep vocational training relevant and tied to employer needs.

• **Opportunities in Integrating Vocational Education with General Education**

Integrating vocational education into mainstream education provides a significant opportunity to improve student outcomes and close the skills gap facing many industries in today's rapidly changing job market. Using this hybrid approach, students can receive a comprehensive education that provides them with both theoretical and practical skills. This integrated education model can completely transform the way we prepare our students for the job market if we continue to examine its benefits and opportunities.

• **Enhanced Employability**

One of the main advantages of combining general education and vocational education is increased employability. Students who receive instruction in both academics and practicals are better prepared to handle the demands of the modern workforce. Employers usually seek candidates with the background in theory and practical experience required for a particular role.

• **Bridging the Skills Gap**

Many industries today are experiencing a skills gap, where the skills possessed by job seekers do not align with the needs of employers. Integrating vocational education with general education can help bridge this gap by providing students with relevant and up-to-date skills that are directly applicable to their chosen careers. This alignment between education and industry needs ensures that graduates are not only knowledgeable but also capable of performing the tasks required in their respective fields.

• **Personalized Learning Experiences**

Vocational education and general education can be integrated to provide more individualized learning opportunities. When students tailor their education to meet their interests and career goals, engagement and motivation can increase. For instance, a student interested in a healthcare career could enroll in general education biology and chemistry courses before pursuing medical assistant or nursing as their vocational focus. This individualized approach will ensure that students receive a well-rounded education that is relevant to and useful for their future careers.

• **Development of Soft Skills**

Integrating technical knowledge into general education promotes the development of critical soft skills in addition to technical skills. Critical thinking, problem-solving, collaboration and communication are important skills that employers highly respect. Students can learn these soft skills in a real-world environment by combining classroom instruction with practical training. Graduates have more diverse and adaptable skills that will help them in the workplace.

• **Increased Access to Career Pathways**

Integrating vocational training into general education, students have access to a greater variety of career paths. Students can explore a variety of career fields and immerse themselves in a variety of industries rather than being limited to traditional academic routes. Students exposed to this type of material will be able to make better decisions about their careers and better understand the opportunities available to them. Additionally, by emphasizing the importance and value of vocational training, this strategy can help address the stigma associated with it.

• **Strengthening Economic Development**

Expanding the scope of economic development can be facilitated by integrating vocational and general education. Educational institutions can provide a workforce that is knowledgeable in both academic subjects and practical skills to meet the demands of the regional and national economies. Skilled labor is essential for innovation, productivity, and economic expansion. Further benefits of this integration include the promotion of economic sectors that are vital to stability and progress.

Recommendations for Effective Implementation of Integrating Vocational Education with General Education

Implementing an integrated approach to vocational and general education requires careful planning and strategic execution. Prof Kedarshubhangi suggested that Along with graduating from degree college, short-term training can be provided. Universities and colleges can also organize different forums for discussion with professionals in the industry to inform young people about the skills needed in the market, such as education-industry conclaves. Aithal Shubhrajyotsna & Aithal P.S. (2020) suggest that Students should develop their interests and engage in economic or productive activities to lessen their reliance on their parents and promote self-reliance after the age of eighteen. This can be achieved by giving them vocational training and boosting their self-esteem as they study. At the higher education level, the earn-while-you-learn model based on vocational training can be reinforced by adding more credits to the Academic Bank of Credits (ABC). In addition, the undergraduate program should be structured so that, in addition to core, non-core, and elective courses, there should be two skill-based subjects that concentrate on employability and entrepreneurship

skills, respectively. These skill-based subjects should be evaluated internally continuously rather than through semester-ending tests. Students feel more confident in their decision to pursue a career as entrepreneurs thanks to this creative model.

To ensure the effectiveness of this educational model, several key recommendations should be considered:

- **Develop Collaborative Partnerships**

Integration requires strong partnerships among government agencies, corporate partners, and academic institutions. These collaborations can help with curriculum development, hands-on training tools, and valuable insights into the sector's demands. Establishing advisory boards comprised of members from various industries can help ensure that the curriculum remains current and relevant to industry standards.

- **Design a Flexible Curriculum**

There needs to be a flexible curriculum that makes it possible for general education and vocational education to be seamlessly integrated. This can be achieved by offering multidisciplinary programs that blend academic knowledge with real-world application, or by integrating vocational training modules into regular academic courses. The goal of the curriculum should be to provide students with a well-rounded education that satisfies their academic and professional needs.

- **Provide Professional Development for Educators**

A comprehensive educational model can only be successfully implemented with the help of educators. It is important to offer professional development programs to teachers and instructors so they can adapt to new curriculum requirements and teaching strategies. The goals of training should be to equip teachers with the knowledge and abilities needed to teach academic and vocational subjects engagingly and to promote cooperation between academic and vocational instructors.

