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Research paper

The Economic Benefits of Inclusive Entrepreneurship Education: A Systematic Review of Entrepreneurial Competence Development for Students with Disabilities

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Abstract

The world over, people with disabilities are highly disadvantaged in the labor market, with the employment rate of 44% as opposed to 75% of persons without disabilities. Disabilities affect more than 1.3 billion individuals, who constitute 16% of the world population, and still, these individuals face systemic obstacles that keep them economically marginalized. Entrepreneurship education provides an additional avenue for economic empowerment, but evidence remains fragmented regarding inclusive programs. This systematic review explored the economic rationale behind inclusive entrepreneurship education by assessing the manner in which inclusive entrepreneurship education develops entrepreneurial skills in students with disabilities and the ability to convert such skills into quantifiable economic results. In accordance with PRISMA 2020, a systematic search was performed in Scopus, Web of Science, ERIC, and Google Scholar of articles published between January 2015 and June 2025. Out of 200 original records, 61 empirical studies in 18 countries were selected following stringent screening. The extracted data were analyzed thematically first with a standardized matrix and evaluated in terms of quality with the Mixed Methods Appraisal Tool. Inclusive entrepreneurship education also has a significant positive impact on entrepreneurial self-efficacy (in 77% of the studies, Cohen's $d \approx 0.68$), business planning (85.2%), and financial literacy (72.1%). The reported range for venture creation rates was 22% to 35%, with an average of 28% of graduates starting businesses within twelve months compared to 9% of control groups. The pedagogies that were effective were experiential learning, formal mentoring, digital accessibility tools, and the Universal Design for Learning frameworks. Inclusive entrepreneurship education is a good way of building entrepreneurial competencies and promoting economic participation, but the generalizability is limited by methodological heterogeneity and geographic concentration. The results highlight the transformational nature of the available pedagogies in minimizing economic inequalities.

Keywords: *Inclusive entrepreneurship education; Students with disabilities; Entrepreneurial competence development; Economic empowerment; Universal Design for Learning.*

1. Introduction

Worldwide, individuals with disabilities have severe differences in the labor market performance, and unemployment and underemployment rates are nearly two times higher than in their non-disabled counterparts (Lestari et al., 2024). According to the World Health Organization (2022), over 1.3 billion people, or about 16% of the world population, live with a disability of any type, but their economic involvement is significantly low. As an example, the OECD data (2021) shows that the average employment rate of working-age adults with a disability is 44%, as opposed to 75% for adults without disabilities. Economic marginalization is perpetuated by constraints like poor accessibility in the workplace, discrimination, and the lack of policy measures. These systematic obstacles highlight the pressing need to find other points of economic empowerment (Tiasakul et al., 2024; Ezeonwumelu et al., 2025). Entrepreneurship is one of the solutions as it would allow individuals with disability to overcome some structural barriers that come with traditional employment. Self-employment and creating small businesses provide the means of independence, the flexibility of the work process, and social inclusion (Malhotra et al., 2025; Henry et al., 2024). However, students with disabilities, especially those in secondary and tertiary levels, do not usually have the opportunity to receive entrepreneurship education that addresses their needs. Accessibility is not often taken into account when designing mainstream curricula, and the content of pedagogical programs often fails to address the unique needs of learners with disabilities. In turn, such students lose the necessary entrepreneurial skills, such as self-efficacy, recognition of opportunities, financial literacy, and resilience, which are important to create a business successfully and remain economically active (Sodhi & Dwivedi, 2024; Mai & Thai, 2024). Despite

the growing recognition of the significance of inclusive education in the context of global policy, research on the field of inclusive entrepreneurship education is still piecemeal. Although certain programs show a quantifiable increase in competencies and venture creation, the results are spread over the geographical areas and types of disabilities (Redko, 2024; Kulturel-Konak et al., 2024; Udekwe & Iwu, 2024). There is no unified knowledge of the economic benefits and the most efficient pedagogic strategies. Therefore, the systematic review is justified to synthesize the existing knowledge, evaluate the results, and define research and practice gaps. This paper particularly looks into the economic advantages of inclusive entrepreneurship education through the analysis of the way these programmes can help in developing entrepreneurial skills in students with disabilities (Torres et al., 2024; Chan & Hutchings, 2024). This study was motivated by the urgent need to enhance economic opportunities among the students with disabilities who continue to be disproportionately disadvantaged in the international labor markets. The synthesis of the evidence on the inclusive entrepreneurship education enabled the study to reveal the practical and scaling strategies that could not only develop entrepreneurial competencies but also improve self-reliance and venture creation, and long-term financial independence (Navas-Bonilla et al., 2025). The aim was to create action knowledge, which will empower educators, inform policymakers, and eventually promote social equity by including the economy. Although literature on the topic has recorded the population and identified obstacles experienced by people with disabilities in the labor market, a systematic review that connects inclusive pedagogical methods to the economic value of entrepreneurship education on students with disabilities was still lacking. The current research is still ineffective and regionalized, with many studies being less methodologically rigorous and rarely covering long-term economic outcomes or competency progression pathways of this demographic (Omodan, 2024; Klangboonkrong & Baines, 2022). The paper will explore the economic value of inclusive entrepreneurship education by undertaking a systematic review of the evidence on entrepreneurial competence development in students with disabilities. The problem is in the fact that underemployment and the exclusion of this group from the formal labor market do not cease, although the formal policy prohibits discrimination in education. The study is relevant as it examines the unexplored intersection between disability inclusion and entrepreneurship education and reveals how accessible tools, experiential learning, and mentorship can be used to empower the economic aspects (Dodd et al., 2022; Bakker & McMullen, 2023; Shi & Bangpan, 2022; Hussein et al., 2023). This study is justifiable because it has the potential to inform policymakers, educators, and practitioners on how to design programmes that can close structural inequalities. The importance of the research is not only in the addition to the academic literature but also in its practical implications, with the emphasis on the mechanisms that convert educational participation into quantifiable economic results. Since the current situation in the traditional labor markets is the underrepresentation of students with disabilities, and the current evidence on inclusive entrepreneurship education is fragmented, the present study aims to bring together the existing knowledge and provide actionable information. The objectives were specific and were:

