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SCHOOL-TO-WORK TRANSITION FOR STUDENTS WITH SPECIAL NEEDS: A SYSTEMATIC REVIEW

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Abstract:

The transition from school to employment remains a persistent challenge for students with special needs, with many experiencing fragmented supports, limited access to authentic work experiences, and uneven post-school outcomes despite policy attention and expanding transition initiatives. This systematic literature review (SLR) addresses the problem of scattered and rapidly growing evidence by synthesising recent empirical studies to clarify what is currently known and where critical gaps remain in supporting school-to-work transition for this population. Following the PRISMA protocol, an advanced search was conducted in two databases (Scopus and ERIC) using the keywords “transition to work”, “students” and “special needs”, with publication years limited to 2022–2025. After screening and eligibility assessment, 35 primary studies (n = 35) were included for analysis and thematic synthesis. Numerical results indicate that the reviewed evidence clustered into four dominant themes: (1) Pre-Employment Transition Services and Vocational Rehabilitation Systems (Pre-ETS/VR), (2) Work-Based Learning, Apprenticeship, and Community/Employer Pathways, (3) Psychosocial Readiness, Aspiration, Motivation, and Career Development, and (4) Contextual and Ecological Barriers, Inclusion, and Structural Transition Challenges. Across these themes, findings commonly emphasised the importance of coordinated interagency services, meaningful employer-linked learning, strengthened career self-determination, and mitigation of structural barriers that restrict participation and inclusion. Overall, the synthesis suggests that effective transition support is multi-component and context-sensitive, requiring integration of service systems, sustained

workplace-based opportunities, and family, school and community collaboration. This review concludes that future research and practice should prioritise scalable models with clear implementation guidance, strengthen equity-driven supports for diverse learners, and evaluate longer-term post-school outcomes to move beyond short-term indicators of readiness and participation.

DOI: 10.35631/IJEPC.1162040 **Keywords:**

Special Needs, Students, Transition to Work



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Introduction

The transition from school to work is a critical phase in the lives of all young adults, but it presents unique challenges for students with special needs. This period, often referred to as the school-to-work (STW) transition, involves navigating a complex array of social, economic, cultural, familial, and personal factors that influence the success of this transition (Marshall & Symonds, 2021). For students with special needs, these challenges are compounded by additional barriers related to their disabilities, which can affect their ability to adjust to new environments, communicate effectively, and understand work-related instructions (Alias, 2014). Despite these challenges, with appropriate support and interventions, students with special needs can successfully transition to the workforce and gain valuable work experience (Alias, 2014).

One of the primary challenges faced by students with special needs during the STW transition is the lack of preparedness for the work environment. Many students with disabilities are not adequately equipped with the necessary skills and knowledge to handle the demands of the workplace (McEachern & Kenny, 2007). This lack of preparedness can lead to difficulties in adjusting to new work settings, understanding job responsibilities, and interacting with colleagues and supervisors (Alias, 2014) (Alias, 2013). Additionally, the institutional label of having attended a special needs school can create long-term scarring effects, further hindering their chances of successful integration into training and employment (Menze et al., 2023). These challenges highlight the need for targeted interventions and support systems to help students with special needs navigate the transition from school to work.

Effective transition programs are essential in addressing the unique needs of students with disabilities. These programs often include training activities, internships, and other work-based learning opportunities that provide students with real-world experience and help them develop essential job skills (Alias, 2014), (Bonds, 2006). Special education teachers, school counselors,

and vocational rehabilitation counselors play a crucial role in these programs by providing guidance, support, and resources to help students overcome barriers to employment (McEachern & Kenny, 2007) (Riesen et al., 2014). Collaboration among key stakeholders, including families, schools, and employers, is also vital in creating a supportive environment that facilitates successful transitions (Riesen et al., 2014). Despite the challenges, dedicated efforts from educators and support staff can significantly improve the outcomes for students with special needs as they transition to the workforce (Alias, 2013).

Federal legislation, such as the Individuals with Disabilities Education Act (IDEA) and the school-to-Work Opportunities Act (STWOA), has also played a significant role in shaping the STW transition process for students with disabilities (Bonds, 2006). These laws mandate the development of individualized education programs (IEPs) that include transition plans for students aged 16 and older, ensuring that they receive the necessary support and services to prepare for both college and work (Bonds, 2006). The integration of academic and vocational curricula, along with partnerships between schools, families, businesses, and communities, further enhances the effectiveness of transition programs (Bonds, 2006). By leveraging these legislative frameworks and fostering collaborative efforts, it is possible to create a more inclusive and supportive transition process that empowers students with special needs to achieve their full potential in the workforce

