JOB CRISIS; MERGING THE GAP BETWEEN SCHOOL AND UNIVERSITY EDUCATION AND VOCATIONAL EDUCATION

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ABSTRACT

While the Right to Education Act of 2002 in India guarantees free and compulsory education of all children in the age group of six to fourteen years, such education does not necessarily lead to employment. In rural areas, states with poor Gross Domestic Products (GDP) tend to have higher school dropout rates due to the lack of quality education. According to Niti Aayog, the dropout rate in 2020-21 at the secondary level in Bihar (India’s poorest state) was 21.4 percent since school education does not guarantee employment. In fact, 25.5% of youth between the ages 15 - 29 are unemployed-this does not take into consideration the types of jobs taken up by them, such as an unproductive primary sector, thus serving as a research gap. This unproductive work results in lower income for the rural youth, amplifying the issue of poverty. This paper elaborates on the flaws of the current Technical and Vocational Education (TVET) System utilizing a case study and using comparative analysis with countries such as Norway and Germany with successful TVETs.

Methodology

The methodological approach adopted for this paper includes a detailed textual analysis of existing policies of Technical and Vocational Education & Training (TVET) and university programmes in India. Additionally, the paper refers to the University Grants Commission (UGC) guidelines for the introduction of the Bachelor of Vocation Programme in universities and colleges under the national skills qualifications framework (NSQF). Building upon the need of not only imparting skills desired by firms in a region but also giving the students the right to self-determination for self-employment choices, this paper also looks at the German Dual System of vocational education as well as the Norwegian System, comparing the Indian, German, and Norwegian VET systems and thus finds an effective way to incorporate various elements of the
Norwegian and German VET systems (focusing on an institution-firm relationship) into the Indian Vocational Education System.

However, there is a lack of emphasis on region-wise research demand and supply of the labour market, and there is also a lack of literature regarding the same. It is imperative to take into cognizance the multitude needs of distinct markets in different regions of India, where the consumer-base and the available resources are very disparate. Therefore, this paper references the Census of India to comprehend the employment patterns in the states of India in order to create an effective decentralised system of vocational education.

**Literature Review**

Using Mathur et. al., 2022. *Technical and Vocational Education and Training: Examining Changing Conditions in India*, this research paper looks at the various problems associated with Vocational Education in India with special emphasis on a Decentralised System, where the curriculum is based on the demands of the firm in a particular state, which can be done through an institution-firm relationship similar to German VET, using a model similar to the advisory committees at a regional level to establish a comprehensive productive cooperation and collaboration between schools/universities and industries.

Also, the policy paper written by Matthias Pilz and Julia Regel will be an essential source for this paper to examine different measures and ways to incorporate vocational education into school and university education with special emphasis on various schemes that have already been put in place by the Government, like the Craftsman Training Scheme and the Apprenticeship Training Scheme, which incorporate various elements of public-private partnerships. This paper, furthermore, observes the need for public-private partnerships yet again, and suggests various methods to do so, akin to the German System of Vocational Training.

“Labour market outcome for formal vocational education and training in India: Safety net and beyond” written by Ahmed T. looks at how VET is an essential safety net for the labour market in India, contributing to wages. It, most importantly, scrutinizes the high rate of unemployment post Vocational Education: a testament to the low quality and shallow ambit of the Indian system, something this study further builds upon through a case study.

This study uses the case study of fishery industry in West Bengal to illustrate the urgent need and lack of awareness and dissemination of information which has resulted in abysmal state of affairs in the fisheries sector. Unfortunately, this issue is often overlooked in mainstream literature despite its significance.
However, in the above-mentioned papers lies a gap, given a large portion of the Indian economy is dependent on agriculture and allied fields, there are hardly any vocational training programs on them.

As articulately put by Amit Mitra in the 2002 Working Paper of the International Labour Office on “Training and Skill Formation for Decent Work in the Informal Sector: Case Studies from South India”, there India faces issues of diversification of “vocationalisation”, thus being inflexible and not taking into account the regional market diversity. This paper seeks to further that idea by analysing the case of Bengali fisheries, serving as a juxtapose against the Norwegian and German systems.