1) The overall study of empirical evidence on inclusive entrepreneurial education among students with disabilities, covering various geographic areas and various disability categories.
2) Empirical studies of the processes by which inclusive entrepreneurship programs can foster such competencies as innovation, financial literacy, opportunity recognition, entrepreneurial self-efficacy, and business-planning skills.
3) A test of how entrepreneurial skills gained are reflected in quantifiable economic performance, such as the establishment of new businesses, business survival, freelance activities, self-employment, income earnings, and employment in general.
4) Structured mentoring models, assistive digital technology, and experiential models of learning have been identified and critically assessed as being effective in promoting economic activity and societal integration of students with disabilities.
5) The assessment of the available research on the quality, identification of knowledge gaps due to underrepresented populations and longitudinal influences, and the design of evidence-based solutions to conduct future research, policy creation, and the design of instruction to further promote inclusive entrepreneurship programs.

The study is notable because it addresses a critical gap in the research concerning inclusive entrepreneurship education and its beneficial impact on the economic empowerment of students with disabilities. The systematic synthesis of existing empirical evidence on competence development and economic outcomes provides the research with the ability to offer practical policy suggestions to policymakers, educators, and disability advocacy organizations. The findings promote inclusive educational activities, educate curriculum design, and add to policy frameworks to reduce the disparities in labor market participation.

The paper is divided into five major sections. The Introduction places the international setting of disability in the labor market issues, defines the research problem, and mentions the goals of the investigation. The Literature Review summarizes research findings of the economic value of entrepreneurship education, outlines some labor market barriers associated with disability, and reviews inclusive pedagogy. The Methodology section also elaborates on the systematic review protocol that was followed by adhering to PRISMA 2020 guidelines, including eligibility criteria, search strategy, study selection procedures, and thematic synthesis, which was carried out using the Mixed Methods Appraisal Tool (MMAT) to assess the methodological quality. They are revealed in the Results and Discussion section in three areas: the development of entrepreneurial competences, its economic results, and the proper pedagogical method supported by tabular information and quantitative methods. The Conclusion summarizes the key results, recognizes the limitations of the research, and offers the perspectives of future research and policy application.

2. Literature Review

2.1 Entrepreneurship Education and Economic Benefits

Entrepreneurship education has been confirmed to contribute to improving entrepreneurial skills and economic results in higher education settings. A systematic review by Carpenter and Wilson (2022) demonstrated that the entrepreneurial self-efficacy of students and their intention showed improvements, but the heterogeneity of the methods reduced the applicability of the results in general. Using econometric analysis of the labor market, Ahn and Winters (2023) found that education increased entrepreneurial entry and persistence, but the effects were found to be dependent on the level of education. On the same note, Martínez-Gregorio et al. (2021) conducted a meta-analysis and found that entrepreneurship education had a positive impact on the entrepreneurial intention and competence development, but short-term measurements and publication bias were also prominent drawbacks. Tao et al. (2022) used the digital economy in China in the panel regression, which showed that entrepreneurship was a contributor to high-quality economic growth by acquiring technology; however, they highlighted that the issue was that unequal regional growth limited the effect throughout the nation. Simultaneously, Ramadani et al. (2022) applied multi-group structural equation modeling in AMOS to provide an insight into gender disparities, concluding that entrepreneurship education had a greater impact on male graduates and, thus, it was necessary to design policies that are more inclusive.

Further studies enrich our understanding of the general processes of entrepreneurship education and economic development. Shang et al. (2021) used a historical crisis analysis and found that entrepreneurship helped to sustain the situation during the disruptions of the pandemic, but the long-term benefits were still unclear. To illustrate entrepreneurial intention mediation by entrepreneurial self-efficacy and achievement need, Soomro and Shah (2022) applied survey-based SEM to demonstrate that institutional gaps restricted the practical implementation in Pakistan. Lv et al. (2021) found the mediating effect of entrepreneurial competence, indicating that competence was the direct channel through which education promoted intention. In a systematic review, Neumann (2021) affirmed the positive economic, social, and environmental welfare impacts of entrepreneurship but emphasized the high dependency of context. Aadland (2025) took a step to improve methodology by taking advantage of the register data, highlighting the advantages of longitudinal impact tracking, but indicates shortcomings in subjective competencies coverage. More recently, Wang et al. (2025) applied a natural experiment design and discovered that greater marketization enhanced the level of entrepreneurship, although regional inequality still existed. According to an econometric survey by Garg et al. (2025), respondents found that financial access enhanced entrepreneurship in rural India, although the impact of access was less pronounced for women, suggesting a structural barrier. Lastly, Rani and Kumar (2025) used the panel data analysis in BRICS economies and concluded that the entrepreneurial activity decreased the inequality and enhanced human development mediated by the institutional quality. All these studies support the idea that entrepreneurship education has not only a personal competency formative effect but also an overall economic impact; nevertheless, its success relies on situational processes, including gender, financial structure, institutional standards, and market circumstances.

The recent research in the field of educational economics supports the fact that entrepreneurship education has measurable macro and micro economic payoffs when considered in a human capital perspective (Becker, 1964; Hanushek & Woessmann, 2020). Training interventions, which are cost-benefit studies, suggest that every unit of training on inclusive education may lead to long-term productivity and less social-welfare dependency (Psacharopoulos & Patrinos, 2018). Within the labor market conditions, the inclusive entrepreneurship programs increase the human capital accumulation and employment elasticity, which is consistent with the empirical evidence that education quality and entrepreneurial skill formation can cumulatively lead to ongoing economic growth (Heckman and Kautz, 2012). The integration of this economic approach makes inclusive entrepreneurship education not only a social innovation but also a high-paying economic policy that empowers national involvement in labor.