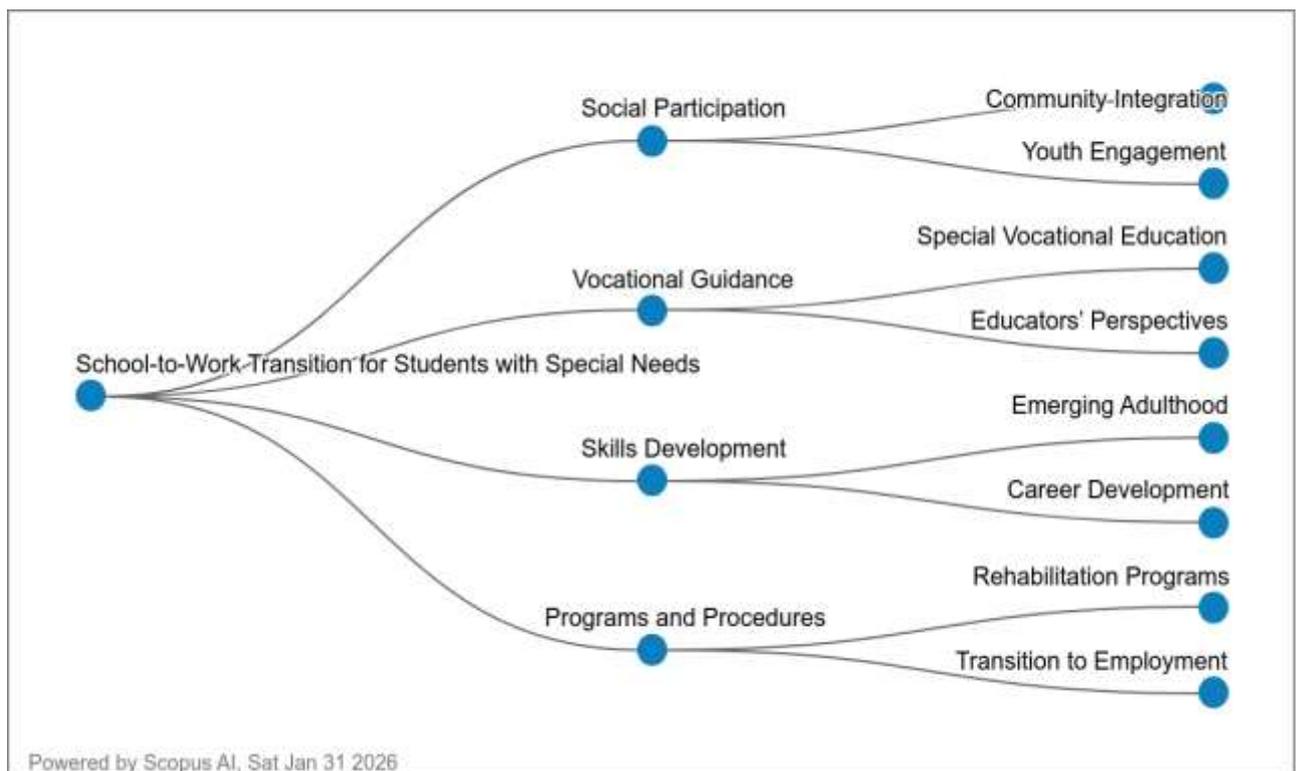


Figure 1: Conceptual Framework of School-to-Work Transition for Students with Special Needs

Figure 1 illustrates that the school-to-work transition for students with special needs is a multifaceted and interconnected process shaped by four core domains: social participation, vocational guidance, skills development, and programs and procedures. Social participation highlights the importance of community integration and youth engagement in fostering

inclusion and readiness for adult roles. Vocational guidance emphasizes structured support through special vocational education and educators' perspectives to align students' abilities with realistic career pathways. Skills development focuses on preparing students for emerging adulthood by strengthening career-related and functional competencies, while programs and procedures underscore the role of systematic rehabilitation programs and well-defined transition-to-employment processes. Collectively, the concept map demonstrates that effective school-to-work transition is not a single intervention but a coordinated ecosystem of social, educational, and programmatic supports that must work in synergy to enhance employability, independence, and successful adult outcomes for students with special needs.

Research Question

Research Questions (RQs) form the core of a Systematic Literature Review (SLR) since they set the intellectual compass for the entire review. Clear RQs define the scope and boundaries of the SLR, sharpen inclusion and exclusion decisions, and keep the review tightly aligned with the topic of interest. Well-specified questions also drive a rigorous search strategy by signalling which evidence must be captured. They support systematic coverage of relevant studies and reduce the likelihood of selective reporting or unintended bias. In addition, RQs provide an organising framework for extracting, categorising, and synthesising data across included studies, enabling coherent comparison of findings and the generation of defensible conclusions. By maintaining analytical focus, RQs prevent conceptual drift and ensure that the final synthesis yields actionable insights rather than diffuse summaries. Importantly, explicit RQs strengthen transparency and reproducibility, allowing other researchers to trace the review logic, replicate procedures, and extend the evidence base. In short, strong research questions ensure that an SLR remains methodologically sound, focused, and purpose-driven, whether the objective is to map knowledge gaps, assess intervention effectiveness, or identify emerging patterns within a field.

Defining the research questions (RQs) is the central task in the planning phase and the most decisive element of any SLR, as the entire review design flows from this step (Kitchenham, 2007). Given that the purpose of this SLR is to identify and critically analyse the state of the art in school-to-work transition for students with special needs, a structured approach to question formulation is required. The PICo framework a mnemonic commonly used to develop research questions, particularly for qualitative evidence (Lockwood et al., 2015) was therefore adopted. PICo represents Population, Interest, and Context, and it supports precise question construction by explicitly specifying who is being studied, what phenomenon is being examined, and under which setting or conditions. This structure strengthens conceptual clarity and improves retrieval accuracy during database searching, while also supporting consistent screening and data extraction. Guided by PICo, four research questions were formulated, as presented below.

RQ1: *How do Pre-Employment Transition Services (Pre-ETS) and vocational rehabilitation (VR) support influence school-to-work transition outcomes (e.g., employment entry, wages, work readiness) among transition-age students with special needs across school and VR service settings?*

RQ2: *What work-based learning, apprenticeship, and community/employer pathway features (e.g., placement choice, job coaching, workplace supports) are associated*

with successful school-to-work transition experiences and employment outcomes for students with special needs?

RQ3: *How do psychosocial factors (e.g., work aspiration, motivation, self-determination, career decision self-efficacy) shape career development and readiness for employment among students with special needs during the school-to-work transition period?*

RQ4: *What contextual and ecological barriers (e.g., family resources, school capacity, interagency coordination, employer attitudes, policy structures) hinder or enable inclusive school-to-work transitions for students with special needs, and how do these factors interact across systems?*

Material and Methods

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) is widely recognised as the benchmark for conducting SLR, strengthening transparency, completeness, and methodological consistency across every stage of the process (Page et al., 2021). By following PRISMA guidelines, researchers can enhance the precision and rigour of their review through a disciplined approach to identifying, screening, and selecting studies for inclusion. PRISMA also underscores the value of randomised studies, given their potential to reduce bias and generate more robust evidence for synthesis. In this review, two major databases, Scopus and ERIC, were selected for their extensive coverage and established reliability in indexing high-quality scholarly work.

The PRISMA workflow is structured around four core stages: identification, screening, eligibility, and data abstraction. Identification involves comprehensive database searching to capture all potentially relevant studies. Screening then filters the retrieved records using predefined criteria, removing irrelevant or low-quality sources. Eligibility requires a deeper appraisal of the remaining full texts to ensure alignment with the inclusion criteria. Finally, data abstraction entails systematically extracting and synthesising evidence from the included studies an essential step for producing coherent, defensible conclusions. Together, these stages provide a clear and auditable pathway for conducting systematic reviews with methodological integrity, generating findings that are credible, reproducible, and valuable for informing future research and practice.

