Skill Development in Punjab: Challenges and Way Forward

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Abstract

Skills and knowledge are integral to human capital investment and contribute significantly to socioeconomic growth and development. Skill development among youth makes a substantial contribution to occupational safety, enhanced productivity, and improved living standards and financial security. It also fosters social capital while strengthening the capacities and knowledge base of governing bodies, informal sector organizations, and rural communities. Integrating technical elements into the education system helps address the demand–supply mismatch in the labor market. Training programs significantly enhance individual competencies and foundational skills. This paper analyzes the major dimensions of skill development in Punjab, with a primary emphasis on manpower requirements, prevailing challenges, and government initiatives and policies implemented in the state.

Keyword: *Skills, Skill gap, Skill Development, Schemes, Training*

1. Introduction

The human capital perspective on education highlights that education enhances individuals' skills and capabilities, contributing to increased productivity within the workforce. This approach also emphasizes that by enhancing workers' skills and efficiency, education is instrumental in strengthening the nation's manufacturing sector. Human capital development not only raises labor productivity but also supports economic growth by enabling workers to enter the labor market more effectively and improve their occupational mobility. As a result, workers are better positioned to move into sectors and occupations with higher productivity. Investment in human capital further encourages entrepreneurship and promotes technological progress by enhancing workers' ability to utilize, adapt, and apply prior knowledge and production processes, along with integrating recent innovations (Middleton et al., 1993). In the context of the ongoing demographic transition, it is projected that by 2030 India's workforce will exceed that of China and is expected to reach its peak around 2050. This demographic trend offers a substantial and prolonged opportunity, particularly for today's younger generation, who intend to join the labor force during the next twenty years. This period is crucial for achieving India's goal of developing a knowledge-driven economy (Mehdi and Chaudhry, 2015).

Unfortunately, the share of formally trained workers in India remains relatively small. According to the Labour Bureau survey for 2013–14, only 6.8 per cent of the population aged 15 years or older had completed or were undergoing technical training. Among them, just 28 per cent had obtained formal technical training, while 4 per cent had received informal training. By comparison, many other countries had a much higher proportion of formally skilled workers (FICCI, 2015). In the absence of strong measures to tackle key supply-side constraints, both quantitative and qualitative skill gaps are likely to widen further. A skill gap assessment carried out by the National Skill Development Corporation (NSDC) during 2010–2014 estimated that by 2022, there would be an additional net demand for about 109.73 million skilled workers across 24 key sectors (KPMG Report, 2013).

It is further argued that skill gaps can be mitigated through vocational education, technical training, and specialized skill development programs. However, despite the presence of multiple initiatives, significant scope remains to bridge the divide between theoretical learning and practical, hands-on skills. The Government of India has launched major schemes such as *Make in India*, *Atmanirbhar Bharat*, and has set the objective of attaining a five trillion-dollar GDP, all of which require coordinated and collaborative efforts to succeed (Patil and Charantimath, 2021). Skill development programs in India largely depend on public funding and public–private partnerships. The sector is confronted with issues such as high capital intensity and low investment returns, which make it relatively rigid and under-invested. These constraints limit the expansion and effectiveness of skill development efforts across the country.

2. Literature Review

Mehrotra et al. (2013) argued that the lack of an efficient workforce could lead to the large-scale substitution of labor by machines. This shift would reduce the employment elasticity of output, resulting in widespread unemployment. In response to this challenge, the National Skill Development Policy (NSDP) set a

goal of training nearly 500 million individuals by 2022.

The study conducted by KPMG Advisory Services Pvt. Ltd. (2013) revealed that, in addition to gender and social aspects of skill development in Punjab, significant regional disparities existed in labor force supply. Skill formation was heavily concentrated in four districts—Gurdaspur, Jalandhar, Ludhiana, and Amritsar—which together contributed nearly half of the total skill supply. The study highlighted the necessity of providing targeted attention to less developed regions such as Faridkot, Fazilka, Muktsar, and Mansa.

Chowdhury (2014) stressed that strong coordination among government agencies, training providers, and NGOs is important for enhancing the efficacy and reach of skill development initiatives. Consequently, addressing skill gaps and labor market mismatches is essential. Vocational and Technical Education (VTE) institutions, especially polytechnic institutes, can play a key role in reducing these imbalances.