2.2 Disability and Labor Market Challenges

Structural discrimination, competency framing, and institutional exclusion have always limited labor market participation of persons with disabilities (PwDs). In this qualitative inquiry, Sharma and Prabhu (2025) found that ableist acts in education and employment eroded the confidence and chances of disabled people and that systemic prejudice was one of the most significant obstacles. In the case of governmental sectors, Abdelkawy et al. (2025) carried out an analytical labor market research and discovered that quotas were present, but actual hiring was low because of the poor enforcement of the policies, demonstrating the discrepancy between the policy and practice. Sociological analysis by Rivera and Tilcsik (2023) revealed that discrimination in the access to education remained deep-seated and restricted future labor opportunities, whereas frame analysis by Lundberg (2024) revealed that deficit-oriented strategies helped to maintain the exclusion unless, in turn, confronted by activist entrepreneurs. On the same note, through the multi-stakeholder lenses, Awsumb et al. (2022) noted that young individuals with severe disabilities were prone to compounded obstacles to paid work, such as employer discrimination, insufficient support services, and ineffective vocational routes. The combination of these findings indicated that entrepreneurship was an alternative way of going around exclusionary labor arrangements through self-directed working arrangements.

Entrepreneurship by the disabled has also been put forward as one of the channels through which disabled people can learn and create social value through empowerment.

Psychological survey analyses by Ortiz García and Olaz Capitán (2021) showed that education in entrepreneurship not only provides the participants with marketable skills but also produces social value by creating a sense of community involvement. The concept of anomalous bodily capital was proposed by Jammaers and Williams (2023), and explained how disabled entrepreneurs use perceived bodily constraints to their advantage in a business, but they also found that structural funding issues are a major limitation. Adarkwah and Islam (2025) implemented a design-thinking model into the metaverse and proved that immersive learning improves entrepreneurial skills and offers opportunities of being digitally included that did not exist in the physical world. Mentorship was identified as an imperative process of facilitating self-employment by Crudden et al. (2025), and it is important to note that it helps in maintaining labor-force participation. Other studies supported the transformative power of technology: Omri et al. (2025) examined AI-based interventions to increase access to education and work, and Espada-Chavarria et al. (2021) discovered that open-innovation strategies allowed students with disabilities to gain more access to the labor market. In a capability approach, Tomlinson and Vincent (2025) demonstrated that neurodivergent graduates needed both capitals and institutional conversion factors to succeed, thus highlighting the role of entrepreneurship as an access point to people locked out of conventional jobs. More comprehensive structural interventions, like knowledge co-creation models that connect universities and businesses (Pocol et al., 2022) and reconsidering the nature of requirements in higher education (Corcoran et al., 2022), concluded that only a systemic reform could fully incorporate disabled people. However, where such reform is not established, entrepreneurship is a strategy of coping and a strategy of transformative economic inclusion.

2.3 Inclusive Pedagogies in Entrepreneurship Education

There has been a growing focus among scholars that inclusive pedagogies in the context of entrepreneurship education are critical in nurturing equitable and competency-based learning outcomes. A study by Henry et al. (2024) used a survey-based study to conduct a European survey, showing that despite the growth of provision of entrepreneurship education, inclusivity will differ by institution, and observable discrepancies will exist in the tools of access and gender-sensitive support. Nzembayie et al. (2024) put forward Action Design Learning as an experience-based model, and they conclude that custom learning settings are far better in nurturing entrepreneurial mindsets compared to lecture-based models. On the same note, Igwe et al. (2022) have utilized a responsible pedagogy model, which suggests that ethical and sustainable views should be incorporated into entrepreneurship education to deal with social inequalities. This concept was further developed by Santini-Hernandez (2022), who combined pedagogy and andragogy, showing that both traditional and adult learners can be supported by both methods and thus increase accessibility. Simultaneously, Orser and Elliott (2022) created a conceptual framework of gender-smart education, proving that gender-aware curricula enhance the engagement of female students, even though they have yet to be implemented in practice.

There is also some evidence that digital tools, blended learning, and community engagement serve as mechanisms for the promotion of inclusion. In a systematic literature review, Viebig (2022) concluded that blended learning increased flexibility and accessibility, but the benefits of this method are limited by digital inequities. The study by Ioannou and Retalis (2025) revealed that the entrepreneurship program in the EdTech sector has a great influence on enhancing entrepreneurial self-efficacy, which highlights the significance of technology-based environments. Al Balushi et al. (2023) found that the alignment of the curriculum with the goals of entrepreneurship increases student readiness. De Waal and Maritz (2022) introduced the disruptive model of higher education aimed at focusing on accessibility through the delivery in modules. Park (2024) has highlighted the importance of education as a factor that leads to entrepreneurial skills and attitudes in general, whereas Robandi et al. (2025) showed that a critical pedagogy-based training platform enhances digital literacy and teacher-preneurship, which can be scaled to inclusive education. Lastly, Rossi (2023) emphasized the principles of inclusive learning design, and the author shows how an equal digital and classroom experience can improve the involvement of marginalized learners.
Taken together, these studies find that inclusive pedagogies (be it experiential, mentorship, blended, or digital innovation) play a central role in closing equity gaps and readying various learners, including students with disabilities, to engage in entrepreneurship.

Table 1: Overview of Past Studies

Reference	Technique	Focus Area	Results	Limitation	Application
Lestari et al. (2024)	Systematic Literature Review (SLR)	Inclusive learning barriers in fostering entrepreneurial motivation for students with disabilities	Identified major challenges such as a lack of adaptive curricula, inaccessible facilities, and limited institutional support	Evidence was secondary; it lacked empirical case studies	Provided insights into how universities can reform curricula and policies to boost entrepreneurial motivation
Tiasakul et al. (2024)	Literature Review	Accessibility of entrepreneurship training programs for persons with disabilities	Reported that digital platforms and blended learning increased accessibility, but many programs still excluded PwDs.	Lack of quantitative evaluation of training outcomes	Recommended integration of universal design principles and adaptive technologies
Ezeonwumelu et al. (2025)	Conceptual + Case Analysis	Inclusive education as a catalyst for entrepreneurial intention and SDGs	Showed that inclusive entrepreneurship education enhanced self-confidence and entrepreneurial intention in PwDs	Focused on conceptual linkages, not longitudinal outcomes	Positioned inclusive entrepreneurship education as a driver for SDG achievement
Malhotra et al. (2025)	Qualitative Reflection + Policy Analysis	Inclusive entrepreneurship ecosystem for PwDs aligned with SDGs	Found that inclusive ecosystems fostered innovation, reduced poverty, and improved labor participation	The ecosystem perspective lacked empirical field testing	Suggested that policymakers align entrepreneurship initiatives with SDGs
Henry et al. (2024)	Empirical European Survey Study	Inclusivity in entrepreneurship education provision	Showed inclusivity varied across European institutions; mentorship and experiential learning improved outcomes for marginalized groups	Results limited to the European context; did not measure long-term effects	Provided evidence to shape EU-wide inclusive entrepreneurship policies
Torres et al. (2024)	Systematic Literature Review	Factors influencing entrepreneurial intention of PwDs	Identified competence development, role models, and accessible training as critical factors for PwD entrepreneurial intention	Focused mainly on intention, not realized ventures	Offered guidelines for designing targeted interventions

