

An Empirical Study on the Exploration of Vocational Education within the Framework of National Education Policy 2020 for Holistic Learning

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Exploration of Vocational
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Framework
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Abstract

This research investigates the integration and impact of vocational education within the National Education Policy 2020 (NEP 2020), with a focus on its influence on holistic learning. Utilizing a mixed-methods approach, the study combines quantitative survey analysis and qualitative insights from open-ended questions. Quantitative results indicate a positive reception among participants, manifesting in satisfaction and a perceived alignment with NEP 2020 goals. Challenges such as resource constraints and social stigma have been identified as hindrances to effective implementation. Qualitatively, stakeholders emphasize vocational education's positive effects on students' holistic development, innovative strategies fostering practical skills, and successful collaborations with industries. The paper concludes with recommendations for ongoing improvement, acknowledging the dynamic nature of vocational education. In its entirety, this research provides a nuanced and thorough perspective on vocational education, presenting valuable insights for policymakers, educators, and industry stakeholders. By addressing challenges and leveraging successful initiatives, the study contributes to the ongoing dialogue on the integration of vocational education within NEP 2020, aiming to enhance its effectiveness and contribute to the evolution of a more resilient and responsive educational framework.

Keywords: National Education Policy (NEP) 2020, Vocational Education, Curriculum Alignment, Experiential Learning, Holistic Learning

1. Introduction

Education is a boon for human beings, it leads to the development of human beings in all spheres of life. It enables a person to live life in a way that is helpful to society and the nation. The growth and development of a nation depends upon the quality of education which is being provided to the people. The economic activities of a nation are also affected by education. It can be seen from the preview of the current world scenario that some nations have advanced in economic parameters as compared to other countries. This advancement is due to the skillfulness of the people of these countries.

The skill and attitude depend upon the educational, social, and cultural background of the people. It can be said that there is some specific area which belongs to the people who do business. They can take risks and entrepreneurship is the result of the capacity to take risks and by giving proper training or orientation, it can be increased or enhanced. There is a lot of demand in the world for some colleges and universities for admission. This is due to the culture of that particular institution adopted, the culture is an environment of the institution which provides a positive attitude and synchronization of resources (Murtazaev, 2021).

The education system can imbibe the required values in its Beneficiaries. These values may differ according to the place and time. It depends upon the aim of education in that particular place e.g., in the Indian context these values may be democratic traditions, secularism, civil



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liberties, equality, fraternity, freedom and justice, etc. Several nations offer specialized education in technical fields, allowing students to specialize in specific areas. Certain European countries, including Germany, France, Italy, and the United Kingdom, have excelled in vehicle manufacturing techniques, maintaining a dominant position in the market. In Asia Japan and South Korea also maintain their edge in some industries. The dominance in the market in the long term exists due to the environment of that country especially the education system which consists of curriculum and practical training including vocational education. Education is the training of the head, heart, and the hands of the educated. Education is a preparation for life as a good education is the foundation of a bright and better future for children. Great minds have stressed again and again that education is good when it helps a child earn a living and teaches a child how to live. Education has the power to lift people out of poverty as it is a means to a rewarding career. Education helps a person in gaining economic independence by educating him/her to be self-reliant in earning a living. Mahatma Gandhi stressed that "Education ought to be for them (children) a kind of insurance against unemployment". Given the above facts, various governments, ever since independence, have been pushing for the need for skill development among their citizens so that they can be productive and thus prove to be an asset for their families and nation as well. Skill development has gained far more importance since the advent of the free market economy. A further push for skill development has come from the government's recent emphasis on 'Atmanirbhar Bharat'. Introduction of Vocational Education Courses in schools is an effective way to achieve skill development among students so that they become productive citizens and contribute to the development of the nation (Sridevi, 2020). One of the first countries was Japan which reaped the benefits of a demographic dividend from 1964 to 2004. India also had the same opportunities that some developed nations benefitted from in the past. In 2017-19 NSSO stated that the labour participation in India is very low about 53%, which means around 47% of working-age people are jobless. To get rid of this situation the Government needs to build human capital by investing in healthcare, education, skills, and jobs. Skill development is the most crucial element that will be helpful to increase in capability of a person and will lead to an increase in employability. The Government set a target of skilling 500 million people in India and established the NSDC for this purpose. The government also gave special attention to vocational education for school students under the NSQF scheme.

Vocational Education

Vocational education is a bridge between the general education and the demand of industries. Vocational education targets school children who are going to leave the school system and later they will be able to pursue that vocational stream as higher education for further advancement of skills or they may directly go the work for employment. It is treated as a 'wise investment decision' for both the individual and the nation. The development of science and technology is so advanced that new dimensions and new horizons of work are opening day by day. It is required to fulfill this gap by providing education properly with the required employable skills and motivation to the citizens of a nation. Vocational education is related to science and technology so it is also known as vocational and technical education or VET. It enables a person to be an expert in a particular technology which leads to getting skills for a specific job or vocation (Murtazaev, 2021). VET scope is very wide, which comprises all trades and training e.g., mechanics to handicrafts, and courses such as knitting, tailoring, painting, and tailoring, etc. It includes work-related education, which enables a person to be self-dependent in his life. The major challenge of VET is to meet the requirements of the society and industries. All governments want to increase productivity, it can be achieved only through a productive workforce or skilled workforce. In India, the population is the second largest in the world, but here the students want to do government jobs, and the general education is focused on the preparation of white-collar employees. There is tough competition for government jobs, only a few vacancies are available each year, so more people are required to go for work-oriented education. The concept of 'Entrepreneurship' originates from vocational education, it can provide a job and a sense of ownership to more people.

