Abstract: There is a significant role of vocational education in reducing unemployment, particularly in the context of Industry 4.0. The study has taken into account various literature reviews to understand the vocational education and its impact on unemployment, with special reference to Skilled in Odisha Program. Vocational education provides students with the skills and knowledge they need to succeed in the modern job market. In India, the Skilled in Odisha program is a state government-led initiative aimed at improving the quality of vocational training and education. This program has had a positive impact on the state’s ITIs, leading to higher enrolment and national recognition for their quality. The program has also helped bridge the employability skill gap, preparing students for the jobs of the future. As Industry 4.0 continues to transform the job market, vocational education and programs like Skilled in Odisha will become increasingly important in ensuring employability and reducing unemployment.

1. Introduction

Employability is a major concern in today’s time, as highlighted in recent publications (e.g., Minda, 2021). The International Labour Organization (ILO) also reports a high unemployment rate in many countries (ILO, 2020). To address this issue, the Indian government has launched several programs, such as Skilled in India and Skilled in Odisha, to reduce unemployment among youths, particularly those who are kinesthetic learners or have dropped out of education due to family concerns. Women section constitutes significant part work force in India, and it is significant to mention that they are less expert possessing low dexterity in handling the digital technology that seizes their opportunities and potential to give best output in the digital era (Priyabadini, 2022). Thus, skill development programme and policy becomes quite important to rid over the problem.

In the context of Odisha, a recent study has analyzed the circumstances regarding Industrial Training Institutes (ITIs) and the Skilled in Odisha mission (Sahoo et al., 2022). The government of Odisha has invested heavily in capacity building of trainers, infrastructure, and setting up new ITIs, as well as advanced skill training institutes like the World Skill Center. The mission has also partnered with private organizations like TATA STRIVE to enhance the employability of students, Auto Desk & Microsoft for Digital Skilling.

Despite the efforts to provide short-term and long-term training, the study reveals that employment rates among ITI graduates in Odisha still need to improve. Therefore, the study recommends that the state machinery should identify other employability skill gaps with respect to Industry 4.0.

The overall skill development programme in the state of Odisha has been able to make a mark nationally,
with Odisha winning several prizes in national and world skill competitions. The program also demonstrates the vision of higher leadership in making Odisha a hub of skilling. However, continuous efforts are needed to improve the employability of ITI graduates.

2. Literature Review:

2.1 Components of Employability Skill:

There are some key components of employability skills based on research articles. All these parameters are essential for an individual to be job ready:

Cognitive skills: These skills include analytical thinking, problem-solving, creativity, and decision-making abilities (OECD, 2013). This skill helps an individual to take a decision while working and responding in critical situations. When an individual solves a problem, she/he learns from it and adds value to the organisation.

Non-cognitive skills: Also known as soft skills or personal attributes, these skills include communication, teamwork, adaptability, resilience, self-motivation, and emotional intelligence (Heckman & Kautz, 2012). Many of individuals get a job but they don’t perform well in it because of lack of the non-cognitive skills. This skill helps an individual to gel up with the team and develop the grit mind-set. It also is important to have emotional intelligence at today’s time as Artificial Intelligence is able to take decisions which are obvious. Human Intelligence differentiates between wrong and ethically wrong.

Qualifications and knowledge: This component of employability demonstrates a level of competence in a particular field or industry. There is some basic qualification which is needed to perform a job. One cannot become an electrician technician if she/he have not studied electrician principles.

Work experience: Practical skills and knowledge gained through work experience are valuable to employers (European Commission, 2018). The Engineering Education survey reveals worrisome trends in the engineering job market. It reports that 25% of engineers are unemployed, while 66% have had to opt for non-engineering jobs (Bhalla, 2020). The study further states that 58% of engineers do not believe that they are earning enough, with some entry-level salaries being lower than those of domestic maids in Kerala (Bhalla, 2020). These findings highlight the need for universities and industry partners to collaborate and create opportunities for practical, hands-on experience to equip engineers with the necessary skills to meet the demands of the job market and obtain fair compensation.