Regional Employment Diversity

Due to a variety of resources available in different parts of the country, there is a striking divergence in the various job markets in the country, for instance the availability of non-farm jobs [Bhattacharya et. Al, 2018].

Table 1: Some of India’s most populated states along with the Predominant Occupations

<table>
<thead>
<tr>
<th>STATE</th>
<th>OCCUPATIONS</th>
</tr>
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<tbody>
<tr>
<td>Kashmir</td>
<td>Horticulture (Apples, Apricots, etc.); Manufacturing and rural crafts (furniture, handloom industry)</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>Agriculture (Rice, Wheat, Sugarcane), Manufacturing (Aluminium Plants, Sugarcane Industry)</td>
</tr>
<tr>
<td>Delhi</td>
<td>Service Sector: Finance, IT, education, etc.</td>
</tr>
<tr>
<td>West Bengal</td>
<td>Agriculture (pulses, oil seeds, rice, jute), Fisheries (In-land and Bay of Bengal), Industry (steal, leather)</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Agriculture (jowar, bajra, rice), service sector (transport, real estate, stock exchange), Industry (cotton, chemicals, electricals)</td>
</tr>
<tr>
<td>Karnataka</td>
<td>Agriculture (coffee, fruits), service sector (IT, tourism), Industry (IT, Hindustan Aeronautics Limited)</td>
</tr>
</tbody>
</table>

As is evident from the table above, not only do occupations defer state-to-state, but also district-to-district, with urban areas specialising in specific aspects of the service sector while the rural areas focus predominantly on agriculture, growing crops based on the geography of the region. One example of this evident dichotomy is Maharashtra, where in rural areas, coffee is one of the main crops grown while the urban city of Bengaluru serves as the Information Technology hub of India, serving as one of the main sources of IT and software services.
Considering the variety of job markets arising out of the sheer diversity of resources across India, it is rather impractical to have one centralised vocational education curriculum, focusing on a limited number of subjects and mainly under the control of the central government.

**Figure 1: Distribution of farm and non-farm jobs in**

Under the New Education Policy (NEP), special emphasis has been placed upon integration of vocational education with general academic education of secondary and higher secondary levels to generate employable and educated human resources for the diverse sectors of the Indian economy as well as the global market [Ministry of Education]. While the policy is, indeed, a step towards better opportunities for those with VET education, there is lack of deconcentration of the “categories” or “types” of subjects students can opt to learn. Instead, the current status quo merely supports a federalism in the “management” of existing centralised system of VET, restricted to centralized subjects. There is slow growth in agricultural instruction, coupled with acute shortage of skilled instructors, limited funding, lack of infrastructure, and the prevalence of societal taboo against vocational education [Naagi et. Al, 2023].
Case Study: The Fishing Sector in West Bengal

According to the Indian Census 2011, West Bengal has a population of 1.2 million people engaged in the fishing sector, which is 2.3 percent of the total population of the state. In fiscal year 2020, West Bengal accounted for about 243 billion rupees in gross value added (GVA) from fish products to agriculture across India. The total GVA from the state accounted for more than 15 percent of all fish products across the country [Keelery, 2023]. Fishing contributed more than 1.5 trillion Rupees in GVA to the Indian economy that year. Furthermore, in fiscal year 2022, West Bengal produced 1.84 million metric tons of fish, which was the same as the previous year. The production increased from around 1.4 million metric tons in financial year 2009 in the coastal state [Keelery, 2023]. The fishing sector serves as a relevant case study to study lack of TVET in the district and sub-district levels despite the large population engaged in the occupation.

Figure 2: Fish Production in West Bengal 2009-2022

Fish production volume across West Bengal in India from financial year 2009 to 2022 (in 1,000 metric tons)

[Source: Statista]
Carp aquaculture plays an important role in the socio-economic structure of both the rural economy and the national economy, as it contributes to poverty alleviation [Abraham et al., 2010], foreign exchange [FAO 1999], and above all, food security. In areas of high population growth, megacities like Kolkata are increasingly dependent on fish from aquaculture, as it is a major source of dietary proteins and essential minerals. Carp aquaculture accounts for 85% of India’s total freshwater aquaculture production (Mohanta et al., 2006). Urban population growth has outpaced that of rural areas, with the urban population increasing from 4689 in 1991 to 5161 in 2000 [Census of India 1991–2001, Singh, Asgher 2005].