Identification

Consistent with the PRISMA framework, the Identification stage functions as the evidentiary gateway of a systematic literature review, prioritising comprehensive retrieval before any evaluative filtering occurs. Guided by the review focus, “School-to-Work Transition for Students with Special Needs,” the search strategy was deliberately structured to maximise coverage and minimise omission. Relevant terms were systematically mapped and expanded, then translated into database-specific search strings to align with the indexing logic of Scopus and ERIC (Table 1). This disciplined approach yielded 1,062 records in total, comprising 213 records from Scopus and 849 records from ERIC. These counts indicate a substantial and diverse initial corpus, reflecting the breadth of transition-to-work scholarship and the multi-context nature of research involving students with special needs.

The uneven yield across databases provides a defensible methodological justification for dual-database searching. ERIC's markedly larger return is expected given its education-centred scope and detailed descriptors, which amplify capture of school-based transition programming, special education services, and practitioner-oriented empirical work. Scopus, while producing fewer records, strengthens disciplinary breadth by indexing transition research situated in adjacent fields such as vocational psychology, rehabilitation, labour studies, and disability policy. In combination, Scopus and ERIC mitigate database dependency and reduce the likelihood of systematic blind spots, particularly critical topics spanning educational practice and employment outcomes. Importantly, PRISMA anticipates that the Identification pool will contain duplicates and studies of varying relevance; the purpose at this stage is not appraisal but inclusive, ensuring that subsequent screening and eligibility decisions are made from a transparent, auditable, and methodologically defensible evidence base.

Table 1: The Search String

Scopus	TITLE-ABS-KEY (("transition to work" OR "employment transition" OR "work transition" OR "job readiness" OR "career transition") AND ("students" OR "pupils" OR "learners" OR "youth" OR "children") AND ("special needs" OR "disabilities" OR "learning difficulties" OR "developmental disabilities" OR "intellectual disabilities" OR "autism" OR "ADHD" OR "dyslexia")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (SRCTYPE , "j")) A2IND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2023) OR LIMIT-TO (PUBYEAR , 2024) OR LIMIT-TO (PUBYEAR , 2025))
Date of Access: Jan 2026	
ERIC	("transition to work" OR "employment transition" OR "work transition" OR "job readiness" OR "career transition") AND ("students" OR "pupils" OR "learners" OR "youth" OR "children") AND ("special needs" OR "disabilities" OR "learning difficulties" OR "developmental disabilities" OR "intellectual disabilities" OR "autism" OR "ADHD" OR "dyslexia")
Date of Access: Jan 2026	

Screening

Following PRISMA, the screening stage operationalised the review's scope through a structured, criterion-driven refinement of the initial record set. After applying the predefined screening rules to titles, abstracts, and bibliographic information, **151 records** were retained for further assessment **56 from Scopus** and **95 from ERIC**. This reduction reflects an intentional shift from broad capture to analytic relevance, ensuring that only studies aligned with the review focus and methodological requirements progressed to the next phase. The database pattern remained consistent with Identification: ERIC continued to contribute a larger share of education-facing work, while Scopus provided a smaller but substantively important

set spanning allied disciplines. Together, the screened subset represents a more targeted evidence base while preserving cross-database breadth.

In total, **911 records were excluded** based on explicit criteria. Table 2 shows the removal of **non-English** publications, records published **before 2021**, and non-eligible publication types (**conference papers, books, reviews**), as well as items marked **in press**. These decisions strengthen internal validity by prioritising peer-reviewed, fully published empirical evidence and ensuring interpretive consistency across studies. The temporal threshold (<2021) enhances contemporary relevance, capturing current policy, practice, and labour-market conditions affecting school-to-work transition. Additionally, restricting the context to studies **beyond Malaysia** (i.e., excluding non-Malaysian contexts) sharpens contextual coherence, supporting more defensible synthesis for national policy and practice implications. Finally, **10 duplicate records** were removed to prevent double-counting and distorted weight in synthesis, reinforcing the integrity and transparency of the screening pipeline.

Table 2: The Selection Criterion is Searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2022 – 2025	<2021
Literature type	Journal (Article)	Conference, Book, Review
Publication stage	Final	In Press
Subject	Social Sciences, Health Professions, Psychology	Besides Social Sciencesm Health Profesionas and Psychology

Eligibility

In the PRISMA eligibility phase, the review transitioned from preliminary relevance checks to full-text verification, where conceptual alignment and evidentiary suitability were assessed with greater precision. From the screened pool, 141 articles were successfully retrieved for eligibility assessment, enabling a thorough appraisal of study focus, population relevance, and the extent to which each paper could substantively contribute to the review objectives. This stage is methodologically pivotal because it tests whether studies that appear relevant at the abstract level genuinely address school-to-work transition for students with special needs when examined in full, and whether they provide sufficient methodological detail and findings to support synthesis.

Of the retrieved texts, 106 articles were excluded at full-text review for clearly documented reasons: the content fell outside the review’s field, the title signalled limited topical significance, the abstract did not align with the study objectives when mapped against full-text content, or the article lacked accessible full text. Importantly, these exclusions strengthen interpretive validity by preventing conceptual drift, where loosely related disability, schooling, or employment studies could dilute the analytic focus on transition processes and outcomes. Excluding inaccessible full texts is also defensible: without complete methodological and results sections, claims cannot be appraised or reliably extracted, increasing the risk of misclassification and selective interpretation. Ultimately, 35 studies met all eligibility requirements and were included in the qualitative synthesis, forming a curated evidence set that

balances relevance, transparency, and methodological defensibility. This smaller corpus is not a limitation; rather, it signals disciplined boundary-setting that elevates the credibility and coherence of the review's conclusions.

Data Abstraction and Analysis

In the PRISMA data abstraction and analysis stage, this review employed an integrative analysis approach to synthesise evidence across diverse qualitative research designs, enabling a coherent interpretation of findings that are often context-rich and methodologically varied. Data abstraction began with systematic extraction from the 35 eligible publications, focusing on assertions, concepts, and empirical details directly relevant to the review focus on School-to-Work Transition for Students with Special Needs (Figure 2). Rather than treating studies as isolated accounts, the analysis prioritised analytic convergence interrogating how each study framed transition pathways, articulated barriers and facilitators, and reported outcomes. Methodological features and key results were examined in parallel to ensure that emerging interpretations were grounded in the strength and intent of the original evidence, thereby reducing the risk of overgeneralisation or selective emphasis.