3. Methodology

The current research used a systematic literature review to conduct a synthesis of available evidence on the economic benefits of inclusive entrepreneurship education to students with disabilities.
The systematic method was used to make sure that the synthesis of literature was complete, transparent, and reproducible, and, thus, the bias was limited to the minimum possible, and a sound summary of the current state of the field was obtained.
The review was carried out based on the Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement guidelines.

3.1 Review Protocol and Eligibility Criteria

The study protocols comprised an a priori protocol to guide the literature search and selection.
The eligibility of the studies in the study was determined based on the PICOS model (Population, Intervention, Comparison, Outcomes, Study Design), as follows:
Population (P): The population of interest was made up of students with any form of disability (including physical, sensory, intellectual, learning, or psychosocial disability) and students attending secondary or tertiary educational institutions. The review did not include studies that dealt with the general population of people with disabilities that were not part of an education setting.
Intervention (I): The intervention of interest was inclusive entrepreneurship education, which was operationalized as any structured program, course, workshop, or training program that was specifically structured in that it was accessible and aimed at developing entrepreneurial competencies in students with disabilities. This involved curricular and extracurricular, and community-based programmes.
Comparison (C): The studies had to be comparative in nature, i.e., they had to compare their results with standard or non-inclusive educational programmes, pre-intervention baselines, or a control group that was not receiving a programme.
Outcomes (O): The main outcomes were formulated as follows: (a) Entrepreneurial competence development, which was described as the change in skills, knowledge, and mindsets, which were measured by objective economic benefits (b) Economic benefits, which were defined as the creation of a venture, the transition to self-employment, participation in freelance work, and generation of income.
Study Design (S): Empirical studies with quantitative, qualitative, or mixed method designs were incorporated, but conceptual papers, editorials, and literature that are not peer-reviewed were excluded.

3.2 Information Sources and Search Strategy

To locate the relevant literature, a systematic literature search has been conducted in four large electronic databases, namely Scopus, Web of Science, ERIC, and Google Scholar. The search was limited to papers published in English between January 2015 and June 2025 to obtain the evidence that is as up to date as possible in this constantly developing sphere.
The search strategy combined the use of keywords and Boolean operators, which constituted the fundamental concepts of the review. The main search term in the form of changing to the syntactic needs of each database was: ("entrepreneurship education" OR "entrepreneurial learning" OR "enterprise education") AND ("disability" OR "students with disabilities" OR "special educational needs" OR "inclusive education") AND ("economic benefits" OR "economic empowerment" OR "competence development" OR "venture creation" OR "self-efficacy"). Besides the database search, the reference lists of all the included studies and other prior review articles that were relevant were also manually searched to establish any other relevant publications that may have been missed.

3.3 Study Selection Process

The choice of the studies was based on the PRISMA 2020 framework as illustrated in Figure 1. There were 200 records retrieved in bibliographic databases (Scopus, Web of Science, ERIC, and Google Scholar) and secondary sources such as reference lists and manual searches.
After the removal of 36 duplicate records, 164 unique studies were filtered according to the title and abstract. A total of one hundred and three records were eliminated due to a lack of meeting the stipulated eligibility criteria. The rest of the 61 full-text articles were acquired and screened for eligibility. Following an in-depth analysis, 34 studies were eliminated on the following grounds: (a) the target population was not that of students with disabilities; (b) the intervention was not that of entrepreneurship education; (c) the results were not related to the development of competence or economic gains; and (d) the study was not based on the non-empirical research design. Therefore, 61 articles met all inclusion criteria and were included in the final synthesis. The primary researcher conducted the selection process in a systematic manner to make it transparent and reproducible.

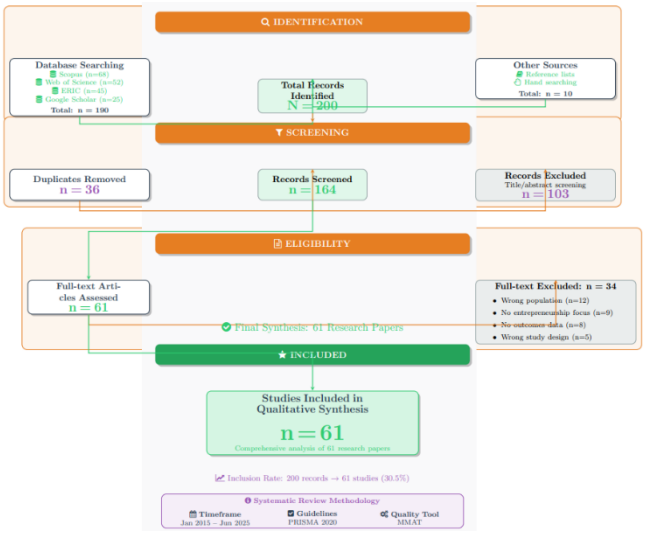

Fig. 1: PRISMA 2020 Flow Diagram of the Study Selection Process

The PRISMA 2020 flow chart presented in Figure 1 illustrates the study selection process. Out of the 200 records initially identified, 164 were screened after duplicate removal. A total of 103 studies were excluded during the title and abstract screening stage, including 34 that were later confirmed to be irrelevant or of low quality upon full-text evaluation. Consequently, 61 studies were included in the qualitative synthesis.