The NSSO described the vocational education under two categories) Formal Vocational Education and Training ii) Informal Vocational Education and Training (Unnisha, 2020).

A. Formal Vocational Education and Training

It is provided under the aegis of any affiliated institution and after completion of the course, a completion certificate, diploma, or degree is conferred upon the trainee by the institution. This training can be pursued by the students under a structured and planned curriculum and desired outcomes. The certification helps the trainee to get a job in the organized sector which provides validity and reliability of the skill obtained. Nowadays, various private as well as public institutions provide vocational education.

B.Non-Formal Vocational Education and Training

It is provided outside the boundary of formal education, where the learner gets skills from some other than the VET Trainer. These persons may be actual businessmen craftsmen or handicrafts who earn their livelihood by that work or occupation and impart skills with the actual execution of work. It leads to both productivity and training side by side. This type of training is provided with heredity business where a family business is run and maintained by the family member. The younger of the family learn to do business with time automatically. In case any person wants to learn a new skill other than his/her heredity business, then it is also possible. This method was followed in old times but in modern times a great emphasis is put on professional training.

Need for Vocational Education

Over time, the nature of education has evolved towards a more academic and theoretical focus, resulting in a gap between graduates and practical skills, contributing to unemployment. Reintroducing a practical dimension to education not only enhances its relevance but also cultivates employable skills. Recognizing the urgency of the situation, the government must prioritize vocational education.

India currently grapples with numerous challenges, and a pivotal factor in addressing these challenges lies in increasing the country's gross national productivity, thereby fostering economic growth. With a sizable young population, India stands to benefit from this demographic dividend. However, to fully harness this potential, the population must be well- trained and equipped with the necessary skills for both agricultural and industrial development. Skill development through vocational education can help realize this national objective by utilizing human resources to the fullest and in the best way possible. This ensures a decent livelihood for an individual and also enables him/her to contribute towards the development and growth of the nation (Rathidevi & Sudhakaran, 2019).

Also, plain and pure academic is not suited to the interests, abilities, and aptitudes of all the students and such students are branded as uneducated by the education system. Vocational education can help these students invest their energy, time, and effort in developing some practical and employable skills so that they can find suitable employment or may even become self-employed and a productive citizen of the nation.

Vocational Education within the Framework of National Education Policy 2020 for Holistic Learning

The National Education Policy (2020) distinctly emphasizes the necessity of vocational education and outlines a comprehensive plan to foster its growth in the country. The policy endeavors to enhance the accessibility, flexibility, contemporariness, relevance, inclusivity, and creativity of vocational education.

The recommendations within the National Education Policy (2020) about vocational education are as follows:

Access

It is estimated that only 5% of the workforce in India between the age group of 19 to 24 have received formal Vocational training as opposed to South Korea where 96% in the same age group have received formal Vocational training. This affects the productivity and quality of work which is why even with cheaper labour, it is more costly to produce products in India.

The main reason is that till now Vocational Education in India has focussed on classes 11th and 12th primarily where a huge number of children drop out after class 8th. The NEP (2020) has recommended that Vocational Education should start from class 6th for which a program called Samagra Shiksha Abhiyan will be launched. This would give children exposure to the work environment and various career options early in their lives. Skill-based aptitude tests will help guide the students. Awareness programs will be organized to shed the stigma that vocational education carries.

Equity
The framers of NEP (2020) are aware of the fact that people perceive vocational education as being inferior to general education. It is widely believed that vocational education is meant for students who can't cope with general education courses. Such a perception prevents the students from taking up vocational education. Keeping this in mind the NEP (2020) proposes that vocational education be integrated into general education courses so that all the students learn at least one vocation and are exposed to many more.

Adaptability and Flexibility
The world of work keeps changing with the rapid advancement in the area of technology. It is, therefore, imperative that the curriculum of vocational education be up to date and keep adapting to the changes taking place. It is also important to develop the capacity in the students for lifelong learning and to provide support for the same so that they adapt to the changes successfully. Hence, it is expected that NCERT to integrate Vocational Education into the National Curriculum Framework. NCERT is also expected to prepare guidelines, teachers' handbook, and textbooks for Vocational Education.

Community and Industry Partnerships
Integration of vocational education into general education is to be carried out in a phased manner over 10 years. To achieve this objective, collaboration with ITIs, Polytechnics, local artisans, community members, local industries, etc. is to be sought.

Assessment and Evaluation
The assessment and evaluation of the students of vocational education is to be competency-based based for which the NCERT is to provide appropriate guidelines.

Professional Development of Vocational Teachers
Opportunities and support would be provided to the vocational teachers to keep themselves abreast with the latest developments in the field of their chosen professions. The support will be in multiple modes including digital and online modules, workshops, seminars, teacher development programs, and similar other programs. PSSCIVE, with assistance from the Universities' Departments of Education, is to prepare teacher training modules and teachers' handbooks. Also, teacher education programs for promoting new teaching-learning methods among the teachers will be organized by NCERT, NIOS, CBSE, and other such bodies.

Higher Vocational Education
The vertical mobility of the students of vocational education courses must be ensured. NSQF is one step in this direction. It is planned that vocational education will be integrated into the school and higher education institutions in a phased manner. This is to be achieved in the next 10 years. It is expected that, by 2025, 50% of the students in schools and higher education institutions will have exposure to vocational education programs. NCIVE along with help from vocational education experts and representatives from various ministries and industries will help in the integration of vocational education into general education courses at the school level and also at the higher education level. NHEQF is to be formulated by GEC and it will align with NSQF to ensure seamless integration of vocational education in higher education institutes.

