A Study on The Economic Upliftment Of Persons with Disabilities of Computer Operating and Programming Assistant (COPA) in INDIA

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Abstract: *Economic empowerment of Persons with Disabilities (PwDs) is a crucial component of inclusive and sustainable development. The Computer Operating and Programming Assistant (COPA) trade, offered under vocational training programs in India, has emerged as an important avenue for enhancing the employability and livelihood opportunities of PwDs by equipping them with industry-relevant digital and information technology skills. This study examines the role of COPA training in improving the economic status, employment prospects, income generation, and social inclusion of Persons with Disabilities in India. It explores the effectiveness of vocational skill development initiatives, identifies the challenges faced by trainees in accessing employment, and evaluates the contribution of government policies, industry participation, and assistive technologies in promoting inclusive workforce participation. The study adopts a descriptive and analytical approach using secondary data from government reports, policy documents, research publications, and institutional records. The findings indicate that COPA training significantly enhances digital competencies and employment readiness among PwDs; however, barriers such as inadequate workplace accessibility, social stigma, limited employer awareness, and uneven implementation of inclusive policies continue to restrict their economic advancement. The study concludes that strengthening industry collaboration, expanding accessible training infrastructure, promoting inclusive hiring practices, and ensuring effective policy implementation are essential for achieving sustainable economic upliftment of Persons with Disabilities through vocational education.*

Keywords: Persons with Disabilities (PwDs), Computer Operating and Programming Assistant (COPA), Vocational Training, Economic Upliftment, Skill Development, Employability, Digital Inclusion, Inclusive Employment, Assistive Technology

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Introduction

Disability and employment among Indian population is a social and economic problem (Rashmi and Mohanty, 2024). Individuals with disabilities (PwDs) constitute a significant proportion of Indian population, yet their labour market involvement continues to remain quite low. Most of them lack access to education and vocational training and, due to this, remain poor, earn low-income levels, and lead isolated social lives (Jindal and Chari, 2015). In an age of rapid economic development such as the Indian economy, where it is the age of digital skills economy, it is worth considering the ways through which training schemes may assist PwDs to secure their place within the labour market.

Industrial Training Institutes (ITIs) have been created to provide vocational training to youth in India (Kumar, 2025). They prepare students for employment in various trades, both traditional and modern. Among all these trades, the COPA (Computer Operator and Programming Assistant) course is one of the most popular in recent years. COPA provide basic computer knowledge, office application, data entry, and simple programming skills (Sarkar, 2019). In today's digital India, such skills are very important for getting both government and private jobs, or even for starting small self-employment like cyber cafes, computer shops or online freelancing. For PwDs, COPA is especially useful because compared to heavy mechanical trades, computer training is more accessible and can be adapted with assistive technology.

Economic empowerment of PwDs is not merely about income generation, but inclusion and dignity too (Redko, 2024). When PwDs attain access to skills and employment opportunities, they can generate family income, stay autonomous, and get equal participation in the society. Despite this, there are numerous hurdles yet, such as gender and caste bias, infrastructure gap, lack of accessibility, stigma, and rural, urban differences. These barriers restrain the potential of PwDs to utilize opportunities such as ITI COPA to the fullest.

Prior research on the Indian context reflected on vocational training or employment of PwDs in general terms rather than specific courses like COPA. There seems to be a research gap on the transferability of COPA training towards economic empowerment of PwDs specifically, especially the context of the digital economy.

Therefore, the purpose of this study is to explore the role of COPA course in improving employability, income generation, and social inclusion of PwDs. The main objectives are: to examine the benefits of COPA training, to identify challenges faced by PwDs in such programmes, and to understand how this training can contribute to their economic upliftment.

Methodology

This research is founded on the Systematic Literature Review (SLR) methodology. A SLR was adopted due to the fact that it enabled to aggregate, summarise and analyse already conducted studies in an organised manner, rather than relying on individual instances or perceptions (Thomé, Scavarda and Scavarda, 2016). Emphasis lies on the comprehension on the vocational

training, particularly the Computer Operating and Programming Assistant (COPA) course offered by ITIs, in terms of its correlation towards the economic development of persons with disabilities (PwDs) living in India, especially Raipur and the Durg division.

For the purposes of the review, various academic databases were searched e.g. Scopus, Google Scholar, ResearchGate, and other online journal sources. The words that were used include: disability employment, COPA ITI, skill development, economic upliftment, and India. The Boolean operators "AND" and "OR" were utilised to join words together and obtain more precise results.

The inclusion criteria were:

- studies conducted in India,
- focus on disability and vocational training or skill development,
- papers discussing employment or economic outcome of PwDs, and
- studies published in the last 10-15 years.

