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Vocational Education of Visually Impaired Students in West Bengal

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Abstract— This study investigates the status and challenges of vocational education and training systems for visually impaired students in West Bengal. Employing a descriptive research method, data were collected using a checklist. The sample comprised four secondary special schools for the visually impaired, including four principals, 50 students who completed vocational training. Findings revealed that vocational education faces significant challenges, including insufficient infrastructure, outdated resources, and financial limitations. Additionally, the lack of specialized teacher training, societal misconceptions, and cultural barriers hinder the effectiveness of these programs. Students' aspirations are constrained by limited career awareness, social isolation, and inadequate community support, further exacerbated by the absence of role models and systematic feedback mechanisms for program improvement. Addressing these issues requires policy reforms, increased funding, community engagement, and inclusive practices to enhance the independence, employability, and holistic development of visually impaired students in vocational domains.

Keywords: Visually Impaired Students, Special Visually Impaired Schools, Vocational Education, Vocational Education Challenges, West Bengal

I. INTRODUCTION

Education should foster character development, strengthen the mind, expand intellect, and promote self-reliance. Every individual deserves to improve their personal growth, shaping their behaviour and adapting to society. Schools play a pivotal role in this development. The School Education Department of West Bengal seeks to provide equitable access and quality education for all children. The Department of Mass Education Extension and Library Service (DMEELS), established under the West Bengal Societies Registration Act of 1961, focuses on the education of children with special needs, including the training of differently-abled students. Similarly, the Office of the Commissioner for Persons with Disability in West Bengal ensures equal opportunities and rights protection as outlined in the Persons with Disabilities (PWD) Act, 1995. This act includes visual impairments such as blindness and low vision, which affect 80% of the information processed by the brain. According to the Ministry of Social Justice and Empowerment, blindness is defined as a condition where, even after correction, a person's visual acuity is less than 3/60 or 10/200 in the better eye. People with such conditions cannot perceive light or experience blurred vision despite corrective measures. The 2011 Census data reveals that 19% of people in India have both visual and hearing impairments, and 30% of children with disabilities are visually impaired. Among the 3.1 million visually impaired individuals, only 28% are students, while 0.4% are beggars. In West Bengal, 2.21% of the population is disabled, with a literacy rate of 57.34%, and 29% of disabled individuals do not attend school. Visually impaired students in West Bengal are educated in either Special Schools, which cater to those with severe disabilities, or Inclusive Schools, where the level of disability is lower.

Vocational education refers to skill-based training programs that prepare students for specific skills or occupations. Unlike general academic education, vocational education emphasizes practical and job-related skills to increase learners' employability and self-reliance. Vocational education in India may be traced back to the pre-independence era, particularly through the recommendations of the Kothari Commission (1964-66), which highlighted the importance of diversifying secondary education and introducing vocational streams. Vocational courses were formally introduced at the secondary level in 1976 as part of educational reform efforts. The National Policy on Education (1986), as revised in 1992, reinforced vocational education by promoting the integration of vocational training into mainstream schooling to meet students' different requirements. In recent years, initiatives such as the Skill India Mission (2015) and the National Education Policy (2020) have refocused attention on vocational education with the goal of making it more inclusive, flexible, and in line with industry needs. These initiatives have

also extended to marginalized populations, such as students with disabilities, to ensure that vocational training serves as a vehicle for empowerment and social inclusion.

Vocational education is crucial for visually impaired students in West Bengal, as it equips them with skills necessary for employment and independence while also boosting their confidence and enabling social participation. To enhance vocational education in the region, it is vital to understand the current state of vocational training in special schools, as well as the challenges hindering its effectiveness. Identifying these barriers is essential for developing strategies to improve vocational education, as it plays a key role in empowering visually impaired individuals, helping them achieve economic independence, and ultimately improving their quality of life.