Bennell (1999) examined the importance of training for economically disadvantaged and socially marginalized groups in developing countries. The study affirmed that skill development for low-income populations should be integrated into community-based development efforts. It further suggested that the International Labour Organization (ILO) should promote a well-informed and balanced dialogue on skill development for socially excluded and economically weaker sections, and reassess its programs and resources to ensure effective support is provided to member states in formulating and implementing pro-poor training strategies at the national level.

Highlighting its role in skill development, Bhurtel (2015) noted that TVET empowers individuals by providing targeted training in specialized areas, enabling them to secure improved employment opportunities or pursue entrepreneurship. Mehrotra and Ghosh (2013) argued for the establishment of a national training fund in India, citing the growing demand for skill development throughout the country.

Ziderman (2016) observed that essential reforms for skill development include the optimal diversification of funding sources—such as training levies and payroll-based cost-sharing—enhancing competition between public and private training providers, creating private training marketplaces, promoting higher-quality training, and establishing national training funds.

Bakar and Hanafi (2007) emphasized that the technical education system effectively enhances a range of employability skills and observed a differential impact on skill development between male and female students.

Sanghi and Sarija (2015) examined the crucial connections between productivity, employment opportunities, and skill development in Indian industries. Their study revealed that enhanced skills contribute to increased productivity across different population segments, establishing a direct link between skill development and poverty alleviation.

UNESCO (2007) emphasized that collaboration should be promoted through shared interests and voluntary participation, encouraging teamwork among local communities, government agencies, employers, and TVET institutions to promote skill development initiatives.

3. Research Design and Methodology

The data for this research were obtained from the Ministry of Human Resource Development (MHRD), now known as the Ministry of Education, the Economic and Statistical Organization (ESO), the Punjab State Board of Technical Education and Industrial Training (PSBTE), Chandigarh, research papers, government departments websites, and reports from other organizations.

4. Skill Development in Punjab

The importance of skill development has grown in the 21st century, with nations devoting greater attention to it. The Government of Punjab has intensified its focus on skill development to improve the employability of its residents. Unemployed young people are being guided to choose skills that match their educational backgrounds and aptitudes, thereby enhancing their opportunities for better livelihoods. The state has prioritized fostering coordination among different departments to ensure the effective delivery of skills-based training (Kahlon, 2017).

A significant shortage of skilled labor exists globally, and Punjab has the potential to bridge this gap by supplying high-quality, industry-specific skilled personnel to meet international labor market demands. The Government of Punjab has developed a structured system for skill training, actively engaging various industries. Industrial enterprises have been invited to set up Skill Centres and Centres of Excellence within their facilities to provide training aligned with industry needs. Moreover, international organizations have been encouraged to establish Skill Centres in collaboration with the Punjab government. Under this partnership, foreign entities will train facilitators, while the Punjab government will supply the necessary infrastructure. Agreements for this initiative have already been signed with Canadian provinces and the United Kingdom (UK).

The Government of Punjab is currently experiencing a shortage of educated and technically trained professionals for the industrial sector. As a result, industries in the state face a deficit of skilled technical personnel. To address this issue, industries are increasingly willing to collaborate with and actively engage in the existing educational system to enhance workforce skills. Various training programs have been initiated within the industry, aimed at upgrading workers' skills and expertise to address the specific requirements of their respective sectors.

In 2009, the National Skill Development Policy (NSDP) was launched with the ambitious goal of equipping 500 million people with skills by 2022, acknowledging the significant benefits of skill development. As part of this national effort, Punjab set a target to train over two lakh individuals. To foster skill development and improve job opportunities, the Punjab Skill Development Mission (PSDM) was established in alignment with the NSDP through a government notification dated 2 September 2014.

The 'Skills on Wheels Programme' is a unique initiative intended to promote skill development by providing program information and enhancing youth capabilities. A fully equipped mobile unit, based on a bus, delivers technical training to skilled individuals and travels across the state to reach various communities. 'Project Harvest' is another initiative aimed at developing students' skills in Punjab to enhance their international competitiveness. Funded by the UK and Canadian governments, it targets training for 15,000 individuals in areas such as air conditioning, hospitality, refrigeration, heating, automotive, construction, plumbing, and welding. Additionally, in collaboration with the Japanese Embassy, the PSDM has introduced an entry-level Japanese language course (N5 proficiency) to help young people in Punjab gain language skills and improve their prospects for international employment.