To enhance interpretive rigour, the theme development process was conducted collaboratively, with the primary author and co-authors iteratively refining topics and subtopics through comparison across studies. This team-based synthesis strengthens credibility by introducing structured challenge to individual interpretation and supporting more stable thematic boundaries. A reflexive analytic log was maintained throughout to document interpretive decisions, emergent insights, and analytic uncertainties, creating an auditable trail that increases transparency and supports reproducibility. Finally, the authors conducted cross-checks to identify inconsistencies in theme construction and reconciled conceptual disagreements through discussion, a critical step for minimising researcher bias and ensuring internal coherence of the final thematic map. Collectively, these procedures position the qualitative synthesis not merely as summarisation, but as a defensible knowledge-building process capable of generating actionable, evidence-based insights for research and practice.

Quality of Appraisal

In accordance with the guidelines outlined by Kitchenham and Charter (Kitchenham, 2007), the primary studies selected for this review were subjected to a formal quality appraisal to evaluate the robustness of the evidence and enable quantitative comparison across studies. To operationalise this step, the review adopted the six-criterion quality assessment framework proposed by (Abouzahra et al., 2020) ensuring a consistent and transparent evaluation of methodological strength within the SLR. Each criterion was rated using a three-tier scoring scheme: "Yes" (Y) = 1 when fully satisfied, "Partly" (P) = 0.5 when partially satisfied with identifiable limitations, and "No" (N) = 0 when not addressed.

- QA1. Is the purpose of the study clearly stated?
- QA2. Is the interest and the usefulness of the work clearly presented?
- QA3. Is the study methodology clearly established?
- QA4. Are the concepts of the approach clearly defined?
- QA5. Is the work compared and measured with other similar work?
- QA6. Are the limitations of the work clearly mentioned?

Each expert independently evaluated the study against the specified criteria, after which scores were aggregated to generate an overall quality rating. To advance to the subsequent stage, a study was required to achieve a combined score above 3.0, calculated by summing the ratings from all three experts. This cut-off serves as a quality gate, ensuring that only studies demonstrating an acceptable level of methodological adequacy and reporting clarity were retained for further analysis.

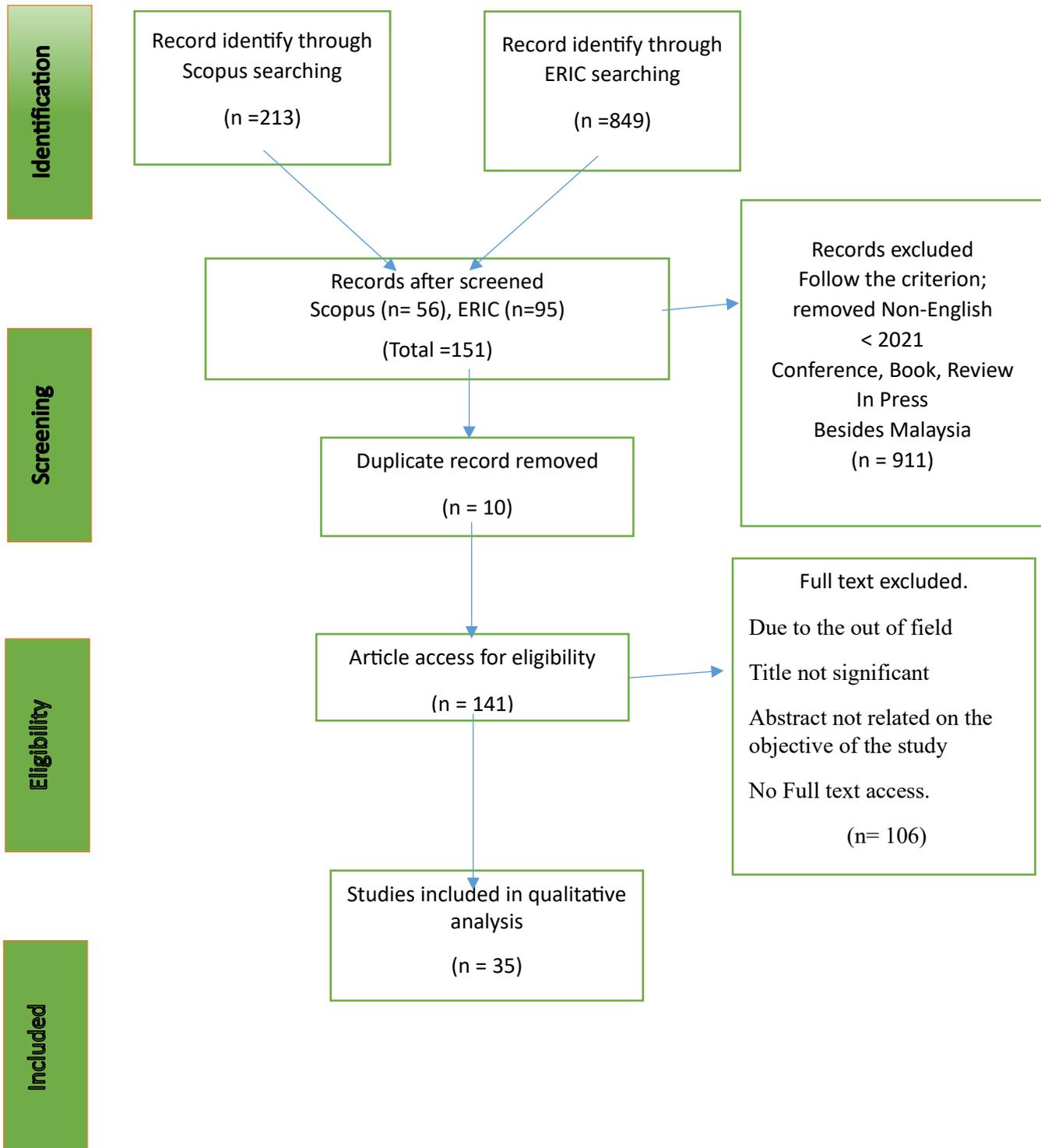


Figure 2: Flow Diagram Of The Proposed Searching Study (Moher D, Liberati A, Tetzlaff J, 2009)

Result and Finding

Table 3 presents the quality assessment results for the 35 primary studies (PS1–PS35) indicate that the overall body of evidence included in this review meets an acceptable methodological standard. Based on the predefined quality threshold, studies scoring below 50% were excluded from further consideration to ensure analytical rigor and credibility. The assessment shows that all retained studies achieved scores well above the rejection threshold, with percentages generally ranging from 75% to over 90%, reflecting clear research purposes, well-defined methodologies, and strong relevance to the review objectives. Most studies performed particularly well on criteria related to clarity of aims, methodological description, and conceptual definition, while slightly lower scores were observed for criteria concerning explicit comparison with related work and the reporting of study limitations elements that are often underreported at the abstract level. Importantly, no study fell below the minimum quality requirement, indicating that the screening and eligibility processes effectively filtered out low-quality or insufficiently reported research. Overall, the quality assessment confirms that the final set of studies provides a robust and reliable evidence base for qualitative synthesis in this systematic literature review.