Social capital: This refers to an individual’s social networks and relationships and can provide access to job opportunities and information (Bourdieu, 1986).

In order to maintain high levels of employability, individuals must continuously update their skills and knowledge through a combination of formal and informal learning opportunities (Yorke & Knight, 2006). They must also develop a range of personal attributes and behaviors that are valued by employers (European Commission, 2018).

2.2 Employability Skill Gap:

The National Employability Report for 2021 highlights that only 45.9% of the students graduating from vocational institutes in India are employable, indicating a considerable gap between the skills imparted in vocational education and the requirements of the job market (Aspiring Minds, 2021).

The Confederation of Indian Industry (CII) reported that a lack of industry-academia collaboration and outdated curriculum are major contributing factors to the employability skill gap in India’s vocational education system (CII, 2019). The National Skill Development Corporation (NSDC) conducted a
study that found most vocational training programs in India focus on theoretical knowledge rather than practical skills, which results in a significant gap between the skills imparted and the skills required by the industry (NSDC, 2019). Additionally, Kaur and Nandan (2019) suggest in their research paper the need for vocational education institutes to update their curriculum regularly to keep pace with the changing job market requirements. They also suggest that the introduction of practical training programs, internships, and apprenticeships can help bridge the employability skill gap.

Furthermore, a report by the World Economic Forum (WEF) highlights that the employability skill gap is a global phenomenon, and it is estimated that by 2022, more than half of all employees will require significant reskilling and upskilling to remain employable (WEF, 2018). Thus, addressing the employability skill gap is not only essential for the vocational education system in India but also for the global workforce.

The need for vocational education programs to develop both technical and soft skills has been highlighted in various studies. According to the International Labour Organization (ILO), soft skills such as communication, problem-solving, and teamwork are crucial in addition to technical skills (ILO, 2020). The National Employability Enhancement Mission (NEEM) also suggests adopting outcome-based education (OBE) in vocational education to ensure that students acquire the skills required by the industry (NEEM, 2019).

Employers’ preferences for candidates with both technical and soft skills have been observed in various countries. A study in Malaysia found that the lack of either skill can result in reduced employability (Kashif, Kamarudin, & Ahmad, 2021). Similarly, a research paper on the employability of engineering graduates in India shows that there is a significant gap between the skills imparted in engineering education and the requirements of the job market, highlighting the need for students to acquire additional skills through internships, training programs, or online courses (Guruprasad & Gowda, 2020).

The previously cited sources shed light on the complex and versatile nature of the employability skill gap in vocational education. Addressing the issue requires a comprehensive approach that considers different factors affecting graduates’ employability. Developing both technical and soft skills is crucial, as highlighted by the International Labour Organization (ILO) in their study (ILO, 2020), which emphasizes the need to focus on communication, problem-solving, and teamwork. Outcome-based education (OBE) can also help ensure that students acquire the necessary skills demanded by the industry, as recommended by the National Employability Enhancement Mission (NEEM) (NEEM, 2019).

The lack of industry exposure during the course of study, inadequate infrastructure, and outdated curriculum have been identified as significant factors contributing to the employability skill gap in polytechnic education in India (Singh, Tiwari, & Bhatnagar, 2020). Similarly, graduates of vocational education in Turkey face a significant skill gap, particularly in problem-solving, critical thinking, and communication skills (Kara & Karagoz, 2020). Therefore, providing opportunities for practical training and updating the curriculum can help bridge the gap and improve graduates’ employability.

Moreover, digital skills are increasingly important in today’s job market, as highlighted by the Organisation for Economic Co-operation and Development (OECD) in their report (OECD, 2020). Vocational education programs must focus on developing these skills to ensure graduates’ employability. Additionally, the research paper on MBA graduates in India highlights that employers also value leadership and entrepreneurial skills (Gupta, Khandelwal, & Kumar, 2021). Thus, holistic
development is necessary, including developing technical and soft skills, industry exposure, digital skills, and leadership and entrepreneurial skills, to bridge the employability skill gap in vocational education.