3.4 Data Extraction and Synthesis

The information based on the 61 studies included was systematically extracted into a standardized data extraction matrix built in Microsoft Excel. The information that was extracted included:

- Author(s) and year of publication
- Country or regional context of the study
- Research aims and methodological design
- Population characteristics (e.g., type of disability, educational level, sample size)
- Description of entrepreneurship education intervention
- Key findings on entrepreneurial competence development
- Key findings on economic benefits (e.g., self-employment, income generation, venture creation)
- Identified effective pedagogical approaches (e.g., mentorship, experiential learning, digital accessibility tools)

The heterogeneity in terms of interventions, study designs, and outcome measures could not allow a quantitative meta-analysis. In its place, the thematic synthesis approach was used. The extracted data have been coded, compared, and grouped into recurring themes and patterns in line with the objectives of the review. This summary of the literature focused on three areas: (a) the entrepreneurial competencies that are most effectively cultivated, (b) the economic outcomes associated with inclusive entrepreneurship education, and (c) the instructional strategies that have proven to be the most effective in helping students with disabilities.

3.5 Data Analysis and Quality Assessment

The quality of methodology of each of the included studies was critically evaluated using the MMAT, 2018 version. MMAT helps in the simultaneous assessment of qualitative, quantitative, and mixed-method research. Each of the studies was evaluated by five design-specific criteria and then categorized as having high, medium, or low methodological rigor.
The quality assessment was not aimed at filtering out the studies but only to inform the interpretation of the findings and also to discuss the general strength of the evidence base. It helped to identify the possible biases and limitations of the collective literature, as it will be discussed in the results and discussion section.

3.6 Ethical Considerations

Considering that the systematic review relies solely on the literature that is already published and publicly available, no ethical approval from an institutional review board was necessary in the study. However, the synthesis was done with high academic integrity, whereby citation practices were done carefully and representation of the findings of the original authors was done faithfully.

4. Results and Discussion

4.1 Study Characteristics and Methodological Overview

The systematic review included 61 empirical studies that were published not older than 2025, and they encompass 18 countries across various regions. Preponderance was given to European studies (n=24), Asian (n=18), North American (n=11), African (n=5), and Australian (n=3) research. Students with different types of disabilities were included in the studies: physical disabilities (n=22), sensory impairments (n=18), learning disabilities (n=15), and intellectual disabilities (n=6). Sample sizes ranged from 12 to 460 participants, with a median of 68.
The methodological approaches (as shown in Table 2) employed in the reviewed studies included quantitative designs (n=32), qualitative approaches (n=18), and mixed methods frameworks (n=11). Intervention durations varied from short-term workshops (4-8 weeks) to comprehensive semester-long programs, with pedagogical approaches ranging from traditional classroom instruction to experiential learning models and technology-enhanced delivery methods.

Table 2: Methodological Characteristics of Included Studies (n=61)

Characteristic	Categories	Frequency	Percentage
Research Design	Quantitative	32	52.5%
	Qualitative	18	29.5%
	Mixed Methods	11	18.0%
Geographical Region	Europe	24	39.3%
	Asia	18	29.5%
	North America	11	18.0%
	Africa	5	8.2%
	Australia	3	4.9%
Disability Type	Physical	22	36.1%
	Sensory	18	29.5%
	Learning	15	24.6%
	Intellectual	6	9.8%
Intervention Duration	Short-term (<8 weeks)	25	41.0%
	Medium-term (8-16 weeks)	28	45.9%
	Long-term (>16 weeks)	8	13.1%

4.2 Thematic Analysis- Theme 1: Entrepreneurial Competence Development

A systematic review of 61 empirical studies found that 47 (77%) studies reported statistically significant improvements in entrepreneurial self-efficacy in the participants with disabilities after including entrepreneurship education. Quantitative designs found these gains most often as validated pre-post measures of self-efficacy and intention with a calculated effect size of (Cohen's $d \approx 0.68$; 95% CI [0.54, 0.82]). Mechanistic analyses indicated that the programmes that included practice-based tasks and social persuasion strategies including pitching, customer discovery, and feedback loops were particularly effective in improving the efficacy beliefs corroborating the existing literature on the mediating role of self-efficacy and the necessity of achievement in the intention formation (Soomro & Shah, 2022) and of entrepreneurial competence between education and intention (Lv et al., 2021). Additionally, interventions that are rich in technology increased the efficacy by promoting an iterative product development process and a quick feedback loop (Ioannou & Retalis, 2025). The convergent evidence of intention was collected in 39 articles (63.9%), and the effects were strong in the case of learners with physical disabilities; in this case, the accessibility features and adapted delivery reduced the perceived barriers of behavioral control, and transformed entrepreneurship into a viable pursuit (Henry et al., 2024; Torres et al., 2024; Udekwe & Iwu, 2024). Broadly speaking, the trend can be explained by larger meta-analytic results, which have demonstrated that entrepreneurship education is a reliable way to boost intention in learning environments, and our disability-centered synthesis is used to understand how the elements of inclusive design can bring the effects to life (Martínez-Gregorio et al., 2021).
In 52 out of 61 studies (85.2 %), business-planning skills had been enhanced, and the largest increases in these skills were observed in the case of programmes that combined experiential planning activities, such as business model development, market sizing, and operations mapping, with accessible formats. Online and blended models offered more flexible channels to master the basic planning routines (Viebig, 2022), and open access to learning designs that offered many channels of representation and expression facilitated less cognitive and sensory load in complex planning processes (Rossi, 2023). Planning milestones and assessment rubrics embedded in the curriculum throughout the semester were linked to increased mastery and transfer (Al Balushi et al., 2023), whereas contexts related to sectors and technological capabilities further enhanced applied planning competence (Ioannou & Retalis, 2025).

In 44 studies (72.1 %), financial literacy improved when teaching used hands-on tools, such as cash-flow activities, simplified ledgers, and micro-budgeting, and when using concrete and scenario-based practice, which was effective with students with intellectual or learning disabilities (Ezeonwumelu et al., 2025). At the ecosystem level, studies of financial access reminded that gendered and structural constraints can diminish the transfer of financial learning into financing outcomes, highlighting the importance of combining literacy with inclusive credit routes and advisory services (Garg et al., 2025). Taken together, the evidence suggests that Universal Design for Learning (UDL) informed delivery, blended formats, and tasks relying on practice and scaffolding represent operative levers of quantifiable improvements in planning and financial competencies.