Table 3: Performance of Quality Assessment

PS	QA1	QA2	QA3	QA4	QA5	QA6	Total	%
PS1(Howorth et al., 2025)	Y	Y	Y	Y	P	P	5.0	83.3
PS2(Hartman et al., 2025)	Y	Y	Y	Y	Y	P	5.5	91.7
PS3 (Taylor et al., 2025)	Y	Y	Y	Y	P	P	5.0	83.3
PS4 (Brenner & Dymond, 2025)	Y	Y	Y	Y	N	P	4.5	75.0
PS5 (Mo et al., 2025)	Y	Y	Y	Y	P	P	5.0	83.3
PS6 (Anal et al., 2025)	Y	Y	Y	Y	P	P	5.0	83.3
PS7 (Zainal, 2025)	Y	Y	Y	Y	P	P	5.0	83.3
PS8 (Ching et al., 2025)	Y	Y	Y	Y	P	P	5.0	83.3
PS9 (Tvedalen & Braathen, 2025)	Y	Y	Y	Y	N	P	4.5	75.0
PS10 (Khasawneh, 2024)	Y	Y	Y	Y	Y	P	5.5	91.7
PS11(Almalky & Alwadei, 2024)	Y	Y	Y	Y	P	P	5.0	83.3
PS12 (Lau et al., 2024)	Y	Y	Y	Y	P	P	5.0	83.3
PS13 (Fleming et al., 2024)	Y	Y	Y	Y	Y	P	5.5	91.7
PS14 (Poppen et al., 2024)	Y	Y	Y	Y	P	P	5.0	83.3
PS15 (Castruita-Rios & Estala-Gutiérrez, 2024)	Y	Y	Y	Y	P	P	5.0	83.3
PS16 (Whittenburg et al., 2024)	Y	Y	Y	Y	P	P	5.0	83.3

PS17 (Danielson et al., 2024)	Y	Y	Y	Y	N	P	4.5	75.0
PS18 (Carlson, 2022)	Y	Y	Y	Y	P	P	5.0	83.3
PS19 (Pang et al., 2024)	Y	Y	Y	Y	P	P	5.0	83.3
PS20 (Ip & Hui, 2023)	Y	Y	Y	Y	Y	P	5.5	91.7
PS21(Sung et al., 2023)	Y	Y	Y	Y	P	P	5.0	83.3
PS22 (Jackson & Dean, 2023)	Y	Y	Y	Y	Y	P	5.5	91.7
PS23 (Menze et al., 2023)	Y	Y	Y	Y	Y	P	5.5	91.7
PS24 (Mahiko, 2023)	Y	Y	Y	Y	N	P	4.5	75.0
PS25 (Eseadi & Diale, 2023)	Y	Y	P	Y	N	P	4.5	75.0
PS26 (Lambert et al., 2023)	Y	Y	Y	Y	P	P	5.0	83.3
PS27 (Sigstad & Garrels, 2023)	Y	Y	Y	Y	N	P	4.5	75.0
PS28 (Engelbrecht et al., 2023)	Y	Y	Y	Y	P	P	5.0	83.3
PS29 (Dubois et al., 2023)	Y	Y	Y	Y	Y	P	5.5	91.7
PS30 (Sefora & Ngubane, 2023)	Y	Y	Y	Y	N	P	4.5	75.0
PS31(Schutz et al., 2022)	Y	Y	Y	Y	P	P	5.0	83.3
PS32 (Carlson, 2022)	Y	Y	P	Y	N	P	4.5	75.0
PS33 (Taylor et al., 2022)	Y	Y	Y	Y	Y	P	5.5	91.7
PS34 (Fasching & Felbermayr, 2022)	Y	Y	Y	Y	P	P	5.0	83.3
PS35 (Pickens & Dymond, 2022)	Y	Y	Y	Y	P	P	5.0	83.3

Pre-Employment Transition Services and Vocational Rehabilitation Systems (Pre-ETS/VR)

Pre-employment transition services (pre-ETS) and vocational rehabilitation (VR) services are described across the abstracts as a set of early, structured supports that can shift measurable transition outcomes when delivery is targeted and connected to real work preparation. Outcome-focused studies show improvements at both skill and earnings levels. In a telehealth pilot, (Howorth et al., 2025) reported reduced severity indicators linked to social communication and increased conversational skills connected with vocational independence, alongside more peer social hosting as a proxy for future collegial interactions. In large administrative analyses, (Hartman et al., 2025) found that pre-ETS participation, credential attainment, and co-enrollment with partner employment programs were associated with higher wages, with wage patterns also varying by demographic and contextual factors. Using RSA-911 data for youth receiving both pre-ETS and individualized VR services, (Taylor et al., 2025) identified predictors of successful employment and highlighted a mismatch between services

that show stronger links with employment success versus services that are most commonly delivered in practice. Implementation of technology-enabled training is presented as a feasible pathway but cost and readiness constraints appear salient; (Danielson et al., 2024) estimated per-school preparation labor and per-student non-labor costs for virtual interview training models, with spending concentrated in delivery planning and teacher training, indicating that adoption decisions may depend on capacity for training and preparation. In a state demonstration emphasizing work-based learning, (Honeycutt et al., 2024) observed increased use of VR services alongside Pre-ETS and reduced subgroup differences in utilization patterns, even though earnings differences were not consistently interpretable, suggesting that engagement and access may improve earlier than stable wage gains.