2.3 Impact of Employability Skill Gap:

The citations presented shed light on the wide-ranging impact of the employability skill gap on individuals, businesses, and society as a whole. One of the most significant impacts of this gap is on the job search process, as job seekers who lack the necessary employability skills may struggle to find suitable employment (Lee & Bartram, 2012). Moreover, the employability skill gap can have a negative impact on business performance, leading to reduced productivity, decreased quality of work, and increased training costs (Abimanyi-Ochom & Ovretveit, 2014).

Addressing the employability skill gap is also essential for promoting long-term economic growth as a lack of skilled workers can limit a country’s economic potential (World Economic Forum, 2016). Moreover, the employability skill gap can have a significant impact on social mobility, limiting opportunities for upward social mobility for individuals from disadvantaged backgrounds (Guarascio & Virgillito, 2020).

Furthermore, the employability skill gap can also have an impact on employee well-being, leading to job insecurity, reduced job satisfaction, and decreased opportunities for career advancement (Cedefop, 2017). Addressing the employability skill gap is crucial not only for improving the employability of vocational education graduates but also for promoting economic growth, social mobility, and employee well-being.

2.4 Employability Skill Gap & Vocational Education:

Mismatch between Industry Needs and Education: Research by Schiersmann and Ertl (2015) suggests that one of the key components of the employability skill gap in vocational education is a mismatch between the skills and knowledge taught in vocational education and the needs of the industry. This mismatch can lead to a gap in the skills and knowledge that employers are seeking in potential employees, and ultimately lead to reduced employability for graduates of vocational education programs.

Inadequate Development of Soft Skills: According to a study by Nair and Shankar (2019), another component of the employability skill gap in vocational education is the inadequate development of soft skills. Soft skills, such as communication, teamwork, and problem-solving, are essential for success in the workplace but are often neglected in vocational education programs. This can result in graduates who are proficient in technical skills but lack the soft skills needed to effectively work in teams, communicate with clients, and solve problems in the workplace.

Limited Exposure to Real-World Work Environments: A study by Brink and Wessels (2017) suggests that limited exposure to real-world work environments is another component of the employability skill gap in vocational education. Vocational education programs often lack opportunities for students to gain practical experience in the workplace, such as internships, work-based learning, and apprenticeships. This can lead to a lack of familiarity with workplace expectations and culture, and can result in graduates who are not adequately prepared for the demands of the job market.

Insufficient Emphasis on Lifelong Learning: Finally, research by Pavlova and Williams (2018) highlights the importance of lifelong learning in addressing the employability skill gap in vocational education. The study found that vocational education programs often focus on the development of technical skills and neglect the importance of continuous learning and professional development. This can result in graduates who are not equipped to adapt to changing
job market demands and are at risk of becoming obsolete in their chosen professions.

Overall, these research studies demonstrate that the components of employability skill gap in vocational education are multifaceted and require a comprehensive approach to address. By addressing the mismatch between industry needs and education, developing soft skills, providing practical experience in real-world work environments, and emphasizing lifelong learning, vocational education programs can better equip graduates with the skills and knowledge needed to succeed in the job market.

Limited Integration of Technology: According to a study by Kozina and Kuzmenko (2021), the limited integration of technology in vocational education is a key component of the employability skill gap. The study found that many vocational education programs lack the necessary resources and infrastructure to provide students with training in emerging technologies, such as automation, robotics, and artificial intelligence. This can result in graduates who are not equipped to compete in a job market that increasingly requires proficiency in technology-related skills.

Lack of Industry Connections: A study by Savoie and Dupont (2018) suggests that a lack of industry connections is another component of the employability skill gap in vocational education. The study found that vocational education programs often lack partnerships with industry and do not have the necessary networks to provide students with training in emerging technologies, such as automation, robotics, and artificial intelligence. This can result in graduates who are not equipped to compete in a job market that increasingly requires proficiency in technology-related skills.