The Government of Punjab has introduced multiple programs to improve skill development among youth. In partnership with Punjab Infotech, engineering colleges in the state have introduced the NAC-Tech test, allowing students to apply for positions in multinational companies via the NASSCOM platform. This initiative helps bridge the gap between academic learning and workforce readiness. Additionally, Punjab Infotech and Rayat Bahra University have signed a Memorandum of Understanding (MoU) to establish skill and training schools, offering technology-focused training to engineers and diploma holders to improve their employability.

As India progresses toward transforming into a knowledge-driven nation, skill development fulfills an important role in improving employability, people productivity, and overall performance. Integrating skill development into the education system is essential, as general education alone is insufficient for securing employment. A skilled workforce across every level is vital for promoting inclusive growth. The adoption of technical education within the educational framework helps reduce the demand-supply mismatch in the labor market. Training enables workers to perform their tasks more efficiently, thereby promoting to economic growth and development. The skills sector in the state demonstrates considerable variety with respect to implementing new programs, schemes, community-focussed initiatives, strengthening of institutions, and infrastructure improvements (Pathak and Brar, 2018).

The government has initiated multiple programs to develop skill development in Punjab. While the aims of these programs are commendable, their effective implementation faces several challenges. Government authorities have been actively involved in executing various skill training projects funded by both the state and central governments. A key initiative is the National Skills Qualification Framework (NSQF) program, introduced in 2012 (KPMG Report, 2013). The Government of Punjab has prioritized skill development to enhance the employability of its people. In conformity with the National Skill Development Policy (NSDP) of 2009, Punjab established the Punjab Skill Development Mission (PSDM) to institutionalize skill development within the state. Targeted policies have been formulated to enhance technical training, skill development, and support private training providers. The PSDM, operating at block, district, and state levels, assumes a central role in dealing with skill-related challenges.

Additionally, weak links between education and the placement of skilled workers remain a major challenge for the state's skill development system (Saini, 2015). Nevertheless, India's skill development ecosystem continues to face multiple challenges related to public perception, awareness, training quality, financial constraints, and the scalability of programs. Skill development programs in India largely depend on government funding and public–private partnerships. The sector faces challenges such as high capital requirements and low returns on investment, which make it relatively inflexible and underfunded.

The Punjab government recognizes the critical function of skill development in enhancing employability. The state has emerged as a key contributor to India's human capital, backed by a robust database highlighting its strong commitment to education, diverse skill sets, and a versatile workforce spanning various age groups. These attributes make Punjab an attractive destination for industries seeking highly skilled and adaptable professionals. A notable feature of Punjab's workforce is its balanced age distribution, with 29.98 per cent of the male employable population and 34.43 per cent of the female employable population. This balanced profile reflects a sustained emphasis on education and skill development across age groups, guaranteeing that human resources remain aligned with the emerging requirements of the labor market (India Skills Report, 2024).

4.1. Punjab Skill Development Mission

The Punjab Skill Development Mission (PSDM) offers free, employment-oriented skill development training to aspiring learners aged 18 to 35 across the state. These programs are available through state- and centrally-funded schemes and lead to nationally recognized certifications. PSDM partners with accredited training providers to deliver these programs in both rural and urban areas across Punjab. The primary aim of PSDM is to narrow the mismatch between the skilled workforce needed by industries and the available pool of talented unemployed

youth. It assists individuals in selecting courses that align with their qualifications, competencies, and existing skill levels. The mission aims to offer opportunities to all segments of society, including residents of rural, urban, and border areas, providing a mix of traditional and modern courses to ensure comprehensive coverage across the state.