Across the abstracts, the strongest constraints appear less about the idea of Pre-ETS and more about uneven implementation, coordination, and monitoring, with repeated signals that service systems need shared routines and data infrastructure. (Lau et al., 2024) reported modest gains in student knowledge for job exploration and workplace readiness after lessons, while qualitative findings pointed to structural and instructional barriers such as interagency silos, technology use that does not translate to meaningful learning, career alienation, absenteeism, and variation in instructional autonomy; family engagement, interagency collaboration, and technology were framed as potential barriers, while instructor autonomy functioned as a facilitator. State-level variation is also prominent: (Whittenburg et al., 2024) documented substantial differences among states in types and quantities of Pre-ETS delivered, disability profiles of recipients, and reliance on VR staff versus vendors, implying that “one-size” guidance may not fit and that technical assistance may need to be differentiated. Planning and governance texts show similar patterns; (Taylor et al., 2025) found that state plans emphasize instructional priorities, contexts, and networks of stakeholders, reinforcing that implementation is shaped by local partnerships and settings rather than policy alone. Measurement and accountability tools are presented as responses to this gap: (Fleming et al., 2024) described early use of the Transition Readiness Toolkit to support data-driven decision-making and accountability for Pre-ETS providers and agencies, while (Poppen et al., 2024) field-tested a statewide web-based Transition Self-Assessment Tool showing that many high schools offer career-related services but that access is not universal for potentially eligible students and services often occur with limited VR coordination; stronger availability and coordination were noted in schools within a statewide transition program, implying that structured programs can scaffold cross-system alignment.

Equity, engagement, and stakeholder capacity emerge as a third cluster that shapes whether Pre-ETS/VR functions as a gateway or a filter for students with disabilities, particularly for families, culturally and linguistically diverse groups, and students with more significant support needs. (Castruita-Rios & Estala-Gutiérrez, 2024) identified predictors of VR engagement among transition-age Hispanic youth receiving pre-ETS, with influential factors spanning education level, living situation, social support, perceived stigma, counselor language match (Spanish), counselor competence, vocational outcome expectancy, and number of Pre-ETS received, indicating that engagement is partly relational and culturally mediated rather than purely service availability. Family knowledge and navigation are also limited in some contexts; (Schutz et al., 2022) found that parents endorsed a need for diverse employment-focused practices but reported mixed views on current preparation and barriers, and many parents were unfamiliar with community transition resources, with differences by community type and disability category, implying that information access may be a practical intervention target. Professional readiness inside schools is positioned as essential for connecting students

to services; (Carlson, 2022) emphasized that secondary special education teachers need working knowledge of Pre-ETS to inform students and families and to help secure services, aligning with the broader theme that coordination begins with informed school personnel. Service gatekeeping concerns appear sharper for students with severe intellectual disability: (Pickens & Dymond, 2022) reported that providers' judgments were influenced by perceptions of work understanding, work-related skills, and work behaviors, with prior work experience viewed as critical for accessing employment services, suggesting a potential cycle where limited access to experiences reduces later eligibility perceptions. Evidence from outside the United States also supports attention to implementation conditions; (Almalky & Alwadei, 2024) reported that teachers in Al-Kharj viewed VR programs as preparing individuals with intellectual disability for work, while differences by teacher experience and institution type suggested uneven practice conditions. Overall, the abstracts converge on a practical conclusion: stronger outcomes are more likely when Pre-ETS is intensive enough to build functional skills, connected to individualized VR and work-based learning, monitored with usable data tools, and delivered in ways that reduce access barriers for families and diverse youth.

Work-Based Learning, Apprenticeship, and Community/Employer Pathways

Work-based learning, apprenticeship, and community/employer pathways are presented in the abstracts as practical bridges from school routines to real work roles, but outcomes depend on fit, structure, and continuity of support. Evidence from a structured pathway model shows generally strong employment entry with continued needs after placement. (Sung et al., 2023) reported that many Michigan Project SEARCH graduates with intellectual and developmental disabilities moved into competitive employment, with parent reports indicating high post-program employment and satisfaction yet also describing ongoing difficulties and the need for further preparation and support after exit. Apprenticeship experiences in an adapted vocational upper secondary context highlight a developmental process at the workplace, with mastery and belonging emerging over time rather than appearing immediately. (Tvedalen & Braathen, 2025) described early uncertainty that gradually shifted toward task mastery and a sense of belonging, and this shift was linked with self-efficacy during transition; teamwork was described as a factor supporting both competence and belonging. Community-provider perspectives in rural settings further suggest that sustained pathways require deliberate partnership maintenance. (Mahiko, 2023) identified effective communication and competent personnel as key conditions for sustaining school–community work experiences, while also noting missed learning opportunities when schools did not clearly communicate student needs and goals to community partners. Across these abstracts, work-based learning functions less as a single activity and more as a sequence of supported exposures that can strengthen readiness, confidence, and employment entry when pathway design is transparent and coordinated ((Sung et al., 2023); (Tvedalen & Braathen, 2025); (Mahiko, 2023)).

Implementation accounts emphasize that work-based learning often sits inside constraints that require active problem-solving from educators and partners, especially for students with extensive support needs. (Brenner & Dymond, 2025) described special educators responding to barriers by creating authentic school-based work experiences when community placements were difficult, and by offering direct supports to students and families alongside networking to build new connections. Advocacy across school and community settings was also reported as a strategy for expanding access and improving placement quality for students needing substantial assistance. Rural partnership evidence aligns with this emphasis on proactive coordination. (Mahiko, 2023) found that community members viewed communication and

personnel competence as central for sustaining work experiences, and additional disability training and support at worksites was perceived as helpful for improving effectiveness of placements. Program-based pathways add another layer: even when entry to employment is positive, continuation supports may remain necessary, implying that pathway maintenance should extend beyond placement to early employment stability. (Sung et al., 2023) reported post-program support needs and difficulties after Project SEARCH, despite positive employment outcomes, indicating a gap between program completion and long-term job maintenance. Apprenticeship narratives provide a complementary view by framing workplace learning as a gradual confidence-building process, which may require time and stable support structures to reach belonging and task mastery (Tvedalen & Braathen, 2025)). Taken together, the abstracts suggest that educator action, partner readiness, and post-placement scaffolds operate as key levers for sustaining meaningful work-based learning and employer pathways ((Brenner & Dymond, 2025); (Mahiko, 2023) 2023; (Sung et al., 2023)).