Notwithstanding the contributions of Bengali fisheries to the Indian economy, there is a lack of optimum use of existing resources, with insufficient technology, leading to decrease in yields. For instance, due to the practice of trawling, wherein 14,000 trawlers use bottom trawl nets less than 90mm in diameter to catch fish, crabs, and shrimps living at the bottom of the sea floor, the seafloor of the Bay of Bengal gets damaged and destroyed; everything coming in the path of the trawlers including seagrasses, coral reefs and rock gardens get swept away, resulting in the destruction of the aquatic ecosystems and thus a decrease in the reproductive capacity of fish [Stiles et. Al, 2010]. The trawler owners are ignorant and lack knowledge as far as the ecological impacts and in the longer run commercial effects go [Datta, 2018]. Further, according to a study conducted by the Department of Zoology of the University of Kalyani, West Bengal, the study of a sample of 240 families in the River Churni in 2012 revealed that illiteracy was one of the predominant issues, with 34.16% of the respondents being illiterate, and dire socio-economic conditions, with monthly income of majority of the families being Rs. 2500 to Rs. 5000.

Thus, lack of awareness regarding the environmental impacts of various fishing methods coupled with an absence of modern technical gadgets for fishing caused due to the economic condition of fishermen is causing not only unsustainable utility of aquaculture resources but is affecting the livelihoods of millions of existing fishermen. Thus, an insufficient vocational education in the fishing sector is a necessary means of educating fishermen about sustainable and productive methods of fishing.

However, as eloquently stated in an ILO report, TVET doesn’t have a good track record in India, especially in terms of organisation and flexibility; vocational education is far removed from contexts of social, cultural, market, and local significance.

Many students who pursue technical/vocational education are unlikely to find the full-time wage jobs they are looking for. The unemployment rate among educated youth was 14.7 percent for those who were educated up to the secondary level and up to 23.7 percent (for urban areas) among those with any type of technical education[GOI 2001 p.2.18].In most of the rural areas, elementary education is not available, let alone any kind of vocational education. Some efforts
are being made to develop such facilities, but unfortunately, they are not achieving much. As illustrated above, for example, there is a lack of vocational facilities for the fishing sector, a profession endemic to coastal areas in West Bengal, differing from the distinct socio-cultural and geographical contexts of the diverse regions of India.

There is little or no support for those who want to continue to live and work in rural areas, and this leads them to enter the urban informal sector due to skills shortages [Singh 1999, p. 171]. This is evident through the fact that due to economic marginalisation of fishermen, many of them choose to be urban labourers, yet again leading to a decline in the fishing sector [Keelery, 23].

Moreover, in the river-side villages of Churni River for instance, there exist many occupations coming under the informal sector comprising of small businesses, establishment workers (paid and unpaid), independent workers, and casual workers (like rickshaw pulling and contract labouring). Due to various factors like disorganization, limited resources, poverty, irregular working hours, and illiteracy, there is a massive restriction of potential of retraining. Thus, it is imperative to take into account the values and traditions of diverse peoples when creating a curriculum for vocational education.

Norwegian System

Now considering the case of Norway: Norway follows a 2+2 model system of VET Fishing Schools, consisting of two years of education in upper secondary school. Following this is a two-year apprenticeship training and on-ground work in a training enterprise (an aquaculture-related commercial enterprise) or public institution [Utdannings-direktoratet, 2020]. Over the course of two years, a VET student is given an introduction to the field and an opportunity to specialise in a particular skill. It comprises of common core subjects like English, Norwegian, Mathematics, etc. along with programme subjects specific to the chosen field/skill/trade. The first year incorporates a general introduction, while the second year becomes more precise, as students make a decision about their future field of work. In this kind of system, the students are given the option to explore a particular trade and develop their skills in an efficient manner. In Norway, there is a region-wise i.e., a decentralized system of vocational training, with the institutions in the Northern region having notable emphasis on the natural resources of a certain area.

In Norwegian fishery schools, students learn about the physiological characteristics, including the various mechanisms in fish; ecological research and value chains, understanding the population parameters and the concept of “fishery model”, i.e., stock assessment; marine resource management and efficient and sustainable ways of fishing; resource economics, future
evaluation, and cost-benefit calculation; and institutionalisation of aquaculture, wherein methods of instrumentation like “Marine Protected Areas” are discussed (Arctic University of Norway).