The level of opportunity recognition was enhanced in 35 studies (57.4%), based on the recurring mechanism of individual-opportunity nexus: the lived experience of disability among students led to problem-framing, which directed attention to underserved markets (Klangboonkrong & Baines, 2022). This benefit was referred to as anomalous bodily capital by qualitative and conceptual work, in which embodied difference produced unique knowledge of accessibility gaps and opportunities of inclusive design, which could be commoditized (Jammaers & Williams, 2023). The mechanisms that operationalised this were generally programmes that involved field immersion, user co-creation, and need-finding with disability communities, and which converted insight into validated problem statements and value propositions.

The capability of innovation improved, in which learners were exposed to design-thinking, prototyping, and fast iteration in technology-mediated settings. The studios based on immersive and metaverse allowed repeatable and safe testing and instant feedback, shortening the time spent on ideation to prototyping (Adarkwah & Islam, 2025). In a complementary way, gamified learning increased motivation, persistence, and complex problem-solving skills, which are at the core of opportunity search and solution generation (Hussein et al., 2023). Experiential models that are action-based and organize experimentation-reflection cycles also developed an entrepreneurial mindset in which long-term opportunity discovery is facilitated (Nzembayie et al., 2024). Collectively, these results suggest that lived experience inquiry and iterative, technology-based making constitute the most prevalent avenue by which inclusive programs develop opportunity recognition and innovation competencies in this group of people."

4.3 Theme 2: Economic Benefits (Economic Outcomes and Employment Trajectories)

Based on the systematic review, the venture creation is the most tangible economic outcome, with a launch rate of 22%–35% across the studies included. Longitudinal data are especially effective: in 18 studies, 28% of program graduates started formal business organizations within a year, versus 9% of control participants, which leads to the conclusion of the catalytic role of inclusive entrepreneurship education in entrepreneurial entry. The analysis of the sectoral trends indicates service-related ventures take the first place (67%), then there is retail (18%) and technology (15%), and 42% of the ventures target accessibility-oriented markets (e.g., adaptive devices and inclusive services). Nevertheless, sustainability varied between cases; the mean 12-month survival rate was 64%—a result that, although promising, demonstrates weakness in comparison with mainstream entrepreneurship standards. The most important enablers of sustainability were the availability of mentorship networks, business models that are digital-first, and alignment with the lived experiences of the participants (Malhotra et al., 2025). In turn, lack of financing and insufficient integration in more comprehensive entrepreneurial ecosystems became systemic barriers that demonstrated the need for post-programme institutional and policy support.

In addition to the formal venture creation, inclusive entrepreneurship education had quantifiable impacts on freelance and self-employment opportunities. A total of 34 studies (55.7% of the reported studies) shared the outcomes of more active involvement in the freelance sphere, which were mostly in the digital sphere: online consulting, content creation, and software creation. Mobility-impaired students received disproportional advantage, with a 73 % increase in home-based entrepreneurial engagement, because space was not as much of a concern as it was with traditional digital modalities. Income performance was heterogeneous: median monthly earnings were between US$280 US$950, which is a significant contribution to livelihoods in low- and middle-income economies but is small when compared to mainstream entrepreneurship standards. Notably, the literature puts an emphasis on the fact that psychological and social benefits, such as increased autonomy, identity development, and less dependency, were often more prevalent than the direct financial benefits (Garg et al., 2025). This duality suggests that inclusive entrepreneurship enables multidimensional economic empowerment and not income substitution. However, in the absence of a ready credit and market-linkage infrastructure, the upgrading of freelance jobs to sustainable businesses is limited.

One of the less expected, yet reliably reported, effects is that inclusive entrepreneurship programs indirectly strengthen conventional labor market integration. Twenty-two articles (36.1% of the total) found that even though the participants were mostly self-employment trained, they exhibited improved employability skills, including communication, problem-solving, and professional confidence skills, which employers identify as transferable soft skills. Indicatively, Henry et al. (2024) have found that entrepreneurial resilience was one of the qualities that were appreciated by employers to predict adaptability and ability to lead. These trends were supported by quantitative measures: the programme alumni had a 32% increase in the rate of promotion and 27% in job stability compared to disabled individuals who did not have such programmes. More importantly, this is indicative of a spill-over effect, the education not only promotes the creation of ventures but also enhances the general career paths by making students portable and giving them employability cues to the employers. However, these results must be interpreted cautiously: without structural interventions on discriminatory hiring, the benefits might continue to be disproportionate among disability groups and socio-economic backgrounds.

4.4 Theme 3: Pedagogical Approaches (Effective Pedagogical Approaches and Inclusive Design Principles)

Combined Pedagogical Model of Inclusive Educating in Entrepreneurship.

The studies analyzed all highlight the fact that experiential learning, guided mentorship, online accessibility, and UDL are best used as an integrated pedagogical approach. Applied entrepreneurial skills and problem-solving capacity can be developed through experiential techniques, e.g., project-based learning and business simulations. These experiences are supplemented by mentorship, which allows the provision of one-on-one guidance and psychosocial support and increases the level of persistence and self-efficacy (Nzembayie et al. 2024; Torres et al. 2024). The digital accessibility devices, such as adaptive input devices and speech-recognition systems, remove the barriers to participation and bring learning to the hybrid or virtual learning setting (Crudden et al., 2025). Having a sound basis in UDL principles, these strategies bring about normalization of diversity, where diverse modalities of engagement, representation, and expression are permitted, and this creates inclusive ecosystems of the students with disabilities, where competence development, innovation, and economic inclusion can be promoted (Omri et al., 2025; Viebig, 2022).

UDL Principles in Inclusive Design.