A cross-study synthesis points to three pathway quality markers: meaningful choice and access to varied placements, workplace belonging supported by social participation, and continuous preparation that follows students into early employment. Limited placement choice can narrow learning opportunities and reduce perceived agency. (Tvedalen & Braathen, 2025) reported restricted options in apprenticeship selection, while also describing how teamwork promoted belonging and mastery, suggesting that social integration at the workplace is not an extra feature but part of skill development. Educator strategies described by (Brenner & Dymond, 2025) indicate that advocacy and relationship building can widen opportunities and reduce access barriers, including through school-based authentic work when employer sites are not available. Community voices highlight that pathway success depends on shared clarity: (Mahiko, 2023) reported missed opportunities when schools did not fully disclose work needs and student goals, implying that employer partners can support more effectively when expectations are explicit and disability supports are available. Program evidence reinforces the importance of continuity after hiring; (Sung et al., 2023) reported satisfaction with employment alongside difficulties and a need for additional support after Project SEARCH, indicating that transition services may require an “aftercare” phase tied to early job retention. Overall, the abstracts present work-based learning pathways as effective when partnerships are transparent, placements are socially inclusive and supports continue long enough to convert initial entry into stable participation ((Tvedalen & Braathen, 2025); (Brenner & Dymond, 2025); (Mahiko, 2023); (Sung et al., 2023)).

Psychosocial Readiness, Aspiration, Motivation, and Career Development

Psychosocial readiness and career aspiration are repeatedly identified in the abstracts as foundational conditions shaping the school-to-work transition of students with special needs. Several studies emphasise that limited exposure to work knowledge and weak self-belief restrict students’ ability to envision realistic employment futures. (Ching et al., 2025) demonstrated that structured and intentional conversations about work, delivered through a series of workshops, strengthened work aspiration, self-determination, and mental readiness among students with learning disabilities in Malaysia. Increased awareness of job characteristics, workplace expectations, and personal strengths supported clearer career thinking. Similar concerns are reflected in the conceptual synthesis by (Eseadi & Diale, 2023), which highlighted that students with specific learning disabilities often experience low self-esteem, stigma, and restricted social networks, all of which undermine career transitioning. Career aspiration in this context is not limited to interest formation but is closely linked to

confidence, identity development, and perceived future possibilities. Narrative evidence from open distance learning settings further reinforces this view. (Sefora & Ngubane, 2023)) reported that students with disabilities articulated strong aspirations but faced difficulties aligning these aspirations with labour market realities due to inadequate guidance and persistent negative attitudes. Across these studies, psychosocial readiness emerges as a developmental process influenced by early exposure, supportive dialogue, and opportunities to reflect on personal goals, rather than a fixed personal trait ((Ching et al., 2025); (Eseadi & Diale, 2023)& (Sefora & Ngubane, 2023)).

Motivation and autonomy support are also presented as decisive psychosocial mechanisms linking preparation activities to successful transition outcomes. Drawing on self-determination theory, (Dubois et al., 2023) provided longitudinal evidence that autonomous motivation predicted both positive transition status and well-being among youth with learning difficulties, while controlled motivation showed negative associations. Autonomy support from significant others, particularly fathers and peers, was associated with stronger internalised motivation, suggesting that social environments play a critical role in sustaining effort and persistence during transition. Quantitative programme evaluations offer converging evidence. (Ip & Hui, 2023) found that a targeted career intervention for higher education students with disabilities significantly improved career decision self-efficacy and focused job search strategies, although increased work cynicism was also observed, indicating heightened realism about labour market barriers. In a related policy context, (Khasawneh, 2024) reported that engagement intensity in career preparedness programmes for Saudi students with disabilities was a strong predictor of employment outcomes, outweighing cultural factors, while still acknowledging their contribution. Together, these findings suggest that motivation is shaped by both internal psychological resources and the quality of programme engagement. Career development initiatives that support autonomy, skill mastery, and realistic appraisal appear more likely to enhance psychosocial readiness and sustained participation in employment pathways ((Dubois et al., 2023); (Ip & Hui, 2023); (Khasawneh, 2024)).

Beyond formal programmes, participation in employability-related activities and broader developmental experiences further influences motivation, aspiration, and perceived readiness for work. (Jackson & Dean, 2023) demonstrated that extra- and co-curricular activities outside the curriculum contributed to stronger perceived work preparedness and labour market outcomes, with particularly strong benefits for graduates with disabilities and those from disadvantaged backgrounds. Activities involving leadership, mentoring, and social participation were associated with more favourable outcomes than volunteering or short micro-credentials, highlighting the psychosocial value of roles that foster agency and recognition. These findings align with earlier qualitative and conceptual insights that emphasise the role of social support and identity formation in career development. (Eseadi & Diale, 2023) argued that strengthened social networks and positive self-concept reduce stigma and enhance long-term independence for students with learning disabilities. Similarly, (Sefora & Ngubane, 2023) showed that determination, identity clarity, and supportive networks enabled students with disabilities to negotiate career barriers more effectively, even within constrained institutional contexts. When considered collectively, the abstracts suggest that psychosocial readiness is reinforced through a combination of aspiration building, autonomy-supportive relationships, meaningful participation, and continuous guidance across educational stages. Career development for students with special needs therefore requires coordinated attention to motivation, self-belief, and contextual supports to enable informed, realistic, and sustained

transition into employment ((Jackson & Dean, 2023); (Eseadi & Diale, 2023); (Sefora & Ngubane, 2023)).

Contextual and Ecological Barriers, Inclusion, and Structural Transition Challenges

Contextual and ecological barriers are described across the abstracts as multi-layered constraints that shape school-to-work transition beyond individual ability. An explicit ecological analysis in Hong Kong illustrates how challenges emerge differently across systems and become more complex through interaction between personal and environmental factors. (Mo et al., 2025) reported that youths with intellectual disabilities, family carers, and professionals described barriers situated at multiple ecological levels, with the interplay between systems influencing self-determination, views of work, and personal aspiration in a Chinese context. A similar ecological pattern is visible in Malaysian school settings where implementation of a transition-to-career programme depended on readiness and resources across stakeholders rather than on teachers alone. (Anal et al., 2025) identified challenges related to teacher knowledge and skills, attitudes and motivation, infrastructure and learning environment, and support from schools, parents, and community, indicating that programme success is shaped by conditions around the student. Structural barriers are also documented in post-school pathways tied to vocational certification. (Zainal, 2025) found that students with disabilities completing the Malaysia Skills Certificate programme still faced workplace challenges and support needs, including communication difficulties, inadequate support, and workplace exploitation, with successful transition linked to emotional resilience, family backing, and sustained post-school support. These studies converge on the view that transition difficulty is produced through contextual limitations in supports, workplace conditions, and system coordination, rather than being explained by disability label alone ((Mo et al., 2025), 2025; (Anal et al., 2025); (Zainal, 2025)).