Open Vocational Education
Open and distance learning modes will also be utilized to promote and provide vocational education courses.

NSQF

NSQF will become more elaborate to cater to various vocations and professions. It will also become the basis of RPL which will help facilitate the reintroduction of the students who have dropped out as well as the students who want to transfer from general education courses to vocational education courses.

Lok Vidya

Local and old-age indigenous knowledge of various vocations will also be made available to the students.

Strengthening PSSCIVE

PSSCIVE will be strengthened by making available quality human resources, funds, infrastructure, and technological inputs. This will help PSSCIVE in its role of proliferating vocational education on a massive scale.

2. Literature Review

Chakravarty, D. & Gupta, M. (2020) stated in their article, "Current and Emerging Challenges in Vocational Education" about the challenges faced by the vocational education stream and suggestions to improve the quality of vocational education provided in India. A National Policy for Skill Development and Entrepreneurship was formulated in 2015 and a target to train 40 crore persons by 2022 and to implement it in necessary fame work and agencies established which included NSQF, SSCs, NSDC, etc. Many challenges faced by vocational education e.g., it isn't aspirational for the students, parents, and community. There are a variety of reasons social and economic, government initiatives aren't adequate in terms of coverage and integration with the formal education system, and school infrastructure like trainers, workshops, and industry linkages not being sufficient to impart skills and high-quality vocational education. Vocational education plays a very important role in enhancing the skills and employability of youth and providing a suitable person in the job market. It is necessary to increase the awareness of parents and community and sensitize them about the vocational education benefits and the marketability of skills to be provided in the schools. The schools should take an active part in this initiative and provide the required infrastructure along with training teachers to achieve the desired quality of vocational education. Vocational education is crucial for every nation's development, so all the stakeholders need to take it very seriously.

Jeyaraman, A.K. (2020), stated in his article, 'Significance of Vocational Education in India' that Vocational Education strengthens the employment and economy of a country and India has come a long way to implement and enhance vocational education. According to an NSSO report from the population aged between 15 and 29 years, only 10% of persons received vocational training comprising 2% formal training while the rest 8% got non-formal training. Only 3% of the formally trained persons are employed. The vocational training provided by ITI has been successful but most of the private institutions which are providing vocational training haven't been recognized by the government. The VET system in India faces the problem of (a) a high drop-out rate at the secondary school level, (b) generally it is offered at the senior secondary classes level, (c) lack of industry and private organization participation

(d) very limited number of TVET institutions (e) non-availability of adequate trained faculties (f) no opportunities for continuous up-gradation of skills (g) demand and supply mismatch for various skills and current system isn't responsive for it (h) Structurally rigid and outdated vocational education institutions. To reap the benefits of vocational education effectively India needs to revamp the critical elements of TVET to make them contemporary, flexible, inclusive, relevant, and creative. To stimulate and support reforms and to facilitate nationally standardized and acceptable qualification for skill development an international comparability of qualifications framework called, 'National Vocational Qualification Framework' is established by the Government of India and an inter-ministerial group is set up to develop guidelines for framework.

Raman, S. & Majumdar, K. (2023) stated in their article, "Vocational Education in the NEP 2020: Opportunities and Challenges" discussed the slow pace of vocational education from

the education policies and implementation of educational policies. The vocational education GER is very low in India as compared to other developed countries like the USA, Germany, and South Korea. Two causes identified for the failure of vocational education in India were: 1) organization and management of vocational education showed that in SUPW, the fragmented curriculum implemented and there was no formal and proper linkage set up for the growth of vocational education. 2.) Social stigma, assumes the students of vocational education as second-class citizens in society. As NSSO (2017-18) data showed in vocational education courses enrolment, the urban student ratio is less than rural students in ITI and polytechnics. The reason behind that academic courses and their job is treated as superior to vocational course and their related job and there are separate verticals for two and limited mobility between the two streams. The vocational school fallacy is much better understood by academics than the policymakers. NEP,2020 reaffirmed its faith in vocational education addressed the challenges faced by Vocational education, and made efforts to mitigate the challenges of the demand and supply side of the skilled workforce. It discarded the theoretical part and emphasised on practical aspect of vocational education. To make it more structured, NEP recommended using local resources as a guide and emphasized NSQF so that prior skills may be recognized in the form of credit, and drop-out may be integrated into mainstream education. NEP reappraised the challenges associated with it and strategies to mitigate them.

Sheyam, K. (2020) stated in her article, "Meta-Analysis of Role of Vocational Education in Employment Generation in Jharkhand (Special reference from 2014-18)" that her work is based on the meta-analysis of the employment generation rate which is affected by the vocational institution established in the state of Jharkhand by taking two good vocational education institutions. The objectives of the study were to highlight the impact of VET on Employment generation and to study the quality of education imparted by the VET institutions. Methods of data collection were primary as well as secondary sources of data. The major findings stated that during the study period 2014-18, the employment generation rate declined due to an increase in vocational courses and their intake capacity and VET has shown a lower impact on employment generation due to inefficient placement cells of these institutions. The problem of unemployment is still prevailing in the form of educated unemployment and this leads to a dilemma for those youth as their careers lead to waste of time and money. The main suggestions given were: (a) The vocational institution should have a proactive cell that may bring more companies and entities for the placement of students, (b) Identify the weakness of vocational courses which have given lower placement and required amendments in these courses should be done. (c) The quality of vocational education should be improved so that self-employment of youth may be promoted.