The PSDM is structured to align and streamline all skill development schemes within the state. Multiple government departments implement skill development programs, each following its own approach. PSDM provides strategic direction and operational support to ensure these initiatives are effectively coordinated and yield tangible results. Working alongside the Department of Employment Generation and Training (DEGT), PSDM shares the goal of generating more employment opportunities for the population. To guide the implementation of programs under both organizations, it is essential to assess the skill demand–supply gaps across different regions of Punjab. Additionally, forecasting work- and sector-specific requirements across various industries is necessary to facilitate effective job placement for the state's youth (PSDM Report, 2015-16).

The PSDM actively partners with a broad spectrum of organizations and stakeholders to advance skill development, including corporations, educational institutions, recruitment agencies, career counselors, employment portals, and employment exchanges. These collaborations create a knowledge-sharing ecosystem that supports skill enhancement. By leveraging this comprehensive network, PSDM provides placement assistance and career guidance to the people of Punjab, ensuring that individuals participating in skill training programs have access to job opportunities and professional counseling.

4.1.1 Some Schemes Under the PSDM

Skill Development Programme Promoted by Asian Development Bank

In collaboration with the Punjab Heritage and Tourism Development Board, the PSDM has launched skill enhancement programs for 2,000 participants specializing in traditional crafts like Punjabi Jutti, Phulkari, Wood Inlay Dari/Khes, Crochet, Terracotta, and Fabric Painting. Training will be conducted across multiple districts in the state, including Fatehgarh Sahib, Patiala, Sangrur, Bathinda, Hoshiarpur, Amritsar, Sri Muktsar Sahib, and S.A.S. Nagar.

Capacity Building Supported by the Border Area Development Programme

The PSDM has taken charge of the capacity-building component of the Border Area Development Program (BADP) in six districts along Punjab's international border. Skill enhancement initiatives in these areas are being implemented by NITCONS. Additionally, the C-PYTE Centres and the Border Security Force have launched training programs for individuals aspiring to work as security personnel. Complementary courses, focusing on self-employment and teaching skills, have also been organized.

Pradhan Mantri Kaushal Kendra's (PMKKs)

The Ministry of Skill Development and Entrepreneurship (MSDE) has launched multi-skill training centers with the goal of establishing one in every district across India. In Punjab, 17 Pradhan Mantri Kaushal Kendras (PMKKs) have been set up in 17 districts, excluding Hoshiarpur, Amritsar, Kapurthala, Pathankot, and Gurdaspur. These PMKKs are managed by three training organizations—M/S Dreamweaver's Pvt. Ltd, M/S Empower Pragati, and M/S ICA Edu Skills—operating within a structured framework. The centers offer industry-oriented programs designed to enhance employability. Currently, six centers are operational in Fatehgarh Sahib, Moga, SBS Nagar, SAS Nagar, Sri Muktsar Sahib, and Jalandhar, with the remaining centers expected to become functional soon. The sustainability of these centers will be supported through skill programs under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) or its successor initiatives.

The importance of skills in driving economic development is both significant and multifaceted. Skill development is essential because both nations and individuals rely on knowledge and expertise to progress. Skill training equips industries with competent and capable workers, boosting their competitiveness and generating employment opportunities for youth in Punjab. Moreover, it enables individuals to secure livelihoods, realize their potential, and attain self-reliance (Saini, 2015).

Punjab has invested substantially in advancing skill and technical training, with a particular focus during the 12th Five-Year Plan (2012–2017). The state government has proactively expanded vocational and technical training initiatives governed by the Department of Technical Education and Industrial Training (DTE&IT). The primary emphasis has been on overseeing diploma- and degree-level institutions across Punjab to accelerate skill development. Training programs and courses are regularly updated in coordination with the Confederation of Indian Industry. By 2010, the state was training around 300,000 individuals annually. The approved allocation for technical education in the Annual Plan 2012–13, totaling Rs. 5,28,100 lakhs, highlights the substantial investment in technical education and skill development (KPMG Report, 2013).

4.2 Punjab's Skill Infrastructure

Technical education worldwide is facing intense competition, and only institutions committed to excellence are likely to succeed. The 2020 National Education Policy (NEP) offers a comprehensive framework to transform technical education to fulfill the needs of a fast-changing, knowledge-driven society. The primary aim is to

develop technical education across both diploma and degree programs and to foster stronger collaborations between industry and academia to promote innovation, research, and the integration of technology into other disciplines (Naveen, 2021). Achieving these objectives requires effective collaboration among all stakeholders to enhance technical and higher education systems capable of delivering the necessary skills and competencies. The Government of Punjab has recognized skill development as a key factor in strengthening the state's economic framework.