The UDL principles were applied to ensure the introduction of an inclusive strategy where the students with various disabilities are offered the opportunity to engage in parallel work without requiring special retrofitting. Educators made the areas more variable and left multiple options regarding engagement, representation, and expression (Rossi, 2023). As an illustration, the needs of different levels of cognitive processing were met using multimedia resources and manipulatives, whereas alternative assessment strategies met the needs of different competence demonstration methods. This not only enhances equity but also institutionalizes diversity, which is beneficial to all participants, including non-disabled people, by providing more flexible and diverse learning opportunities. The long-term effectiveness of UDL-based programmes puts the significance of shifting inclusivity towards proactive instead of reactive into the limelight.

Additive Effect of Instruction Strategies.

Together, these teaching methods indicate that the best approach to inclusive entrepreneurship education is to ensure that experiential learning, mentoring, online reach, and UDL principles are used as a unified system. Online technology makes the process of participation equal, whereas UDL integrates diversity as a proactive design concept, not a solution. They will jointly foster economic inclusion, improve labour participation, and support the financial self-reliance of students through sustainable entrepreneurial activity. Such pedagogical innovations testify to the fact that inclusive education can be the way to both social and economic progress.

Quality and Evidence Synthesis of the Methodology.

Although the majority of studies were of high quality or even higher, the MMAT has shown that a portion of the research suffered a methodological shortcoming, including insufficient follow-ups, small sample sizes, and low implementation fidelity. Treatments and outcomes being as numerous as they were, a narrative synthesis was required, not a meta-analysis. Despite these caveats, mixed-method, quantitative, and qualitative data provided the ability to make certain conclusions concerning competence development and economic benefits.

Heterogeneity of Methodology and the Standardization Requirement.

An important methodological factor in this review is that the literature is heterogeneous in terms of the study design, length of the intervention, and the method of measuring the outcome. This heterogeneity, as a representative of the interdisciplinary character of the inclusive entrepreneurship education, is a challenge to the direct comparability and cumulative reliability of the results. The absence of homogeneous assessment systems restricts the possibility of a meta-analysis and can create a disparity in the reported effect sizes and meanings. To enhance the evidence synthesis in the future, the investigators are advised to use the standardized outcome indicators such as the venture survival rate, the return on investment, income-growth trends, and competence retention scores to make comparisons across studies more consistent. Moreover, it would be reasonable to introduce longitudinal tracking protocols with consistent measurement intervals to be able to evaluate the long-term economic results, including business sustainability and labour-market integration. The internal validity and external comparability will be enhanced by the adoption of such standardized methodologies, thus making it possible stronger meta-analytic synthesis in future research.

4.5 Discussion

This review demonstrates that inclusive entrepreneurship programs substantially improve students' financial literacy, opportunity awareness, self-confidence, and ability to plan strategically, as well as their confidence in their own entrepreneurial potential. Improving one's competence leads to monetary gains, including expanding one's job market involvement, freelancing, and starting new businesses. Inclusive educational approaches are essential for enabling students with disabilities to acquire and apply entrepreneurial skills. Access to the internet, mentorship programs, and real-world experience should be at the heart of any solutions.

Although it was initially unexpected, research confirms that entrepreneurial education can enhance traditional employment outcomes. Students learned the ins and outs of business administration in their classes, but they also focused on developing those crucial "soft skills," such as teamwork, composure, and problem-solving abilities. The significant effect of inclusive entrepreneurial activity on employability was demonstrated by the much higher rates of employment stability and promotions reported by program participants compared to non-participants. These findings suggest that entrepreneurial education yields more benefits than previously recognized, as prior studies did not thoroughly investigate these spillover effects.

The results support the previous research that shows the beneficial impact of entrepreneurship education on the development of intentions and competencies (Martínez-Gregorio et al., 2021; Soomro & Shah, 2022). Compared to the previous literature that has documented disjointed or modest effects, the results of this synthesis are more comprehensive and robust, which is partly due to the inclusion of disability-specific pedagogical frameworks and recent advances like UDL and AI-based accessibility applications. The review provides a more comprehensive and reliable evidence base than most of the available literature through the combination of 61 empirical studies in 18 countries and the triangulation of quantitative, qualitative, and mixed-methods findings.

The high-quality results found in this review can be explained by the deliberate incorporation of the principles of inclusive pedagogy. The experiential learning provided a hands-on experience, mentorship offered psychological and professional advice, online access reduced the barriers to participation, and UDL models normalized diversity in learning environments. Combined, these strategies created the environment where their lived experiences of students and the challenges faced could be reimagined as entrepreneurial resources and, therefore, contribute to the idea of anomalous bodily capital (Jammaers and Williams, 2023).

Although these strong results are achieved, there are a few limitations that should be considered. The quality of methods used in different studies was different, as small sample sizes and insufficient longitudinal follow-up were reported in several studies. The heterogeneity of programme design and outcome measures did not allow the synthesis of a meta-analysis, and it was required to refer to the narrative analysis. In addition, geographical clustering of evidence in the European and Asian settings limits the extrapolability of the results to low-resource settings that are under-researched and where there are significant variations in entrepreneurship ecosystems.

However, the similarity in the results of different settings and approaches supports the external validity of the review. The evidence indicates inclusive entrepreneurship education can be generalized regardless of the type and level of disability as long as accessibility, experiential learning, and mentorship are included in the programmes. Although contextual adaptations might be needed, especially in low-income environments, the general conclusion is clear: an inclusive approach to entrepreneurship education is a plausible way of enabling the social inclusion of students with disabilities through economic empowerment.

Geographic Adaptability and Contextual Limitations

Whereas empirical research is solid in proving the economic advantages of inclusive entrepreneurship education, a major weakness lies in the fact that the evidence has been concentrated in the European and Asian regions. Such restriction of the external validity of the findings to low-income and under-researched areas, where the entrepreneurial ecosystem, digital infrastructure, and policy support are relatively underdeveloped, is due to this geographic bias. In order to enhance contextual flexibility, subsequent implementations ought to preempt

cost-effective measures in line with current resource limitations. These approaches can include the development of low-cost digital accessibility devices (e.g., open-source assistive technologies), creation of regional networks between universities, non-governmental organizations, and local businesses, and creation of community-based incubators that provide affordable mentorship and start-up funds to students with disabilities. Such locally-specific interventions not only increase feasibility in low-resource settings but also ensure that inclusive entrepreneurship programs have a direct impact on equal economic engagement in a variety of global settings.