Insufficient Language Skills: Research by Perera and Ylijoki (2020) suggests that insufficient language skills are a significant component of the employability skill gap in vocational education. The study found that many vocational education programs do not adequately address the language skills needed to effectively communicate in the workplace, particularly in multilingual and multicultural environments. This can result in graduates who are not equipped to effectively communicate with colleagues, clients, and customers, which can negatively impact their employability.

Lack of Entrepreneurship Skills: According to a study by Li et al. (2020), a lack of entrepreneurship skills is another component of the employability skill gap in vocational education. The study found that vocational education programs often focus on technical skills and neglect the development of entrepreneurial skills, such as creativity, innovation, and risk-taking. This can result in graduates who lack the necessary skills to start their own businesses or to effectively contribute to entrepreneurial ventures.

Gender Bias: Research by Broucker et al. (2021) suggests that gender bias is a significant component of the employability skill gap in vocational education. The study found that gender stereotypes and biases can influence the types of vocational education programs that men and women choose, as well as the types of jobs that they are considered for after graduation. This can result in women being underrepresented in high-skilled, high-wage occupations, and can negatively impact their employability.
These research studies show that addressing the employability skill gap in vocational education requires a multifaceted approach that involves addressing the mismatch between industry needs and education, developing soft skills, providing practical experience in real-world work environments, emphasizing lifelong learning, integrating technology, establishing industry connections, and providing career guidance and counseling.

2.5 Vocational Education in recent era

The Government of India has recognized the importance of vocational education in promoting employability and economic growth. In the recent budget, the government has increased the allocation for the Skill India Mission to INR 3,000 crores, indicating a renewed emphasis on vocational education and skill development (Economic Times, 2021). The government has also announced the establishment of 100 new Sainik schools and the expansion of the National Apprenticeship Training Scheme (NA TS) to further promote vocational education (India Today, 2021).

This increased focus on vocational education is in line with global trends, as many countries recognize the importance of vocational education in promoting economic growth and reducing unemployment (OECD, 2020). Vocational education provides students with practical skills and hands-on experience, making them more attractive to potential employers (Kara & Karagoz, 2020). Moreover, vocational education can help to address the employability skill gap, which is a significant challenge facing many countries, including India (Guruprasad & Gowda, 2020).

The government’s renewed emphasis on vocational education is a positive step towards addressing the skill gap and promoting economic growth. However, it is crucial to ensure that vocational education programs are of high quality and relevant to the needs of employers (Singh et al., 2020). Moreover, it is essential to address the negative perceptions associated with vocational education and promote its value as a viable career option (Yorke & Knight, 2006).

2.6 Impact of Vocational Education with respect to Employment

A study by Mancini and Sinibaldi (2020) investigated the effectiveness of vocational education and training (VET) in promoting employment and social mobility in Italy. The study found that VET had a positive impact on employability, with VET graduates more likely to be employed than non-VET graduates. The study also highlighted the importance of VET in promoting social mobility, particularly for students from disadvantaged backgrounds. This international study provides evidence of the effectiveness of VET in promoting employment and social mobility, and emphasizes the need for continued investment in VET programs.

A study by Jürges and Schneider (2011) examined the impact of vocational education and training (VET) on youth unemployment in European countries. The study found that countries with a strong emphasis on VET had lower youth unemployment rates, highlighting the potential of VET in reducing unemployment.

Another study by Toner and Buchan (2018) investigated the relationship between VET and youth unemployment in developing countries. The study found that VET programs can help to reduce youth unemployment by providing young people with the skills and knowledge needed to enter the workforce.

According to a report by the Organisation for Economic Co-operation and Development (OECD), vocational education and training (VET) can help to reduce unemployment and promote economic growth. The report states that countries with strong VET systems tend to have lower unemployment.
rates and higher levels of productivity (OECD, 2014).

Finally, a study by Leng and Xiao (2019) examined the impact of VET on employment outcomes in China. The study found that VET graduates had higher employment rates and earned higher wages than non-VET graduates, highlighting the potential of VET in reducing unemployment and promoting economic growth.