Punjab's technical education system offers a wide range of courses in fields like technology, architecture, pharmacy, management, engineering, crafts, applied arts, and town planning. These programs are available at the bachelor's, master's, and advanced research levels and are overseen by the Ministry of Human Resource Development (MHRD). At the national level, the All India Council for Technical Education (AICTE) serves as the regulatory authority, responsible for policy formulation and the systematic development of technical education. Since 1947, the technical training system has been instrumental in producing a large pool of skilled professionals, significantly contributing to the country's scientific and industrial advancement (Ray, 2014).

The Government of Punjab has initiated the 'Ghar Ghar Rozgaar and Karobaar' program, a state-wide employment generation initiative designed to ensure that each family in Punjab has at least one gainfully employed and qualified member. Employment has become a key focus of the state's economic and social policies and planning strategies. In addition, the state introduced the *Hunar Hai Taan Kadar Hai* campaign, which promotes skill development and recognizes excellence in functional and vocational competencies. Under this initiative, the Punjab Skills Competition 2018 was organized to provide young individuals with a platform to showcase their talents and compete at the international standard (PSDM, 2015-16).

The Government of Punjab has established multidisciplinary training centers in the districts of Amritsar, Hoshiarpur, Ludhiana, and Jalandhar. Additionally, three Health Sector Skill Development Centers (HSDCs) have been launched in Patiala, Faridkot, and Amritsar. To provide vocational training to rural youth and enhance practical skills, the government has created 200 Village Skill Centers. Among these, 25 centers specifically focus on the technical training of rural girls and are recognized as Nanhi Chhaan Skill Centres, aimed at empowering young women through self-employment opportunities. On 13 November 2016, a Nanhi Chhaan Skill Center was inaugurated in the village of Salani in Fatehgarh Sahib district, and a Rural Skill Development Center was established in Gehri Mandi village in Amritsar district (PSDM, 2015-16).

Table 1: Number of Skilled and Unskilled Unemployed Applicants in Punjab: 1990-2014

Year	Unskilled Applicants	Skilled Applicants	Total
1990	1,01,811 (15.44)	5,57,439 (84.56)	6,59,250 (100)
2001	34,786 (6.48)	5,01,889 (93.52)	5,36,675 (100)
2012	27,042 (7.67)	3,25,613 (92.33)	3,52,655 (100)
2013	30,147 (7.70)	3,61,327 (92.30)	3,91,474 (100)
2014	36,490 (10.10)	3,24,809 (89.90)	3,61,299 (100)

Note: Figures in brackets refer to a percentage share of the total.
Source: ESO (2017)

Table 2: Incremental Manpower Requirement in Punjab (IMR)

	2012-17				2017-22			
Sector	Skilled	Semi-Skilled	Minimally Skilled	Total	Skilled	Semi-Skilled	Minimally Skilled	Total
Secondary	26,189	76,460	3,07,145	4,09,794	29,793	86,722	3,51,091	4,67,606
Tertiary	61,529	2,73,571	1,34,185	4,69,285	50,934	2,14,309	1,22,594	3,87,837

Note: 1. Skilled workers means those skills attained by Professional degrees (study period more than five years after Std X),
2. Semi-skilled stands for skills gathered by technical training (study period more than three years after Std X). 3. Minimally skilled group needs basic knowledge of work that requires no or minimal formal training.
Source: KPMG REPORT (2013)

Table 1 provides data on the number of skilled and unskilled job applicants in Punjab from 1990 to 2014. In 1990, there were 1,01,811 unskilled applicants and 5,57,439 skilled applicants, totaling 6,59,250. Over the years, the number of unskilled applicants generally declined, with a slight increase after 2012, reaching 36,490 in 2014. Similarly, skilled applicants decreased overall to 3,24,809, reducing the total number of applicants to 3,61,299. Table 2 presents the projected incremental manpower requirements in Punjab. Between 2012 and 2017, the

secondary sector required 26,189 skilled, 76,460 semi-skilled, and 3,07,145 minimally skilled workers. In comparison, the tertiary sector needed 61,529 skilled, 2,73,571 semi-skilled, and 1,34,185 minimally skilled workers. While the tertiary sector exhibited higher demand for skilled manpower, the secondary sector showed a considerably greater need for minimally skilled workers. Evaluating the existing training infrastructure against these manpower requirements during the Twelfth Five-Year Plan period highlights an urgent need to expand capacity, especially at the semi-skilled level, through strengthened technical education programs (refer to Table 1 and Table 2).