II. REVIEW OF RELATED LITERATURE

II.I. IMPORTANCE OF LIFE SKILLS EDUCATION FOR VISUALLY IMPAIRED LEARNERS

The learning of both core life skills, such as personal and social competencies, and specialized skills, such as academic and occupational talents, is critical for the overall development of students with visual impairments. These skills encourage independence and enable students to engage meaningfully in society. Ghosh et al. (2023) stressed the importance of structured life skills education in assisting visually impaired learners to overcome obstacles and gain the competence required to navigate future realities.

II.II. CAREER DEVELOPMENT AND VOCATIONAL READINESS

Effective career education is critical for the future livelihoods of visually impaired children and adolescents. According to Wolffe (1996), high expectations from parents and instructors, as well as opportunities for socializing with both visually impaired and sighted classmates, contribute to a supportive atmosphere for professional advancement. The study also emphasizes the need to teach compensating skills, give honest feedback, and provide different work experiences in family, school, and community settings. Davidson (1975) refutes the assumption of occupational immaturity in visually impaired adolescents, claiming that their vocational growth is frequently hampered more by social marginalization and cultural hurdles than by a lack of competence.

II.III. EDUCATIONAL SUPPORT: INFRASTRUCTURE LIMITATIONS AND GAPS

Infrastructure and the availability of specialized support remain key barriers. Maknun et al. (2019) discovered that two-thirds of visually impaired students felt their campuses inaccessible, highlighting the need for inclusive architecture design with increased accessibility, safety, and sensory awareness aspects. Pagliano (1998) reported a significant scarcity of trained teachers for visually impaired kids, particularly in mainstream institutions. Although inclusive education has social benefits, educational achievements might suffer when teachers lack competence in particular curriculum areas like Braille and mathematics. Furthermore, special schools are increasingly serving pupils with more complex needs, often without adequate resources to enable successful instruction.

II.IV. ASSISTIVE TECHNOLOGY AND DIGITAL INNOVATION

Technological improvements have enhanced educational access for visually challenged students. Chandran et al. (2021) developed the THIRD EYE system, which employs voice commands and text-to-speech technology to turn written content into audio, allowing students to access study materials and complete exams independently using speech-to-text features. Swain and Sahoo (2021) emphasized the need for a dedicated educational application with a text-to-speech feature that promotes reading and comprehension independence. Similarly, Pandey et al. (2024) described UnSight, as an AI-powered virtual education platform that uses voice and text processing to give tailored feedback and adaptable learning environments.

II.V. SOCIAL-ACADEMIC ADAPTABILITY AND PERSONAL EMPOWERMENT

Visually handicapped kids have demonstrated remarkable socio-academic adaptation. Yonson (2018) discovered that such students rely on both internal resources, such as spirituality, self-confidence, and motivation and external support networks, such as family and peer interactions. These aids improve academic resilience, especially when combined with assistive technologies, personalized teaching methodologies, and specific learning materials.

II.VI. VOCATIONAL ASSESSMENT AND SKILL EVALUATION

Effective vocational assessments targeted to visually impaired individuals are critical in developing relevant career choices. Dial et al. (1991) validated the Comprehensive Vocational Evaluation System (CVES) as a tool for measuring vocational abilities and

levels of independence, making it an important resource for identifying work potential in this population. Furthermore, Ryder and Kawalec (1995) devised a small-group training program aimed at improving job-seeking skills for blind or visually impaired individuals. Although the study lacked comprehensive outcome measures, the program had positive benefits in improving employment preparation abilities**.**

II.VII. SPECIALIZED INSTRUCTION IN NICHE SUBJECTS.

Subjects such as music theory necessitate specialized training for visually challenged students. Pacun (2009) underlined the value of mixing traditional classroom learning with individualized training. While inclusion encourages peer interaction, tailored teaching is required to accommodate various learning formats, such as Braille music notation, as well as to meet specific instructional obstacles.