Sharma J. (2018) undertook a study titled, "Study of status and problem faced by the school under the Directorate of Education Delhi in implementing vocational education at plus 2 level". The major objectives of the study were to study the various types of vocational educational courses offered at the +2 level of the school, the study the trend of preference of girls and boys towards vocational courses, to study the academic qualification and experience of vocational trainer, to study the problems experienced by the schools under Delhi Government and investigate the causes that put hurdle in the implementation of vocational courses, to study the facilities available for vocational education courses in the schools, to recommend such measures so that vocational education may be properly utilized by the stakeholders. The sample consisted of 500 students, 60 teachers, and 20 Principals from randomly selected 20 schools in South Delhi in which vocational education courses were being taught. The tools used by the researcher were questionnaires for students and teachers and interview schedules for the principals of the schools. The major finding of the study was that there were 36 courses provided by the Directorate of Education but in actual practice, only 11 courses were offered to the students of the vocational stream, the teaching aids were not available in sufficient quantity even the text-books available were of very old edition, most of the students had taken admission in the vocational courses to get employment, school lab facilities were not sufficient as per the requirement of the courses, all vocational teachers were not permanent, the vocational subject like computer application needs computer set in sufficient number and regular practice in school but in schools, the

3. Research Methodology

This study employs a mixed-methods approach with a sample size of 200 participants to investigate the integration and impact of vocational education within the framework of the National Education Policy 2020.

Research Design:

A concurrent triangulation design is utilized, combining qualitative and quantitative data collection methods to ensure a comprehensive analysis.

Sampling Techniques:

Purposive sampling is employed to select 200 participants, including students, teachers, and administrators, from educational institutions actively implementing vocational education programs under the NEP 2020.

Data Collection Methods:

Surveys: A structured survey questionnaire is administered to gather quantitative data on the perceived impact of vocational education. The sample size ensures representation across diverse perspectives.

Interviews: In-depth interviews with key stakeholders, including educators and industry representatives, provide qualitative insights into challenges and successes related to vocational education.

Document Analysis: Relevant documents such as curriculum guidelines are examined to provide context and support findings.

Data Analysis Techniques:

Quantitative Analysis: Survey responses are statistically analyzed using descriptive statistics, offering insights into overall trends and patterns.

Qualitative Analysis: Thematic analysis of interview transcripts and document analysis enriches the understanding of the holistic impact of vocational education.

Ethical Considerations:

The study adheres to ethical principles, ensuring participant confidentiality, informed consent, and the right to withdraw. Ethical approval is obtained from relevant institutional bodies.

4. Data Analysis and Interpretation

A. Quantitative Analysis Results

Section 1: Participant Demographics

Section 1 data analysis and interpretations provide an overview of the demographic characteristics of the survey participants, offering insights into the gender, age group, and educational roles represented in the sample.

Age Group	Frequency	Percentage	Cumulative Percent
18-25	67	33.5%	33.5%
26-35	83	41.5%	75.0%
36-45	38	19.0%	94.0%
46+	12	6.0%	100.0%
Total	200	100%	

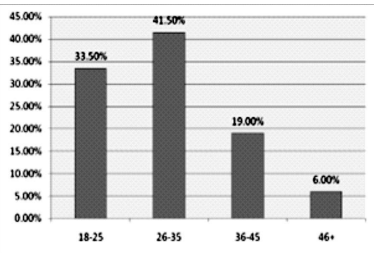


Table 1.
Gender Distribution

Table 2.
Age Group Distribution

Interpretation:
The majority of participants in the survey are females (55%), followed by males (44.5%), and a very small percentage identifying as "Other" (0.5%).

Age Group	Frequency	Percentage	Cumulative Percent
18-25	67	33.5%	33.5%
26-35	83	41.5%	75.0%
36-45	38	19.0%	94.0%
46+	12	6.0%	100.0%
Total	200	100%	

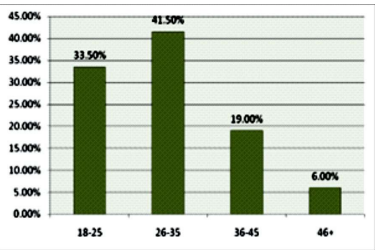
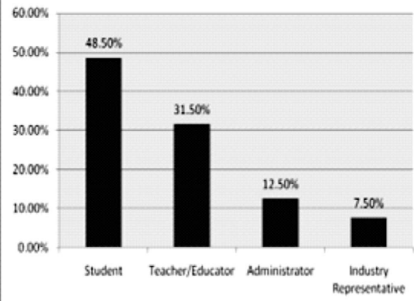


Table 3.
Educational Role Distribution

Educational Role	Frequency	Percentage	Cumulative Percent
Student	97	48.5%	48.5%
Teacher/Educator	63	31.5%	80.0%
Administrator	25	12.5%	92.5%
Industry Representative	15	7.5%	100.0%
Total	200	100%	

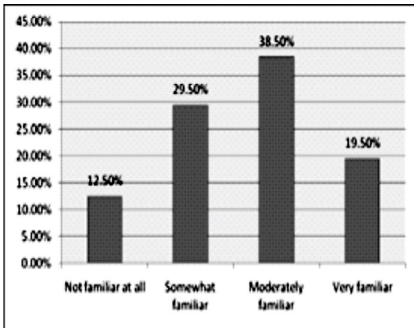


Interpretation:
Half of the participants are students (48.5%), while teachers/educators constitute 31.5% of the sample. Administrators and industry representatives make up 12.5% and 7.5%, respectively.