Several abstracts highlight that inclusion failures often appear as gaps in planning, coordination, and access, especially during early transition stages and in delivery models that rely on multiple agencies. Early career planning through Pre-ETS is presented as beneficial, yet implementation barriers persist across local contexts. (Lambert et al., 2023) reported that starting Pre-ETS with younger students (ages 14–16) was viewed positively, but educators and vocational rehabilitation counselors expressed a need for more resources and ongoing training, and families requested more meaningful job exploration and workplace readiness activities. Similar coordination challenges are implied in online transition-program delivery during disruptive periods such as the Coronavirus (COVID-19) pandemic. (Pang et al., 2024) found that effective e-learning instructional management for students with intellectual disabilities required collaborative support with clear roles and careful planning across stakeholders, while also reporting challenges faced by teachers and students within this shift to individualized online learning. Participative cooperation research in Austria adds another inclusion lens by emphasizing decision-making involvement. (Fasching & Felbermayr, 2022) described experiences showing that active involvement of youth with disabilities and parents in planning is a key aspect of successful transition, with longitudinal qualitative accounts used to illustrate cooperation experiences with professionals and to suggest improvements for inclusive planning. Across these abstracts, structural transition challenges are repeated as problems of capacity, role clarity, and participatory planning, where inclusion is strengthened when youth and families are treated as active partners and when systems reduce fragmentation ((Lambert et al., 2023); (Pang et al., 2024); (Fasching & Felbermayr, 2022)).

International evidence further shows that institutional arrangements, school practices, and policy environments can produce long-term disadvantage, while targeted supported employment and stronger school preparation can mitigate exclusion. A strong structural finding from Germany suggests that institutional labeling can create lasting labour market penalties beyond academic attainment. (Menze et al., 2023) found that attending a special needs school generated “scarring” effects increasing NEET refer to not being integrated into education, employment, or training risk for students categorized with learning disability, even when compared with similarly low-attaining peers from general schools, indicating a systemic barrier embedded in institutional pathways. In Norway, school preparation for working life among students with mild intellectual disability was described as highly variable, with room for improvement, implying that inconsistent school-level goals and planning contribute to uneven transition readiness. (Sigstad & Garrels, 2023) reported variation in work-related goals in individualized education plans and in teacher efforts to prepare students to become valued employees. In South Africa, a supported employment approach is described as addressing contextual barriers through individualized supports and a human rights foundation. (Engelbrecht et al., 2023) reported that individualized support within a work transition program promoted uptake of occupational opportunities and sustained participation, while also pointing to policy shortfalls that restrict employment participation and perpetuate occupational injustices. When linked back to post-school experiences in Malaysia, ongoing vulnerabilities such as inadequate support and workplace exploitation further reinforce the need for inclusive, adaptive policies and inter-sector collaboration that extends beyond school exit ((Zainal, 2025) (Menze et al., 2023); (Engelbrecht et al., 2023)).

Conclusion

This systematic literature review was conducted to consolidate recent evidence on school-to-work transition for students with special needs, with attention to what supports work, what remains inconsistent, and what barriers continue to limit inclusive employment participation. Using the PRISMA protocol, an advanced search was applied in two databases (Scopus and ERIC) with the keywords “transition to work”, “students” and “special needs”, limiting publications to 2022–2025 and retaining 35 primary studies (n = 35) that met the inclusion criteria and quality requirements. The review was designed to answer research questions aligned to four areas: (1) the role and influence of Pre-ETS and VR systems, (2) the contribution of work-based learning and apprenticeship routes with community or employer partnerships, (3) the importance of psychosocial readiness and career development factors, and (4) contextual and ecological barriers that shape inclusion and structural transition outcomes. Overall, the purpose was to reduce fragmentation in current knowledge and to provide a clearer evidence map that supports decisions in policy, school programming, and interagency practice.

Across the included studies, findings clustered into four themes with several repeated patterns. First, service-system studies commonly indicated that early transition services can be linked with improved readiness and better labour outcomes, but effectiveness depends on coordination, dosage, provider capacity, and monitoring mechanisms rather than on policy statements alone. Second, work-based learning and apprenticeship pathways were consistently described as useful bridges into employment, yet outcomes were sensitive to placement quality, workplace fit, continuity of support, and the degree of collaboration between schools and employers; short-term success in placement did not always translate into stable long-term participation without follow-up supports. Third, psychosocial readiness emerged as a key driver of transition engagement, where aspiration, self-determination, motivation, and career

decision confidence supported clearer planning and stronger persistence, while stigma, weak guidance, and limited opportunity exposure reduced realistic career development. Fourth, ecological and structural challenges were repeatedly reported across family, school, labour market, and policy contexts, including limited resources, variable teacher preparedness, inconsistent transition planning, weak interagency collaboration, and risk of exclusion through institutional practices. Methodologically, the evidence base included qualitative, quantitative, and mixed-method designs, indicating increasing interest in both measurable outcomes and lived experiences, yet also showing uneven reporting on implementation details and longer-term post-school tracking. A notable contribution of this review is the integrated thematic structure that connects “services and systems” with “pathways and experiences” while placing psychosocial factors and ecological conditions as cross-cutting influences; this perspective supports a more complete understanding of transition as a multi-component process rather than a single intervention.

The synthesis offers practical implications for education and employment systems. Transition supports appear most defensible when service delivery is integrated across school, family, community, and vocational partners, with clear role allocation, structured planning routines, and mechanisms for monitoring access and outcomes. For practice, emphasis is needed on expanding authentic work exposure, strengthening employer-linked learning opportunities, and ensuring supports continue into early employment rather than ending at school exit. Program design can benefit from combining skill development with psychosocial preparation, including structured career conversations, goal setting, and self-determination training, while also addressing barriers such as limited information access for families and uneven readiness among service providers. Several constraints should be acknowledged: reliance on two databases may omit relevant work indexed elsewhere; the restricted timeframe (2022–2025) may under-represent earlier foundational evidence; language and publication-type limits can narrow diversity of perspectives; and variations in study designs and outcome reporting reduce direct comparability. Future research should expand database coverage, include longer follow-up windows for employment stability, test scalable implementation models in diverse settings, and examine equity effects for different disability profiles and socio-contextual groups. In conclusion, systematic reviews in this field remain important because evidence-based synthesis helps convert scattered findings into usable knowledge, supports transparent decision-making, and guides future empirical work toward stronger design, better reporting, and more inclusive transition outcome.

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