III. SIGNIFICANCE OF THE STUDY

The current study on vocational education for visually impaired students in West Bengal is notable because it advances both theoretical understanding and practical consequences in the domains of inclusive education and disability studies. It emphasizes that vocational preparedness is more than just skill learning; it is also closely linked to psychological development, social integration, and environmental accessibility.

Drawing on Bandura's Social Cognitive Theory, which emphasizes the importance of self-efficacy and observational learning, this study investigates how visually impaired students gain professional competencies in situations that either assist or impede their development. When visually impaired students are exposed to inclusive and expectation-rich contexts, they are more likely to acquire positive ideas about their talents (Wolffe, 1996). This attitude of self-efficacy is critical for achieving occupational objectives and adapting to a variety of work contexts.

Furthermore, Vygotsky's Sociocultural Theory emphasizes the role of social interaction and guided learning in cognitive and skill development. Structured vocational education, backed by trained instructors, adaptive tools, and peer engagement, can function as the "Zone of Proximal Development," assisting visually impaired students in acquiring life and occupational skills beyond their existing capacity. This is especially important in contexts like West Bengal, where structural hurdles such as a lack of infrastructure and qualified experts have frequently hampered the delivery of effective vocational programmes (Maknun et al., 2019; Pagliano, 1998).

Psychologically, vocational identity formation is crucial during adolescence—a period marked by Erikson's stage of Identity vs. Role Confusion. Students with visual impairments' ability to envisage and prepare for a meaningful profession is inextricably linked to their sense of self-worth, autonomy, and social belonging. Exclusion, inaccessible situations, or a lack of support can all interrupt this process, resulting in long-term developmental difficulties. As a result, increasing vocational education is both an educational and psychosocial necessity.

Text-to-speech applications and AI-driven educational platforms (Chandran et al., 2021; Pandey et al., 2024) are examples of technological interventions and assistive advances that provide new options for improving vocational learning. These technologies can be revolutionary in closing the accessibility gap, especially when integrated into organized programs that assess and support the learner's progress (Dial et al., 1991).

The purpose of this study is to inform policy formulation, institutional change, and curriculum enhancement by assessing the existing situation of vocational education in West Bengal special schools. The research aims to provide a full overview of the current framework by looking into both institutional provisions and the status of students enrolled in these programs. Furthermore, it covers the obstacles that prevent the proper implementation of vocational education for visually impaired students. The study, which is based on the ideas of psychological empowerment, inclusive pedagogy, and evidence-based planning, calls for a shift from traditional, charity-driven assistance methods to rights-based, capacity-building approaches. Finally, the study hopes to contribute to the development of techniques that provide visually impaired students with essential occupational skills while promoting autonomy, dignity, and active involvement in society.

IV. METHODOLOGY

The study adopted a descriptive research method, utilizing an unstructured interview to learn about vocational training practised in the school and a checklist to find the current status of special schools' address Objective 1. Support of previous related research was taken to justify Objective 2. Data was collected in four secondary special schools for the visually impaired in West Bengal.

The sample included four principals, who provided insights into the status of vocational education in their schools, and 50 students who had successfully completed vocational training.

IV.I. ETHICAL CONSIDERATION

The study was conducted in accordance with ethical research practices. Before data collection, permission was taken from the principals of the schools, and also data was collected with the approval of the Teachers and Students.

IV.II. OBJECTIVES

1. To know the current status of Vocational Education in the Special Schools of West Bengal.
    a. Special Schools Status
    b. Students Status.
2. To know the challenges faced in properly functioning Vocational Education in West Bengal.

V. RESULTS

Table 1.0: Current Status of Vocational Education in Special Schools of West Bengal

Sl No.	Vocational Skills	Total Percentage delivering skills
1	Braille Printing and Publication	25%
2	Braille Transcription	25%
3	Candle-Making	25%
4	Chalk-Making	25%
5	Computer Training	50%
6	Handicraft	50%
7	Music	25%
8	Small Scale Industries	50%
9	Waiving and Knitting	25%

Results: Table 1.0 displays the vocational skills taught in the Special Schools. Fifty percent of the schools train their students in computer training, handicrafts, and small-scale industries, while only twenty-five percent train their students in braille printing and publication, braille transcription, candle-making, chalk-making, music, and waving and knitting.