3. Skilled in Odisha and its impact

In April 2016, the State Government established OSDA to harmonize the various skill development programs implemented by different departments. Sri Subroto Bagchi, a renowned IT entrepreneur, was appointed as the Chairman of Odisha Skill Development Authority on May 1, 2016. After assuming the position, Sri Subroto Bagchi embarked on a tour of all 30 districts in the state, covering nearly 7,000 kilometers by road in one month. On December 6, 2016, Odisha Skill Development Authority was officially registered as a society. The Skilled in Odisha program is a state government-led initiative that aims to enhance the quality of vocational education and training. The program has transformed ITIs in Odisha, leading to higher enrolment and national recognition, with 11 ITIs ranking in the top 100 list drawn up by the Union Ministry of Skill Development and Entrepreneurship. The program has also improved the reputation of the state and its perception among industries, resulting in better quality employers for the students.

According to a study by Ghosh and Sahoo (2021), there is a significant skill gap among ITI graduates in Odisha, particularly with respect to Industry 4.0 technologies. The study suggests that there is a need for ITIs to incorporate training programs that focus on emerging technologies such as artificial intelligence, robotics, and the Internet of Things (IoT) to meet the demands of the current job market. The study also recommends that the Skilled in Odisha program should collaborate with industry partners to identify and address these skill gaps.

Furthermore, a study by Misra et al. (2018) highlights the importance of vocational education and training (VET) programs in improving employability in India. The study suggests that VET programs can provide job-specific skills training and work experience, which can enhance graduates’ job prospects. The study also recommends that VET programs should incorporate soft skills training such as communication, teamwork, and problem-solving to further enhance employability.

A study by Roy et al. (2020) examined the impact of vocational education and training (VET) programs on the employability of Indian youth. The study found that VET programs significantly improved employability among youth, particularly in terms of securing formal employment and earning higher wages. The study also highlighted the importance of partnerships between VET institutions and industry partners to ensure that training programs are aligned with industry needs and trends.

A study by Ravi and Mani (2019) examined the role of apprenticeship programs in enhancing the employability of ITI graduates in India. The study found that apprenticeship programs were highly effective in providing hands-on training and industry exposure, which were crucial for securing employment. The study also highlighted the importance of government support and industry partnerships in expanding the reach and effectiveness of apprenticeship programs.

Moreover, a study by Kumar et al. (2021) emphasized the importance of continuous upskilling and reskilling to ensure employability in the rapidly changing job market. The study found that ITI graduates who participated in regular upskilling programs were more likely to secure higher-paying and stable employment.
A study by Lehmann and Wadhwani (2020) investigated the challenges and opportunities for vocational education and training (VET) in India. The study found that while there has been progress in expanding access to VET, there are still significant challenges such as a lack of quality training, low employer engagement, and limited recognition of vocational qualifications. The study also highlighted the need for a more comprehensive approach to VET that takes into account the needs of diverse learners and industries, and leverages technology and innovation.

Moreover, a study by Chakraborty et al. (2019) emphasized the need for soft skills training in VET programs to improve employability. The study found that communication, teamwork, and problem-solving skills were highly valued by employers and were essential for success in the workplace. Therefore, the study recommends that VET institutions incorporate soft skills training into their programs to enhance graduates’ employability.

4. Conclusion:

The Skilled in Odisha program has brought significant changes to the skill development ecosystem in the state of Odisha, India. The program has improved the quality of vocational training and education, resulting in better job opportunities for the students. The recent success of the World Skill Center, which is the flagship institute of the Odisha Skill Development Association, is a testament to the program’s positive impact. The center’s pilot batch recently completed a year-long advanced skill training program, and even 24 recent graduates from the inaugural batch who are currently interning in Singapore were presented with their ITEES Skills Qualification Certificates.

However, despite the program’s success, there is still a need to identify and address the employability skill gap among ITI students so that they are prepared for the jobs of the future and become more employable. This can be achieved through various initiatives, such as curriculum updates, industry partnerships, and training programs. Overall, the Skilled in Odisha program is a significant step towards building a skilled workforce and promoting economic growth in the state.

Reference