Technical education in Punjab has been progressing rapidly, keeping pace with international standards. However, alongside this growth, there is an increasing need to enhance the quality of learning. The commercialization of education, driven by the rise of profit-oriented institutions, has added a new dimension to the sector. This trend necessitates a careful evaluation of whether the economy is effectively absorbing graduates from these institutions into productive employment or research roles.

Estimates of the demand-supply gap underscore the need to expand participation in semi-skilled training programs and to equip the highly skilled workforce with relevant technical competencies. This is especially important given the ample job opportunities at the semi-skilled level in Punjab. Moreover, the low employability of highly skilled individuals is attributed to a mismatch between their educational qualifications and industry requirements, exacerbated by inadequate conditions in educational institutions. Addressing this issue requires targeted upskilling aligned with local industrial needs to ensure a workforce that is well-prepared for employment in the industry (KPMG Report, 2013). The Tenth Five-Year Plan highlights the requirement to integrate the technical education system as a distinct component within the secondary education framework, rather than providing it through separate institutions. This integration should also aim to strengthen the connections between vocational training and academic institutions, enabling learners to pursue upward mobility (Chattopadhyay, 2011).

A dedicated Department of Employment Generation and Training has been established to promote skill development and expand employment opportunities in Punjab. In partnership with leading corporate organizations, several industry-focused training centers have been created to equip unemployed youth with essential skills. Additionally, C-PYTE Centres have been set up at 14 locations to provide specialized training, preparing young individuals for careers in the military and paramilitary forces (Government of Punjab, 2010-11).

In his address at the 55th meeting of the National Development Council in New Delhi in 2010, the Chief Minister of Punjab, Sardar Parkash Singh Badal, stressed the importance of skill development and improving the employability of rural youth. As part of a Rs. 82 crore initiative supported by NABARD, the State Government is converting six technical institutions into multipurpose academies. Under this plan, polytechnic institutes will offer a combination of engineering courses and 10+2 education, while engineering colleges will integrate 10+2 classes alongside polytechnic programs. Furthermore, 35 Industrial Training Institutes (ITIs) are being upgraded into Centres of Excellence with support from the Government of India (GOI), with ₹80 crore allocated for this initiative during the 2010–11 financial year (Government of Punjab, 2010-11).

In Punjab, technical education is designed to provide students with a comprehensive understanding of both practical and theoretical aspects of their chosen fields. Historically, engineering has played a key role in advancing human progress, while technology, in its broader sense, has significantly shaped and influenced various cultures. Many students pursue engineering education in the state not necessarily out of genuine interest, but because it is widely accessible and perceived as a reliable route to secure, well-paying jobs. This trend underscores the need for technical institutions to focus on producing high-quality graduates. Achieving this requires enhancing the quality of training and education offered by these institutes, with an emphasis on quality assurance and continuous improvement to ensure graduates meet industry expectations and workforce standards (Raghunadhan and Sequeira, 2014).

To ensure high-quality education, the Government of Punjab plans to provide extensive training and enhance the skills of educators, institution administrators, and principals, aiming to improve teaching standards and promote student-centered learning approaches. In the 2022–23 budget speech, the Finance Minister of Punjab proposed an allocation of ₹30 crores to implement medium-term and short-term training programs in collaboration with leading agencies and organizations in India and abroad. According to the India Skills Report (2024), Punjab ranked third among all Indian states for entry-level candidates seeking internships, with 93.44 per cent actively pursuing such opportunities. This underscores the state's robust educational framework and the proactive attitude of its youth in gaining practical experience, ensuring a smooth transition from academia to industry.