Table 1.2*:* Status of the Students who have successfully attended the particular Training

Sl No.	Vocational Skills	Novice 1-20%	Beginner 21-40%	Competent 41-60%	Proficient 61-80%	Expert 81-100%	Total %
1	Braille Printing and Publication	12%	40%	48%	-	-	**100%**
2	Braille Transcription	04%	34%	58%	4%	-	**100%**
3	Candle-Making	-	22%	46%	26%	6%	**100%**
4	Chalk-Making	-	20%	42%	34%	4%	**100%**

5	Computer Training	62%	38%	-	-	-	**100%**
6	Handicraft	18%	22%	56%	4%	-	**100%**
7	Music	-	-	-	64%	36%	**100%**
8	Small Scale Industries	46%	36%	18%	-	-	**100%**
9	Waiving and Knitting	22%	18%	56%	4%	-	**100%**

Results: Table 1.1 displays the ability of the students in the particular vocational skills after completing the training provided by the schools, where to get into any job being proficient or expert is very essential. Regarding Braille Printing & Publication and Small-Scale Industries, none of the students find themselves proficient or expert; similarly, regarding Braille Transcription, Handicraft and Waiving & Knitting, very few students find themselves proficient and none of them find themselves an expert. Whereas regarding Candle-Making and, Chalk-Making, good numbers of students find themselves proficient and very less find themselves expert. While majority of the students find themselves proficient and expert in music.

VI. CHALLENGES FACED IN THE PROPER FUNCTIONING OF VOCATIONAL EDUCATION

VI.I. INFRASTRUCTURE CHALLENGES

Special Schools for the Blind often operate within limited physical spaces, lacking adequate facilities for workshops or training centres, which restrict the delivery of hands-on vocational training (Najmee et al., 2024; Dutra, 2021). These schools commonly lack essential accessibility features such as tactile walkways, braille signage, and navigation aids, making it difficult for students to move independently within the premises (Kumari et al., 2020; Almaz, 2022). Vocational training for visually impaired students requires specialized equipment, including computers with screen readers, braille-compatible devices, and tactile tools. However, the availability of these resources is limited, and their high cost further complicates procurement (Pradhan & Samanta, 2018). Financial constraints often exclude vocational education from the curriculum, limiting access to updated technologies and materials necessary for effective training (Itua, 2013; Tripathi, 2018). Furthermore, there is a shortage of skilled teachers who are both vocational experts and trained to address the needs of visually impaired students, as funding for professional development is insufficient (Mason et al., 2000; Poddar et al., 2024). As a result, outdated vocational training practices hinder collaboration with industries and reduce student employment opportunities (Poddar et al., 2024).

VI.II. INSTITUTIONAL CHALLENGES

The current vocational education system inadequately addresses the unique needs and capacities of visually impaired students, as it prioritizes traditional academic skills over practical, career-oriented competencies that are essential for independent living and employability (Haryanti, 2018). This challenge is compounded by financial constraints faced by special schools, which limit their ability to fund vocational programs, hire skilled trainers, and invest in contemporary infrastructure and tools (Pradhan et al., 2018). Teachers often lack specialized training in vocational education for visually impaired students, and opportunities to adopt new teaching methods or access updated tools remain scarce. As a result, less-skilled educators are expected to manage both academic and vocational instruction, leading to burnout and diminished effectiveness in both areas (Madhukar & Aneraye, 2024). Societal perceptions that underestimate the potential of visually impaired students further discourage investment in comprehensive vocational training, while parental expectations for traditional careers or a lack of belief in students' abilities hinder progress (Kabwe et al., 2020). Additionally, the absence of institutional research to identify the most beneficial vocational skills, coupled with the lack of systems to track student outcomes post-training, prevents the continuous improvement of vocational education programs (Storey et al., 1985).