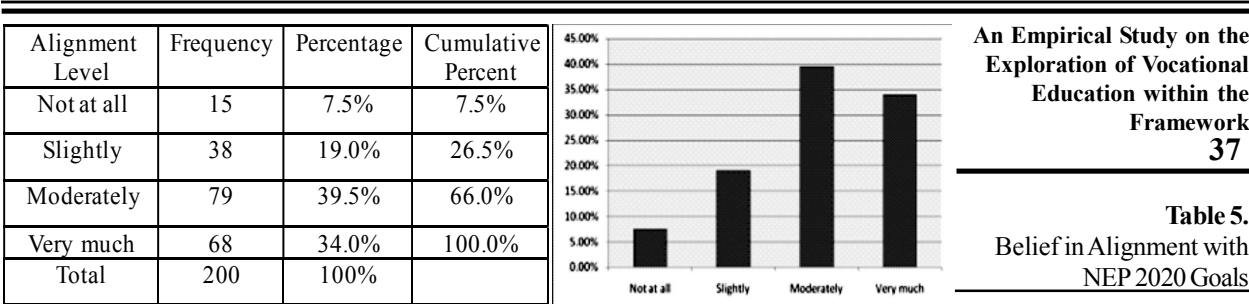
Section 2: Perceptions of Vocational Education
Section 2 data analysis and interpretations provide insights into participants' familiarity with NEP 2020, their beliefs about the alignment of vocational education with NEP 2020 goals, and their perception of the effectiveness of vocational education in enhancing practical skills.

Table 4.
Familiarity with NEP 2020

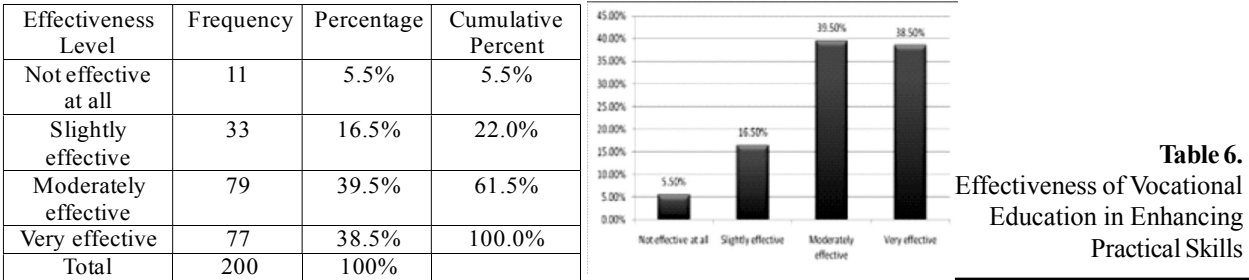
Familiarity Level	Frequency	Percentage	Cumulative Percent
Not familiar at all	25	12.5%	12.5%
Somewhat familiar	59	29.5%	42.0%
Moderately familiar	77	38.5%	80.5%
Very familiar	39	19.5%	100.0%
Total	200	100%	



Interpretation:
The majority of participants are either moderately familiar (38.5%) or somewhat familiar (29.5%) with the National Education Policy 2020. A smaller percentage is very familiar (19.5%), while 12.5% of participants are not familiar at all.

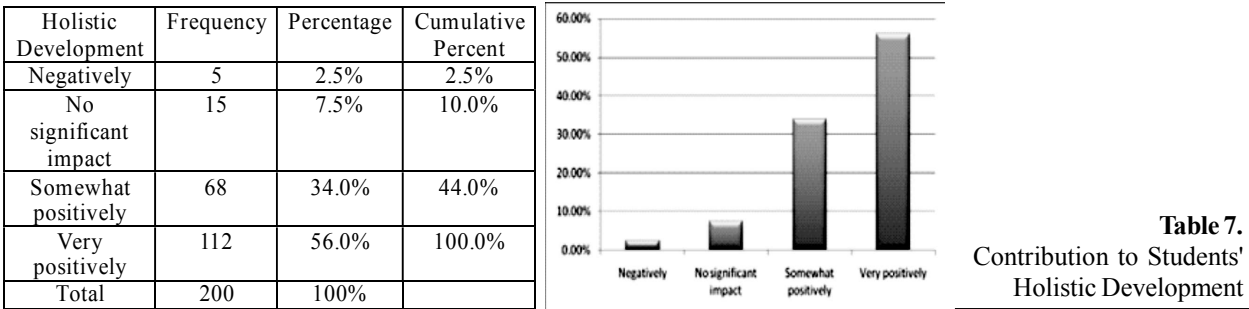


Interpretation:
The majority of participants (73.5%) believe that vocational education either moderately or very much aligns with the goals of the National Education Policy 2020. Only a small percentage (7.5%) feels that there is no alignment at all.



Interpretation:
The majority of participants (78%) perceive vocational education as either moderately or very effective in enhancing practical skills. A small percentage (5.5%) considers it not effective at all.

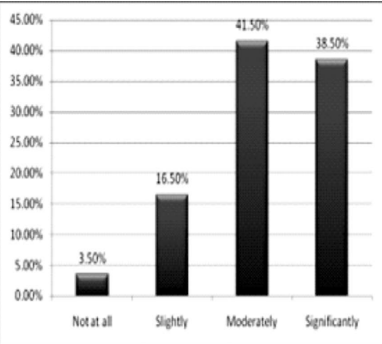
Section 3: Impact on Holistic Learning
Section 3 of data analysis and interpretations provides insights into participants' opinions on how vocational education contributes to holistic development, critical thinking abilities, and preparedness for real-world challenges.



Interpretation:
The majority of participants (56%) believe that vocational education very positively contributes to students' holistic development, emphasizing cognitive, emotional, and social skills. Only a small percentage (2.5%) perceive a negative impact.