The exclusion criteria included studies not related to employment, not focused on vocational/ITI training, or which did not discuss PwDs.

The research screening process was carried out accordingly to the framework, identifying studies, screening the studies on their relevance, and then finalising the inclusion. Then the shortlisted studies were carefully read, and data was extracted regarding objectives, methodology, outcome, and applicability to PwDs. A thematic analysis was finally conducted to categorize the studies into the themes such as skill development, ITI COPA, economic upliftment and challenges.

Literature Review

Study (authors, year)	Title	Setting/Population	Design/Methods	Key findings
Tara and Pilz (2016)	Quality of VET in India: Evidence from regular & upgraded ITIs	15 ITIs in Karnataka, Odisha, TN, Delhi + 6 upgraded ITIs; principals, instructors, trainees	Multi-site case studies; interviews; field notes; policy review	Gaps in trainers & equipment; 15% dropouts; 33% unemployed after ITI; upgrades aimed to improve industry links
Venkatesh, Reddy and Angothu (2023)	Toward employability for persons with	India; trainers, parents, PwID	Interviews with stakeholders	Success needs school help, work practice, job coaches, employer support; barriers are stigma, poor awareness, and low funds

	intellectual disabilities			
Vanitha (2016)	Vocational Training Skills for Students with Intellectual Disabilities	8 special schools in Karnataka; mild & moderate ID students	Survey of schools; % by gender & severity	Most schools teach manual skills, little ICT; boys get more complex VTS than girls
Hazarika et al. (2020)	Impact of vocational training & special education on social competence	Day-care centre in India; children with ID (IQ 40-70)	Pre-post using Vineland Social Maturity Scale (VSMS)	Training improved self-help, socialisation, independence; girls lagged boys; higher IQ = higher gain
Haldar and Bisai (2024)	Educational attainment & access to technical/vocational training among PwDs	NSS data 1991–2018; children/PwD in India	Trend + regression models	Schooling rose, but vocational training access low & unequal; urban/rich have more access; severity lowers access
Mahal et al. (2024)	Earnings and conversion gaps for PwDs in India	>85k households + qualitative data	Econometric + interviews	PwDs earn less and spend more; higher poverty risk; transfers not enough
Patel and Karkare (2019)	Accessibility of Computer-Based Tests (CBTs) for PwDs	Visually impaired candidates in India	Survey: data analysis of barriers	86% said standard exam time not enough; 95% found extra time helpful; <80% disability prefer magnifiers, >90% prefer screen readers; scribes helped some but not all

Theme 1: Skill Development and Disability – Benefits of Vocational Training

The development of skills is a significant channel for persons with disabilities (PwDs) to enhance their prospects of life and their status in society. Haldar and Bisai (2024) study explicitly indicate that vocational and technical training enables PwDs to acquire skills, yet the coverage remains tiny. Just 3.08% PwDs had vocational education, and just 1.08% received

technical training. Nevertheless, the study detects a favourable association among education, skill and improved economic status of the household. That is to say, if vocational training becomes simpler to access, it has the potential to provide PwDs better employability prospects and greater respectability within society.

Vanitha (2016) provides evidence drawing on the Karnataka context that vocational training skills (VTS) like book binding, tailoring, paper bag making or embroidery may be taught to children with intellectual disability. It was found that if appropriate use is made by the teacher of systematic task analysis and training methodology even the student mildly or moderately disabled accomplishes the job efficiently. That is to say, disability is less the problem than the access to training and the nature of teaching methodology.

Correspondingly, Nayar and Manoj (2022) describe the training offered by Civil Society Organisations (CSOs) such as Kudumbashree and KSSS under Community Based Rehabilitation (CBR). They offer ICT based training and special education that enables PwDs to remain independent, and also enables families to become stronger. Skill training here is viewed neither as charity nor alms, rather empowerment and dignity.

Mahal et al. (2023) highlight the wider economic issue. They do not study a training program, but they show that PwDs in India have lower earning and less work participation than non-disabled persons. This shows why skill training like COPA in ITIs is very important. Without skills, PwDs are stuck in informal jobs and poverty. It is further contended by Tara, Kumar and Pilz (2016) that ITIs play the key role in skill development among India's youth, including COPA trade. Although it is not specifically on disability, the information is transferable to PwDs too. Quality vocational education improves employability and moves PwDs towards confidence and independence.

Venkatesh, Reddy and Angothu (2023) deal specifically with individuals with intellectual disability. They demonstrate that vocational intervention may enhance opportunities even though the majority of the programs remain restricted or non-structured. Nevertheless, the training develops the self-confidence of persons with disability and renders them employable. Hazarika et al. (2020) also found that psychosocial and vocational training improves social competence and self-help skills in children with disabilities. This shows carefully planned training can make PwDs more independent.