VI.III. SOCIAL CHALLENGES

Societal misconceptions regarding the abilities of visually impaired individuals often result in prejudice and diminished expectations of their occupational potential. Employers, while sometimes mandated to hire visually impaired candidates, frequently perceive them as less capable than their sighted counterparts, thereby limiting their professional opportunities

(Pradhan & Samanta, 2018; Bhaskar et al., 2022). Cultural norms further intensify these challenges, particularly for girls with visual impairments, who face additional barriers due to traditional gender roles that emphasize domestic responsibilities over education or vocational training. Similarly, boys are often compelled to conform to stereotypical male-dominated professions, even when their interests lie in alternative fields (Nandi et al., 2024). A significant lack of awareness among parents, students, and communities about the diverse career possibilities available to visually impaired individuals especially in emerging fields such as technology, music production, and entrepreneurship further discourages students from pursuing innovative vocational pathways (Eseadi, 2024). Social isolation, driven by limited inclusivity and a lack of understanding of their challenges, restricts visually impaired students from networking, collaborating, and developing occupational skills in group settings (Ghosh et al., 2023). In some contexts, disability is still regarded as a curse or punishment, resulting in marginalization, mistreatment, and restricted access to community resources, further impeding their development (Eseadi, 2024). Additionally, the absence of prominent visually impaired role models in vocational or professional domains undermines students' aspirations and motivation, depriving them of the inspiration needed to pursue ambitious career goals (Madura et al., 2022).

VI.IV. ECONOMIC CHALLENGES

Vocational training programs for visually impaired students require specialized tools and resources, such as braille-enabled devices, screen readers, and adaptive equipment, which are expensive. schools are facing inadequate funding from government bodies or private donors, which is making it difficult to sustain or expand these programs, and that is the reason why there is limited investment in infrastructure like workshops, training centers, and accessible technology labs. (Pradhan and Samanta, 2018; Onyishi, 2024) Adaptive tools and technologies, such as tactile printers, braille keyboards, and screen-reading software, are prohibitively expensive for schools and families, and it is not one one-time investment it requires maintenance and upgrading, which poses an ongoing financial burden. (Nahar et al.., 2021) The majority of students come from economically disadvantaged families who cannot afford vocational training fees or related expenses such as transportation, accommodation, or materials. Scholarships for visually impaired students are limited and often do not cover vocational programs comprehensively. (Onyishi, 2024) Many families of visually impaired students live below the poverty line and struggle to meet basic needs, leaving little or no resources for their child's vocational education. Economic hardships sometimes force students to leave school to contribute to the household income. (Onyishi, 2024) Even after completing vocational training, visually impaired students face challenges in finding stable, well-paying jobs due to societal biases and lack of employer awareness. Poor economic outcomes discourage families and students from investing in vocational education. (Agarwal,2024; Mokhtar et al., 2024) Schools often need to collaborate with industries for internships or job placements, but these partnerships require additional funding for coordination, transportation, and supervision. Limited budgets make it challenging to host industry experts, organize career fairs, or provide exposure trips for students. Training teachers in vocational skills and adaptive teaching methods is expensive, and schools struggle to allocate sufficient funds for professional development. (Tripathi, 2018) Many schools rely heavily on donations from NGOs, charitable organizations, or individuals. This dependence creates financial uncertainty and limits the scope for long-term planning. (Pradhan and Samanta, 2018) Programs in fields like IT, music production, or advanced handicrafts require substantial investment in infrastructure, tools, and expertise, making them less accessible.