- **Ensure Access to Modern Facilities and Equipment**

It is essential to have access to state-of-the-art facilities and equipment if you want to give students practical instruction that mimics real-world situations. Modern infrastructure and technology should be purchased by educational institutions to support vocational training. Students can also benefit from partnerships with nearby companies and sectors by participating in work-based learning, apprenticeships, and internships that provide real-world experience.

- **Implement Comprehensive Career Guidance Services**

There is a need for comprehensive career counseling services to help students navigate the various options available to them. Career counselors should work closely with students to identify their interests, strengths, and career goals. Providing students with information about the wide range of opportunities in both academic and professional fields can help them make informed decisions about their educational and career paths.

- **Promote Community and Industry Engagement**

Enhancing the efficacy of the integrated educational model can be achieved through involving industry stakeholders and the broader community. Public awareness campaigns, industry alliances, and community outreach initiatives can all contribute to a rise in support for the project. Student experiences such as site visits, guest lectures, and mentoring programs can provide them with invaluable insights and practical experience.

By implementing these suggestions, educational institutions can successfully combine general education and vocational training, creating a comprehensive and dynamic learning environment that equips students for successful careers in a labor market that is changing quickly. This method helps to create a workforce that is knowledgeable and flexible enough to meet the demands of contemporary industries, in addition to being beneficial to students.

Conclusion

The National Education Policy 2020 (NEP2020) marked a sea change in the educational scenario of India, especially with the focus on the seamless integration of vocational education into general education. The policy seeks to transform the existing 10+2 education system, consolidating it into two phases -- a Foundational Stage (three years) and a Preparatory Stage (three years followed by five years of an upper activity stage), making it structures based on various reflect on methods the content-based curriculum. Our study examined the alignment of vocational development programs with general education as per the NEP2020 in comparison with earlier educational policies and concurrently assessed their present implementation status and challenges. (Sahasrabudhe et al., 2021) Found that The integration of skill development and vocational education into the school system will facilitate the integration of the former with traditional education. The same has been acknowledged by NEP 2020, which has changed the entire educational system to mainstream vocational education. The new education policy NEP2020 strives to eliminate the rigid line dividing vocational and academic education by inculcating vocational components from class IV onwards with an objective of at least 50% of students learning through vocational mode by 2025. The policy includes developing skill labs, and industry partnerships and providing easy entry-exit points for students between vocational and academic streams. Such comments would only strengthen the existing wall between vocational education and regular schooling, beyond the identification of new types of Syllabi-related changes in curriculum towards developing concern for life skills integration more research and further steps encouraging forms of practical engagement

to thing aim at skill and participation convergentness aiming for pursuit of pleasure revising vocationalisation with various practices, converting our youth that focusses on different outcomes' content puts them in package world. Risks faced during implementation of NEP2020: For sure there are multiple challenges in the path of a good quality benefit; Lack Of Infrastructure and Resource Base. There is a need to develop training facilities in and around rural areas to facilitate rural youth to get skill training to access good jobs or set up their enterprises. Vocational training should be accorded top priority (Bhuvana et al., 2018)

A major bottleneck is the infrastructure availability, and most schools in India do not have the required facilities and trained instructors to deliver Vocational Education effectively. Another challenge is the curriculum design and flexibility: to blend vocational training courses with academic subjects, they need to be at once substantive and up-to-date, which poses a significant challenge in terms of assessment as well. Crucial areas that require significant investment and focus are teacher training and professional development, as the present inadequate stock of appropriately grounded teachers is a major obstacle to efficient delivery within vocational education. One of the biggest barriers is how society views or thinks about vocational education. In India, vocational education has always been looked down upon compared to academic education, and changing this perception will take concerted efforts by way of awareness campaigns and showing progressive results. Inadequate funding and financial constraints are also significant problems as a considerable number of institutions are not able to afford robust investments in required infrastructure and resources due to very little financial aid. This means having and maintaining sufficient, reliable funding from government sources, private partnerships, and other stakeholders. According to Punjani (2019), VET (Vocational Education and Training) should be made compulsory and given in every secondary school. A stipend should be given to every vocational student. He concluded that to make in India project successful, it is necessary to give the right skills to youth to compete in the global race for jobs. Aligning vocational education with the needs of these industries and the projected trends in the future job market is essential, yet difficult. In a fast-changing landscape, the curriculum must also be updated constantly, and kept in step with industry requirements to ensure vocational education is contemporary and employer demand-driven; A Better network with stakeholders such as government bodies, Educational Institutions, Industry Partners, and Community is also important for the successful implementation of Vocational Education Initiatives. Although many challenges exist to this vision, NEP2020 has envisaged a holistic framework for vocational integration with general education towards promoting skill development and employability. It is very difficult to fix each one of the above barriers but with a strong action plan, enough funding, massive training for teachers, and equally confident industry linkages those can be fixed for successful implementation. With its vision of a holistic, multidisciplinary education system, the policy has the potential to change the way that India approaches education and make it more suited to preparing students for the future changes in skill demands that will be seen if already are being experienced job markets around the world.

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