Finally, Patel and Karkare (2019) remind that vocational skill training needs accessible systems as well. Without enabling technologies like screen readers or magnifiers, PwDs cannot perform their best on computer platforms like CBTs. Vocational empowerment therefore encompasses accessibility.

Theme 2: Role of ITI COPA Course – Employability & Digital Skills

The ITI COPA (Computer Operator and Programming Assistant) course is gaining immense significance for persons with disabilities (PwDs) in India, since the digital economy now demand computer literacy and not just manual labour. Haldar and Bisai (2024) demonstrate that the majority of PwDs trained are pushed into low profile trades, and hardly any into

technical or digital training. That is where courses such as COPA come into the picture and provide PwDs an opportunity to access better employment where thephysical boundaries play less role.

Vanitha (2016) proves that with systematic teaching, even students with mild and moderate disability can learn skills well. While her study focused on traditional trades like tailoring and greeting card making, the lesson is clear: if PwDs can master manual work, they can also master digital skills when training is structured. In Kerala, Nayar and Manoj (2022) further highlight how ICT-based training under CBR programs helped people with disabilities become more independent and confident. This shows that COPA course, which teaches computer literacy, programming basics and office applications, is a good bridge for employability.

Mahal et al. (2024) observed that PwDs experience vast earnings gaps and remain confined largely to informal employment. Online skills from COPA can bring them into formal and remote employment, which is vital for social inclusion. Tara and Pilz (2016) added that COPA is a favourite ITI trade, and if the quality enhances and the training is aligned with industry demand, COPA trainees will attain higher employment prospects.

Other researches confirm the same. Venkatesh et al. (2023) demonstrated vocational programs tend to be restricted, yet COPA has the potential to open possibilities. Hazarika et al. (2020) demonstrated training enhances independence, thus COPA is able to offer both technical expertise and confidence. Patel and Karkare (2019) remind that accessibility within computer-based systems is required, or else COPA students with disability would experience the same impediments.

Theme 3: Economic Upliftment: Income Generation, Self-Employment, Job Market Inclusion

Economic empowerment of persons with disabilities (PwDs) is strongly linked to their access to vocational training, employment and information technology inclusion. Haldar and Bisai (2024) explain the fact that PwDs from richer city-based families have higher chance to access vocational training, while poorer rural families fall behind. This shows the manner increased digit oriented training like ITI COPA would disrupt the poverty trap, as computer skills would offer gateways into the formal and online jobs. Authors further recommend increased technical institutions on disability inclusion, so PwDs would really level the playfield within the labour market.

Vanitha (2016) shows evidence that vocational skills provide a direct pathway to self-employment. Skills training in tailoring, paper bag manufacture or carpentry provided disabled students small but valuable income opportunities. This is a valuable lesson for COPA, since ICT services such as data entry, freelancing or operating small computer service-centres can produce the same opportunities but on a larger income scale and higher demand from the market.

For the Indian State of Kerala, Nayar & Manoj (2022) show that CSO initiatives like Kudumbashree Buds Centres and the KSSS trained PwDs and empowered them to start petty

shops, rearing goats, screen printing or poultry. By offering microfinance opportunities and access to pensions or equipment, the disabled were integrated into real income generation. This affirms that vocational training and ICT training is neither charity but rather empowerment and economic independence.

Mahal et al. (2024) come up with the terms “earnings gap” and “conversion gap”. PwDs earn less but spend more to keep the same level of living, and getting trapped into poverty. COPA and other ICT training reduce dependency on the informal labour force and stimulate self-employment into the digital economy, reducing the double gap.

Tara and Pilz (2016) also highlight that ITIs with good quality training and industry links are better at placing students in jobs. For PwDs, COPA can translate into small businesses like cyber cafes, typing centres or freelancing. Venkatesh et al. (2023) remind us that many PwDs struggle to move from training to actual jobs due to stigma and low demand. Linking COPA with supported employment and job market partnerships is needed. Finally, Patel and Karkare (2019) show that accessibility in digital exams is essential, otherwise PwDs cannot enter higher education or jobs. Accessible COPA training therefore directly supports economic upliftment by giving equal entry to labour market.