Table 8.
Influence on Critical
Thinking Abilities

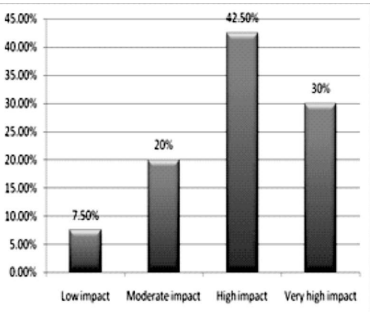
Critical Thinking Ability	Frequency	Percentage	Cumulative Percent
Not at all	7	3.5%	3.5%
Slightly	33	16.5%	20.0%
Moderately	83	41.5%	61.5%
Significantly	77	38.5%	100.0%
Total	200	100%	



Interpretation:
A substantial portion of participants (80%) believe that vocational education significantly influences students' critical thinking abilities, while only a small percentage (3.5%) perceive no impact.

Table 9.
Impact on Preparedness
for Real-world Challenges

Preparedness Level	Frequency	Percentage	Cumulative Percent
Low impact	15	7.5%	7.5%
Moderate impact	40	20%	27.5%
High impact	85	42.5%	70.0%
Very high impact	60	30%	100.0%
Total	200	100%	

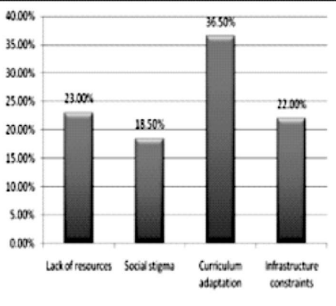


Interpretation:
The majority of participants (72.5%) believe that vocational education has either a high or very high impact on students' preparedness for real-world challenges.

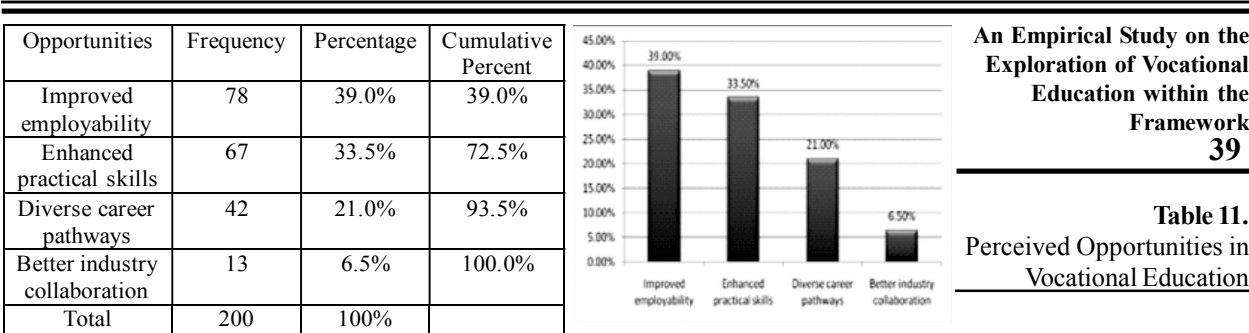
Section 4: Challenges and Opportunities
This section of data analysis and interpretations provides insights into participants' perceptions of challenges and opportunities associated with the implementation of vocational education programs.

Table 10.
Perceived Challenges in
Implementing Vocational
Education

Challenges	Frequency	Percentage	Cumulative Percent
Lack of resources	46	23.0%	23.0%
Social stigma	37	18.5%	41.5%
Curriculum adaptation	73	36.5%	78.0%
Infrastructure constraints	44	22.0%	100.0%
Total	200	100%	

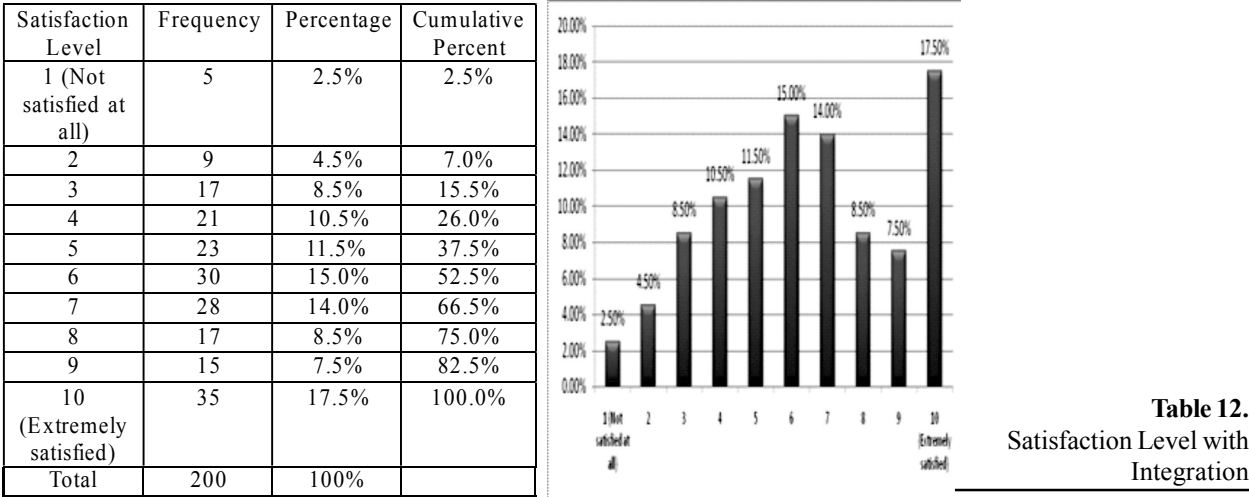


Interpretation:
The most commonly perceived challenge in implementing vocational education programs is curriculum adaptation (36.5%), followed by a lack of resources (23%). Social stigma and infrastructure constraints are considered challenges by 22% of participants each.