VI.V. PERSONAL CHALLENGES

Many students struggle with low self-esteem they fear of failure or making mistakes, which discourages them from actively participating in vocational training. (Ginting et al., 2024; Bhatnagar et al., n.d) Students may not fully realize their potential or be unaware of the existing vocational opportunities available to them. (Pradhan et al., 2018) Adjusting to vocational training environments, especially in group settings, can be intimidating for students who are used to sheltered or individual learning methods. Navigating unfamiliar spaces or equipment designed for vocational education adds to their challenges. (Pradhan & Samanta, 2018) which led students to develop a dependency on family, friends, or teachers for everyday tasks, and affects their independence in vocational training. Overcoming this dependency requires consistent support and encouragement, which may not always be available. Students often face anxiety, depression, or stress related to their disability, societal attitudes, or fears about future employment. Mental health issues can affect their focus, motivation, and ability to engage in training. (Ginting et al., 2024) Some students may have additional disabilities or health conditions that make certain vocational activities physically demanding or exhausting. Braille reading or excessive tactile work can lead to strain or fatigue over time. (Pinquart and pfeiffer, 2012) Forming connections with peers or trainers can be challenging for visually impaired students who feel isolated or self-conscious. This can limit opportunities for collaborative learning and networking in vocational settings. (Bhatnagar et al., n.d) Some students may resist learning new technologies, skills, or techniques, preferring traditional or familiar methods of learning.

Fear of technology or complex tools often used in modern vocational training can act as a barrier. (Ginting et al., 2024) Even at a personal level, financial worries about their family's economic situation can distract students or force them to prioritize earning over education. Without accessible role models or mentors who have successfully pursued vocational careers, students may feel unmotivated or uncertain about their future prospects. (Itua, 2013; Tripathi, 2018) Some students may face challenges in retaining or applying the vocational skills they learn, especially if these skills are not practiced regularly. (Madhukar & Aneraye, 2024) A lack of emotional or practical support from family, peers, or teachers can make it harder for students to overcome personal challenges.

VII. CONCLUSION

The vocational education and training systems for visually impaired students face multifaceted challenges that limit their effectiveness in fostering independence and employability. Insufficient infrastructure, outdated resources, and financial constraints hinder the delivery of comprehensive vocational programs tailored to the unique needs of these students. The lack of specialized teacher training, combined with societal misconceptions and cultural norms, further exacerbates these issues, impeding the holistic development of visually impaired individuals. Moreover, limited awareness of diverse career opportunities, compounded by social isolation and inadequate community support, restricts students' aspirations and access to innovative fields. The absence of role models and systematic feedback mechanisms for program improvement further detracts from the potential of vocational training to meet the evolving needs of visually impaired students. Addressing these gaps requires a collaborative and multifaceted approach involving policy reforms, increased funding, community awareness, and the integration of inclusive practices to ensure equitable opportunities and outcomes for visually impaired individuals in vocational and professional domains.

VIII. RECOMMENDATIONS

It is very crucial to include vocational Education in the curriculum of Special Schools for VI. Since the students come from low- or middle-class families, it becomes tough for them to spend separately on vocational education. Vocational education also should be upgraded the existing Vocational Education is not appropriate to place them in desirable jobs.

Accordingly, psychological perspectives suggest that integrating counselling and support within vocational training programs can enhance self-esteem, resilience, and motivation, as emphasized by Bandura's concept of self-efficacy. Inclusive teaching practices, inspired by Vygotsky's theory of scaffolding, encourage personal growth by addressing the unique psychological needs of visually impaired students in a supportive environment. Moreover, exposure to role models, as highlighted by Lockwood and Kunda, can inspire students, expand their career aspirations, and foster a sense of empowerment. Collaborative activities that promote social interaction, aligned with Deci and Ryan's self-determination theory, can reduce isolation and boost emotional well-being. Additionally, awareness campaigns that challenge societal misconceptions, drawing from Allport's contact theory, help create a more inclusive and accepting community. These approaches collectively foster the holistic development and psychological readiness of visually impaired students to excel in vocational and professional settings.

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