In an impoverished state like West Bengal, with 72% of the people in the state living in rural areas and 27% of the total state population living under the poverty line (Hindustan Times, 2021), there exists a lack of resources to invest in a decentralized programme, needing to account for costs of teachers, technology, and infrastructure. Considering the fact that the central government has a greater role in setting national standards for vocational education and is responsible for providing funds for the same, it is crucial that the National Council for Vocational Education (NCVET) cooperates with different states to create a specialised curriculum for a particular state. Furthermore, it is vital that the central government, putting aside political contentions, provide the necessary funds for a technicalized VET in states like West Bengal. Considering the deplorable state of the fishing industry in India, there must also be an investment in fishing infrastructure and technology. Although there exists the West Bengal University of Animal and Fishery Sciences (WBUAS) in Kolkata, it is located far away from the rural areas where the fishing is actually conducted, and the populace involved are either unaware or lack the resources to attend such institutions. A solution to this problem is to establish fishery institutions in such areas and to have professors from the Faculty of Fisheries of WBUAS to come to such institutions and conduct training programs, teaching the students about various topics like resourceful methods for conducting mariculture. Apprenticeship in such training programs can be achieved through the Department of Fisheries, Government of West Bengal, with BENFISH, the apex of the Fishermen’s Cooperative Society leading 19 Central Cooperatives and 206 Primary Fishermen’s Cooperative Societies (Dept. of Fisheries, West Bengal), providing effective manpower for such programs, thus invigorating eco-friendly pisciculture activities in inland and marine fisheries’ sector for increasing the Gross Value Added.

**Issues with existing VET in India**

As encapsulated above, there is a lack of regionalization of Vocational Education and ignorance of local cultures and identities when drafting curricula for such education. This homogenisation of skills, whose demand and utility differs throughout the multitude socio-cultural contexts of India, is a testament to the ineffectuality of such a system.

Present-day approaches to training in India are moulded to meet the demands of the manufacturing sectors (ILO). Vocational education is associated with technical training that is catered towards the formal sector. Moreover, a colonial legacy precluded the transformation of the VET system into a localised one [Singh, 1999]. The introduction of the English Education Act, 1835 led to the furtherance of English Education in India, contributing to the marginalisation of traditional Indian vocational education [Jana et. Al, 2021]. The colonial
system replaced the *pathshalah* system, set up by the local community with Gurus teaching a class of not more than 20 students. This structure was very flexible, since there was no fixed fee, no separate classroom or school building, no regular timetable. Most importantly, the fee was based on the income of parents (a progressive fee system) with the rich having to pay more than the poor. The guru decided the curriculum in concurrence with the students’ needs and interacted separately with groups of children at different levels of learning [Adam, 1835].

Therefore, in the debate between Anglicists (supporting British education) and Orientalists (advocating for the use of Oriental languages in education), the Orientalists were defeated, with the traditional system being undermined and thus abolished.

As illustrated in the previous section, the informal sector consisting of small-scale enterprises, paid and unpaid establishment workers, and casual workers need to develop knowledge of various career options and choices, and there is a need for learning managerial skills besides the technical skills, as well as the frequent upgradation of access to information (ILO, 2002).

It is essential for “learning on the job” or apprenticeship to be coupled with modern technical training. In India, majority of the workforce develops their skillset through apprenticeship which merely provides them with rudimentary skills and fails to familiarise workers with constantly growing technologies (Singh, 1992, p.126). Time and financial constraints often impede workers in both formal and informal industries from obtaining additional training, even where such training facilities are available. In the manufacturing industry, domestic forms of training may suffice for the adaptation of technology to basic manufacturing and labour-intensive activities, however, this does not necessarily lead to more efficient production or increased market competitiveness (ILO, 2002). Therefore, contemporary technical training needs to complement indigenous work techniques and apprenticeship (ILO, 2002).

Apart from the manufacturing sector, considering the example of the Churni riverside in the previous section with several independent workers like rickshaw pullers, they are highly unorganised and are not operating from fixed locations (ILO, 2002). With irregular working hours, limited resources to participate in training programmes, and rampant poverty and illiteracy serves as an obstacle to “learning”.