Theme 4: Challenges – Barriers to Inclusion

Even when skill training offers numerous advantages, Indian persons with disabilities (PwDs) experience severe obstacles hindering their inclusion. Haldar and Bisai (2024) demonstrate the continued prevalence of discrimination and disparity. Females with disabilities remain behind males in receiving vocational and technical training. Caste variations also exist, since SC and ST PwDs experience poorer prospects than general. There is further rural–urban disparity, since urban PwDs enjoy closer institutions and the backing of NGOs. A second concern is the low coverage by disability certificates that deprive numerous PwDs of availing education or employment benefits. Those institutional gap complicate economic development significantly. Vanitha (2016) discovered the same issues within the schools. Boy students were trained more frequently in higher-level skills such as carpentry or screen printing, whereas girl students received tailoring or embroidery. Students possessing moderate intellectual disability were trained on very simple activities. This indicates stereotypes rather than capacity tend to determine the training. Training on the basis of interest and potential is argued by the study, and the same lesson is applicable to contemporary computer courses such as COPA.

Nayar and Manoj (2022) report difficulties despite good ICT infrastructure in Kerala. The poor cannot afford devices, the internet or assistive technology. There is strong social stigma too, where PwDs are looked at with sympathy rather than employment. This reliance on NGOs is an indication that government support alone may not enough.

Mahal et al. (2024) include labour market discrimination, mobility concerns, and additional costs of living as important hurdles. Those keep PwDs on the sidelines even when skill programs are available. Tara and Pilz (2016) mentioned lack of trained teachers, aging equipment and poor industry connections in ITIs too, which become barriers for disabled youth.

Other studies confirm the same. Venkatesh et al. (2023) mention stigma from employers, lack of family support, and absence of standard curriculum. Hazarika et al. (2020) found girls with disabilities face lower outcomes due to low family involvement and stigma. Patel and Karkare (2019) show digital barriers in CBTs like inaccessible fonts or weak screen reader support, reducing independence.

All these researches demonstrate that vocational training is insufficient on its own. Absent the elimination of gender bias, stigma, access issues and economic hurdles, courses such as COPA cannot reach full inclusion among PwDs.

Discussion

The findings from this study show that the skills offered by COPA apply quite strongly to the Indian digitally-enabled economy. Training initiatives like COPA provide computer literacy, office familiarity, programming basics and computer data entry, which are now required in government employment alongside private employment (Tara and Pilz, 2016). In the context of PwDs, the same skills stand to be immensely useful given the fact that employment may be achievable on the basis of computers using assistive technology, and it does not inherently involve strenuous bodily labour. This makes COPA an inclusive pathway towards employment and self-employment opportunities involving online freelancing, cyber cafes or digital services (Mahal et al., 2024).

The intervention of government policies, NGOs and the private sector is also crucial. Literature indicates that CSOs Kudumbashree and KSSS in the Indian state of Kerala offer ICT-based training and microfinance to facilitate disabled individuals to initiate income activities (Nayar & Manoj, 2022). Government efforts through ITIs also assist, although gaps exist on the quality of instructors, curriculum and industry interfaces (Tara AND Pilz, 2016). Private sector employers must also eliminate stigma and become receptive to the employment of PwDs with digital competencies (Venkatesh et al., 2023).

Nevertheless, the challenges are evident. Hurdles consist of gender and caste disparity, rural–urban divide, absence of disability certificates (Haldar and Bisai, 2024), stereotypes during training (Vanitha, 2016), and lack of digital accessibility in examinations and workplaces (Patel and Karkare, 2019). Hurdles restrict the complete success of COPA for PwDs.

It is found that there lies immense economic opportunity in the COPA training, though it should be aligned to inclusive policies, accessible infrastructure and the enabling role played by NGOs and industry. Then PwDs would be able to use their skills towards income, dignity and social inclusion.

Conclusion and Recommendation

This research reveals that ITI COPA course offers a potential avenue for the economic empowerment of persons with disabilities (PwDs) in India. COPA offer fundamental IT skills such as computer operation, data entry, office application & programming, which come into

good use even in the present day IT economy. Evidence from research (Tara and Pilz, 2016; Mahal et al., 2024; Nayar and Manoj, 2022) confirm that skill training when accompanied by adequate infrastructure support & social backing enhances employability, income generation & independence among PwDs. Nevertheless, challenges such as gender & caste discrimination, rural–urban disparity, low usage of assistive technology & stigma remain exclusionary (Haldar and Bisai, 2024; Vanitha, 2016).

From the study, it is suggested that COPA courses should become inclusive by offering adapting technology, better trained faculty, and greater connectivity with industry for placements. NGOs-government collaboration would be beneficial towards microfinance and self-employment among PwDs, and private businesses should be sensitized to de-stigmatize and embrace skilled disabled workers.

Limitations and Future Research

This research is founded on secondary scanning of sources, thus it cannot reflect all local experience. Future studies should employ field surveys together with case research on COPA-trained PwDs to check actual income effects, employment tendencies and social inclusion. Comparative research on different regions may also provide additional evidence to guide policy and practice.

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