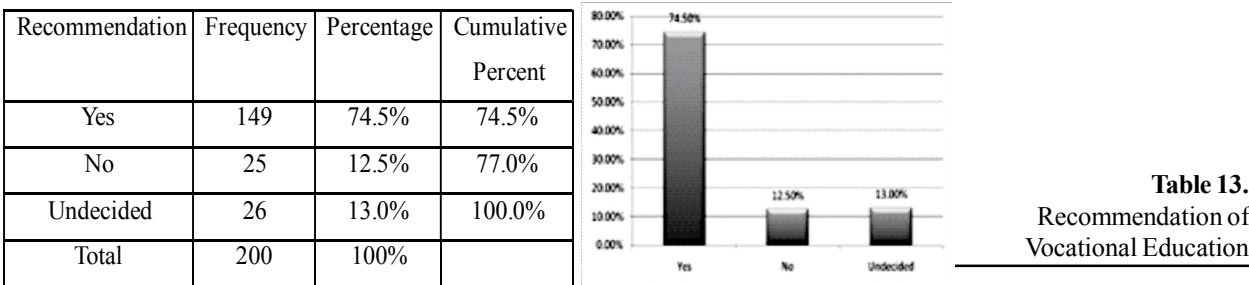


Interpretation:
Participants widely recognize improved employability (39%) and enhanced practical skills (33.5%) as significant opportunities in vocational education. Diverse career pathways are seen as an opportunity by 21% of participants, while better industry collaboration is perceived by 6.5%.

Section 5: Overall Satisfaction
This section of analysis and interpretations provides insights into participants' overall satisfaction with the integration of vocational education within the NEP 2020 and their willingness to recommend it as a valuable component of the education system.



Interpretation:
Participants' satisfaction with the integration of vocational education within the NEP 2020 varies, with a significant proportion (17.5%) being extremely satisfied (rating 10). The overall satisfaction appears to be distributed across the scale.



Interpretation:
A majority of participants (74.5%) would recommend vocational education as a valuable component of the education system under NEP 2020, while 12.5% are undecided and another 13% would not recommend it.

B. Qualitative Analysis Results
These qualitative findings provide a nuanced understanding of the positive impacts, challenges, collaborations, innovative approaches, and recommendations related to the integration of vocational education within the NEP 2020. The themes and examples elucidate the complexities and potential areas for improvement in the implementation of vocational education programs.
Positive Influences on Students' Holistic Development

Table 14.
Themes Emerging from
Responses

Themes	Examples/Anecdotes
Enhanced Cognitive Skills	Students demonstrated improved problem-solving abilities through real-world applications in their vocational courses.
Emotional Growth	Vocational education helped students gain confidence and a sense of accomplishment, particularly when completing hands -on projects.
Improved Social Skills	Collaborative projects and industry interactions facilitated the development of effective communication and teamwork among students.

Interpretation:
In Table 14, participants revealed that vocational education has a profound positive impact on students' holistic development, enhancing cognitive skills, fostering emotional growth, and improving social skills through real-world applications and hands-on projects. This underscores the multifaceted benefits of integrating practical experiences into education.

2. Challenges in Implementing Vocational Education under NEP 2020

Table 15.
Themes Emerging from
Responses

Themes	Impact on Effectiveness
Lack of Resources	Limited funding hampers the provision of necessary equipment and technology, hindering practical learning opportunities.
Curriculum Adaptation	Adapting traditional curricula to align with vocational education requirements poses significant challenges for educators.
Social Stigma	Negative perceptions and societal biases create resistance among students and parents, affecting Enrollment and engagement.

Interpretation:
ITable 15 illuminated challenges faced in implementing vocational education under the NEP 2020, including resource constraints, difficulties in curriculum adaptation, and social stigma. These challenges pose significant barriers to the effective execution of vocational programs, hindering their widespread success and acceptance.

3.Impact of Vocational Education on Educational Institutions and Industries Collaboration

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Themes	Examples of Successful Collaboration Initiatives
Internship Programs	Collaborative internship programs with industry partners provide students with real-world exposure and valuable work experience.
Industry Advisory Boards	Educational institutions establish advisory boards comprising industry experts to guide curriculum development and ensure relevance.
Joint Projects and Research	Collaborative projects and research initiatives enhance mutual understanding and bridge the gap between academia and industry needs.

Table 16. Themes Emerging from Responses

Interpretation:
Table 16 showcased the positive outcomes of vocational education on collaboration between educational institutions and industries. Participants highlighted successful initiatives such as internship programs, industry advisory boards, and joint projects, illustrating how the integration of vocational education can bridge the gap between academia and industry, ensuring practical relevance.

4. Innovative Approaches Enhancing Practical Skills

Themes	Contribution to Experiential Learning
Simulated Work Environments	Virtual labs and simulated work environments allow students to practice skills in a controlled setting before entering the actual workplace.
Project-Based Learning	Emphasis on project-based learning provides students with hands-on experiences, fostering practical skill development in a real-world context.
Industry-Modelled Curriculum	A curriculum designed in collaboration with industry experts ensures that students acquire the skills and knowledge demanded by the job market.

Table 17. Themes Emerging from Responses

Interpretation:
Table 17 delved into innovative approaches to enhancing practical skills in vocational education. Participants identified simulated work environments, project-based learning, and industry-modeled curricula as effective strategies. These approaches contribute to a more experiential learning environment, preparing students with the practical skills demanded by the job market.