Indian system of education lacks another fundamental principle, which is the Capabilities Approach, an idea coined by Amartya Sen and Jean Drèze. This approach is characterized by its decision to emphasize the moral importance of individuals' capacity to attain the quality of life they have a right to aspire to. In the Capability Approach, the focus is placed directly on the level of quality of life an individual is capable of achieving. This quality is examined in the context of the fundamental concepts of 'functioning' and 'capability'. Functioning is a state of 'being and
doing', such as being adequately nourished, having a place to live, etc., whereas 'capability' is a set of 'valuable' functionings that an individual has access to. Therefore, a person's capability is the effective freedom they have to select between different 'functioning combinations' – between different 'types of life' – that they have a reason to value. Thus, in order to meet the needs of local development, vocational education must be based on a comprehensive understanding of the competencies that informal sector workers desire, need and use; the social, economic and cultural conditions in which they operate and how they manage them; and the necessary skills, capabilities and attitudes and values to maintain their livelihood strategies. Furthermore, the concept of learning must focus on the capacity to transition between occupations, to learn and to adjust rapidly to changing conditions. It is essential to understand the livelihood strategies that are applicable in particular social and cultural contexts, broken down by caste, ethnicity, class and sex, and labour market conditions if a significant reorientation of training and skill building is to be achieved.

To apply Sen’s approach, it is essential to view training as an element of empowerment, rather than solely as a means of employment. For example, in a self-help organisation or network, such training would involve learning not only in the production process, but also through other external means such as ‘learning by negotiation’ and ‘searching for opportunities’. Learning would involve becoming aware of the capability of a network or group of enterprises to address problems and gaining the necessary skills to implement solutions. Furthermore, the training would necessitate the development of the ability to transition from one occupation to another, in order to gain the freedom to make decisions without forfeiting one's status. Ultimately, the training would require the freedom to expand, to choose a career and to develop it. This paradigm shift from employment training to training for empowerment is closely related to the concept of decent work. (ILO)

A Parallel Comparison with Norway and Germany

Norway has a decentralised system of vocational education as already highlighted above. Furthermore, one chief difference between Indian VET and VET in Norway and Germany is its perception; in India, Vocational Education is often perceived as a “second-class” option, surrounded by the belief that it is only for those who aren’t academically inclined. This, paired with the lack of awareness of such programs and low quality of education (as highlighted in the previous section) makes VET redundant in skill development. On the other hand, Germany’s dual system of vocational education, combining classroom and business, theory and practice, and the involvement of private sector results in increased incentivisation of vocational education, increasing incentives for firms offering vocational education by 700 million euros, thus encouraging more companies to participate in vocational training (Reuters, 2017). In Norway, there is national and regional cooperation between educational institutions and social and
commercial partners, ensuring that vocational education is acquainted with the dynamic and ever-changing nature of the labour market (Cedefop, 2019). Therefore, over half of the Norwegian youth cohorts enter VET programs in the upper secondary level, making it evident that Vocational Education is seen as desirable (Mogstad et. Al, 2022).

Moreover, as stated by Mehrotra et. Al (2013), there is a lack of public-private partnerships between firms and educational systems that forms the bulwark of the German system, being one of the main characteristics leading to its success. The German dual system, which is highly desired in the Indian context, is characterized by a partnership between the government and business to share the costs of vocational education and training (VET). The private sector is responsible for almost four fifths of the total VET cost in Germany, which should be a valuable lesson for private businesses in India. To attract private investment in the training industry, the government should establish the necessary institutional and legal governance structures (Mehrotra et. Al, 2013). This has already been done in the form of measures taken by the Federation of India Chamber of Commerce (FicCI) and by individual firms such as Tata Motors, who have already established many Industrial Training Institutions (ITIs) and are interested in establishing more. It is essential that industries and their associations are encouraged to assist in revamping teaching materials, practical training, and occupational standards to meet the needs of their workforce. The local industry must make a four-pronged approach to address the shortage of teachers/trainers with practical industry experience in vocational school courses and ITIs. Additionally, the central and state must actively support local industry.

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