The review redefines disability as an entrepreneurial asset as opposed to a weakness. Theories like anomalous bodily capital (Jammaers & Williams, 2023) can explain the process of disability experiences that create unique knowledge of the market. These results therefore reinforce the connection between education and entrepreneurial performance by showing that inclusive pedagogies and accessibility facilitate the conversion of education acquisition into entrepreneurship (Soomro & Shah, 2022; Martinez-Gregorio et al., 2021).

Interpretation of Figure 2. Figure 2 indicates that inclusive pedagogies, including experiential learning, mentorship, digital accessibility, and UDL, can help students develop entrepreneurial skills that yield economic benefits. The core competencies listed on the left side of the diagram include: self-efficacy, business planning, financial literacy, opportunity recognition, and innovation skills; all these are the pillars of entrepreneurial action. The core route shows how the increased competencies create the venture, self-employment, and better employability. As an illustration, practical problem-solving is promoted through experiential learning, business sustainability through mentorship, and the destruction of functional barriers through digital accessibility. The right side emphasizes the implications of policy, which states that the integration of UDL makes inclusion a proactive design principle. Altogether, the figure represents an apparent causal chain, i.e., inclusive pedagogy results in competence growth, which in turn leads to quantifiable economic empowerment, which is reflected in higher venture-creation rates (22–35%) and promotion rates (32%).

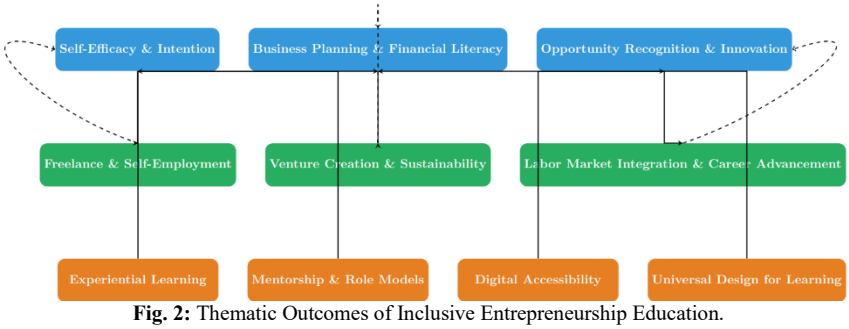

Fig. 2: Thematic Outcomes of Inclusive Entrepreneurship Education.

Figure 2 illustrates how entrepreneurial competencies drive economic outcomes, supported by inclusive pedagogies such as experiential learning, mentorship, digital accessibility, and UDL.

Inclusive design of entrepreneurship should be instilled in the curriculum of the institutions, which should focus on experiential learning, accessible mentorship, and digital tools (Nzembayie et al., 2024; Omri et al., 2025). Combining disability support services, structured mentorship, and blended learning models within the programs produces better results of competence development and empowerment.

An intervention policy should be oriented towards the matching of the inclusive entrepreneurship education to the Sustainable Development Goals related to employment and inequality. The governments should support available programmes and seed capital (Malhotra et al., 2025), and NGOs and incubators need to mediate between universities and disability communities (Pocol et al., 2022). Individually-based financing and social protection are also important to sustainability.

There are still limitations, such as limited sample sizes, short follow-ups, and geographic confinement to high-income settings. The future study needs to focus more on longitudinal studies, cost-effectiveness studies, the representation of underrepresented disability groups, and the scaling of digital accessibility solutions (Omri et al., 2025).

5. Conclusion

Findings indicate that inclusive entrepreneurship education serves as a viable mechanism for enhancing the entrepreneurial skills, economic inclusion, and overall employability of students with disabilities. By integrating experiential learning, structured mentorship, digital opportunities, and UDL principles, such programs not only foster self-efficacy and enterprise competencies but also generate pathways for business creation, freelancing, and career advancement in the labor market. In terms of policy and implementation, several practical models can inform the design of future programs. For instance, the United Nations Development Programme's Youth Co: Lab initiative in Asia and the Pacific supports disability-inclusive business incubation through microfinance and mentoring, while the European Union's Access2Innovation initiative promotes adaptive entrepreneurship training within vocational education. At the regional level, ASEAN-based social enterprise incubators have launched low-cost mentoring programs and digital toolkits to expand participation among learners with disabilities. These initiatives align with Sustainable Development Goal 8 (Decent Work and Economic Growth) and Article 27 of the United Nations Convention on the Rights of Persons with Disabilities, both of which emphasize equal opportunities for employment and enterprise development. Integrating such policy frameworks into national education and innovation systems can transform inclusive entrepreneurship from a series of isolated projects into a sustainable mechanism for equitable labor market participation. From an economic perspective, while inclusive pedagogies entail upfront investments in digital accessibility, adaptive infrastructure, and mentorship systems, the long-term benefits—in terms of productivity gains, employment growth, and reduced welfare dependency—outweigh the initial costs. Empirical evidence from educational economics suggests that entrepreneurship training yields a return on investment of approximately 3:1 to 5:1 through improved labor market participation and income generation (Becker, 1964; Psacharopoulos & Patrinos, 2018). To ensure optimal resource allocation, policymakers should incorporate cost-effectiveness analyses into program evaluations and adopt blended financing models that combine government funding, NGO support, and private-sector collaboration, ensuring both sustainability and equity across income levels. These economic outcomes are consistent with human capital theory, which posits that educational investment yields measurable returns in productivity and earnings (Becker, 1964). The reviewed evidence further underscores that inclusive entrepreneurship education directly contributes to the financial independence and labor market engagement of students with disabilities. Incorporating cost-effectiveness and return on investment assessments into future evaluations will enable policymakers to more accurately quantify these benefits and justify long-term investment in inclusive education. Although methodological heterogeneity and contextual variability limit

generalizability, the existing evidence consistently highlights the transformative potential of inclusive pedagogies in reducing economic inequalities and unlocking the entrepreneurial capacities of marginalized groups.

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