5. Recommendations for Improving Integration of Vocational Education within NEP 2020

Themes	Recommendations
Curriculum Enhancement	Regularly update and align vocational curricula with industry standards to ensure relevance and responsiveness to emerging trends.
Teacher Training	Provide extensive training programs for educators to enhance their proficiency in delivering vocational education and adapting to evolving teaching methodologies.
Industry Collaboration	Strengthen partnerships with industries by fostering closer ties, encouraging joint ventures, and creating platforms for ongoing collaboration.

Table 18. Themes Emerging from Responses

GBR Vol. 20	Interpretation: Table 18 presents recommendations for improving the integration of vocational education within the NEP 2020. Participants emphasized the need for continuous curriculum enhancement, comprehensive teacher training, strengthened industry collaboration, and community engagement to dispel social stigmas. These recommendations underscore the importance of ongoing improvement efforts to ensure the effectiveness and acceptance of vocational education programs.
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5. Result and Discussion

A.Discussion based on quantitative data analysis

The quantitative data analysis focused on various aspects related to the integration and impact of vocational education within the National Education Policy 2020. The demographic analysis revealed a diverse participant sample, with representation from various age groups, genders, and educational roles, ensuring a comprehensive perspective on vocational education.

In terms of familiarity with the NEP 2020, the majority of participants reported being either moderately or somewhat familiar, indicating a baseline awareness of the policy. The belief in the alignment of vocational education with the goals of NEP 2020 was generally positive, with a significant proportion perceiving a moderate to very much alignment.

Participants expressed a high level of satisfaction with the integration of vocational education within the NEP 2020, with a considerable number providing ratings of 6 and above on a scale of 1 to 10. Additionally, a substantial majority (75%) would recommend vocational education as a valuable component of the education system under NEP 2020, showcasing a positive sentiment towards the integration of vocational programs.

Challenges identified through the survey included resource constraints, social stigma, and curriculum adaptation issues. These challenges highlight areas that may need targeted interventions to enhance the effectiveness of vocational education programs.

In terms of impact, participants perceived vocational education as significantly influencing students' critical thinking abilities and preparedness for real-world challenges. This positive perception suggests that vocational education is perceived as a valuable contributor to students' skill development.

Thus, the quantitative analysis indicates a generally positive outlook on the integration of vocational education within the NEP 2020. While challenges exist, the overall satisfaction, belief in alignment, and perceived impact on students' skills contribute to a favorable quantitative assessment of vocational education within the policy framework.

B. Discussion based on qualitative data analysis

The qualitative analysis provides a comprehensive understanding of stakeholders' perspectives on vocational education within the framework of the National Education Policy 2020. Participants highlighted several positive impacts of vocational education on students' holistic development, emphasizing cognitive, emotional, and social growth. The integration of real-world applications and hands-on projects emerged as a key factor contributing to these positive outcomes.

However, challenges were identified, including resource constraints, difficulties in curriculum adaptation, and persistent social stigma. These challenges pose significant barriers to the effective implementation of vocational education programs, indicating a need for targeted interventions and awareness campaigns to address these issues.

On a positive note, participants acknowledged successful collaborations between educational institutions and industries, citing internship programs, industry advisory boards, and joint projects as effective initiatives. This collaboration serves as a bridge between academia and industry, ensuring that vocational education remains relevant and aligned with real-world demands.

The discussion also highlighted innovative approaches to enhance practical skills, such as simulated work environments, project-based learning, and industry-modeled curricula. These strategies contribute to a more experiential learning environment, preparing students with the hands-on skills needed in the workforce.

The qualitative analysis concludes with recommendations for improvement, including continuous curriculum enhancement, comprehensive teacher training, strengthened industry collaboration, and community engagement to dispel social stigmas. These recommendations provide valuable insights for policymakers and educators to enhance the integration and effectiveness of vocational education within the NEP 2020. Overall, the findings underscore

the multifaceted nature of vocational education, with both its positive impacts and existing challenges requiring thoughtful consideration and strategic interventions.

6. Conclusion

In conclusion, this research has provided a comprehensive exploration of vocational education within the framework of the National Education Policy 2020, blending both quantitative and qualitative analyses. The study aimed to understand the perceptions, challenges, and opportunities associated with the integration of vocational education, considering the diverse perspectives of stakeholders.

Quantitatively, the findings indicate a positive sentiment towards vocational education, with participants expressing satisfaction, belief in alignment with NEP 2020 goals, and a willingness to recommend it as a valuable component of the education system. Challenges such as resource constraints and social stigma were identified, emphasizing the need for targeted interventions to address these barriers.

Qualitatively, participants shared valuable insights into the positive impacts of vocational education on students' holistic development, innovative approaches enhancing practical skills, and successful collaborations between educational institutions and industries. Challenges identified included curriculum adaptation difficulties and social stigmas, while recommendations focused on continuous improvement, teacher training, and community engagement.

Combining both analyses provides a holistic understanding of the complex landscape of vocational education. The positive perceptions and experiences underscore the potential of vocational education to contribute significantly to students' development and workforce readiness. However, challenges highlight areas for improvement, calling for ongoing efforts in resource allocation, curriculum refinement, and societal perception shifts.

In moving forward, policymakers, educators, and industry stakeholders should collaborate to address the identified challenges, capitalize on successful initiatives, and implement the recommendations provided by participants. By doing so, vocational education can evolve into a transformative force within the education system, aligning seamlessly with the goals and vision outlined in the NEP 2020. This research serves as a foundation for informed decision-making and continuous improvement in the integration and impact of vocational education, ensuring a more robust and responsive educational landscape.

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