Punjab has emerged as a significant contributor to India's talent pool, with data-driven evidence underscoring its strong emphasis on education, diverse skill sets, and a balanced demographic profile. The state's competitive advantage stems from the adaptability and expertise of its workforce, making it an attractive destination for industries across India in search of highly skilled, versatile, and dynamic young professionals (India Skills Report, 2024).

Punjab and Delhi are emerging as leading states with regard to the availability of critical thinking skills. Over the years, Punjab and Haryana have achieved significant progress in skill development, fostering a highly capable workforce equipped to address the emerging requirements of the future labor market. Under the Punjab

Skill Development Mission, the Larsen & Toubro (L&T) Constructions Pilakhua Construction Skills Training Institute (CSTI) offers residential training programs lasting 45 to 90 days. These programs provide specialized training in trades such as ITI Carpenter, Draftsman Civil, Fitter, Electronics, Wireman, and Plumber. Since 2015, government-led skilling initiatives have successfully trained and placed 1,18,002 candidates by 2022. Punjab's increasing focus on skill development and its improving employability ranking demonstrate the government's commitment to expanding the reach of Skill India, in line with its vision to empower the nation's workforce by 2030 (India Skills Report, 2023). Among states, Uttar Pradesh continues to lead in employability for the 22–25 age group, achieving a 94.29 per cent rate, followed by Punjab at 87.5 per cent and Kerala at 87.47 per cent (India Skills Report, 2025).

4.3 Major Challenges for Skill Development in Punjab

Several challenges hinder skill development in Punjab, as emphasized by renowned establishments such as, the Punjab Skill Development Mission, and the Department of Planning, Government of Punjab. A critical issue is the discrepancy between the demand for skills and their supply. Regional imbalances also pose significant challenges to effective skill development (Verma, 2016). Many trainers are not updated with current industry-relevant skills, resulting in training outcomes that fall short of the desired quality. Continuous non-revision of curricula has led to a gap between industrial expectations and the competencies of technical institutes graduates, making employment difficult. High dropout rates after school education contribute to low enrollments in higher education, with districts such as Muktsar, Faridkot, and Mansa experiencing particularly high dropout levels starting at the school stage (Ramaswamy et al., 2013). Vocational courses often suffer from a low reputation and limited economic returns for those acquiring such skills (Verma, 2016). Additionally, weak links between education and the placement of skilled workers remain a major challenge for the state's skill development system (Saini, 2015). India's skill development ecosystem continues to face multiple challenges related to public perception, awareness, training quality, financial constraints, and the scalability of programs. Skill development programs in India largely depend on government funding and public–private partnerships. The sector faces challenges such as high capital requirements and low returns on investment, which make it relatively inflexible and underfunded.

4.4 Initiatives taken by Government of Punjab

The various policies designed to achieve predetermined objectives have ultimately been implemented through a range of specialized initiatives. Some of the notable programs initiated for this purpose include:

1. Craftsman Training Scheme;
2. Centre of Excellence Scheme;
3. Hi-Tech Training Scheme;
4. Skill Development Initiative Scheme;
5. Centres for Training and Employment of Punjab Youth;
6. Deen Dayal Upadhyaya Grameen Kaushalya Yojana;
7. Employability through Skill Training and Placement;
8. Building and other Constitution Workers (BoCW).

5. Conclusion

The present study underscores the key aspects of the state's skill development sector. It demonstrates considerable diversity in the implementation of recent projects, initiatives, community-based programs, improvements in institutions, and infrastructure enhancement. In spite of these efforts, various shortcomings and problems persist in improving the employability of graduates. The discrepancy between the demand and supply of semi-skilled personnel remains substantial. A large number of unfilled job vacancies limit the optimal deployment of available infrastructure. The secondary sector, particularly MSMEs, will play a crucial role in employing skilled, semi-skilled, and minimally skilled individuals going forward. Reports have also highlighted a lack of required expertise for certain jobs (Chenoy et al., 2015). Skill training serves as a crucial linkage of technical knowledge, practical experience, soft skills, and relevant information, guiding individuals toward productive employment. The state must develop and implement suitable models to ensure an adequate supply of skilled personnel to the industrial sector, combining increased public investment with effective governance structures.

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