Best Practices in Supporting Career Transition for Students with Special Needs in the 21st Century: A Systematic Review

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Abstract
Transitioning from school to employment or higher education is critical for students with special needs, requiring tailored support and innovative approaches aligned with 21st-century teaching and learning principles. This systematic review aims to identify and synthesize best practices in supporting career transition for these students, focusing on family involvement, individualized career planning, and technology integration. This study used the PRISMA approach. A comprehensive search of peer-reviewed articles published between 2022 and 2024 was conducted across multiple databases, including Scopus and Web Of Science database fields an extensive selection of studies, reviews, and articles related to transition programs for special education students. After applying advanced searching, the final data set consisted of (n=15). The findings highlight three key themes emerged Inclusive Career Transition Programs, Barriers and Facilitators in Career Transition, and Innovative Practices and Pedagogies. This review provides valuable insights for educators, policymakers, and families, emphasizing the need for a holistic approach that leverages 21st-century skills and technologies. By adopting these best practices, stakeholders can enhance the career readiness and long-term success of students with special needs, ensuring a smoother transition to adulthood and greater opportunities for meaningful employment and community participation. Further research is recommended to explore these practices' long-term outcomes and address the identified challenges.
Keywords: Best Practices, Career Transition, Work Readiness, Special Needs, Family Engagement.

Introduction
The transition from school to employment or further education represents a critical juncture for students with special needs, often requiring tailored support and innovative approaches to ensure successful outcomes. In the 21st century, the landscape of education

and career preparation has evolved, emphasizing skills such as critical thinking, digital literacy, and collaborative problem-solving (Partnership for 21st Century Learning, 2019). For students with special needs, navigating this transition can be particularly challenging due to barriers such as limited access to resources, inadequate support systems, and varying levels of family involvement (Test et al., 2009) .

Recent research underscores the importance of comprehensive, individualized transition planning that integrates family participation and leverages modern technology to enhance learning and career readiness (Morningstar et al., 2016). Effective career transition programs address academic and vocational skills and focus on developing social and emotional competencies necessary for the workplace (Carter et al., 2011). The implementation of these practices within an inclusive, supportive educational environment can significantly improve the prospects of students with special needs as they move into adulthood.

This systematic review aims to identify and synthesize the best practices in supporting career transitions for special needs students within the context of 21st-century education. By examining a broad range of studies and highlighting successful strategies, this review seeks to provide educators, policymakers, and families with actionable insights to enhance career readiness and long-term success for this vulnerable population. The findings are intended to inform the development of more effective transition programs that address the unique needs of special education students and the demands of the modern workforce.

Literature Review
This literature review discusses the importance of comprehensive support systems for students with special needs during career transitions, focusing on challenges, strategies, and opportunities in the 21st century. Research consistently highlights the significant barriers that students with special needs face during their career transitions. In rural districts, for example, the extent of participation in career development opportunities varies based on disability type, staff allocation, and the effectiveness of partnerships. These factors often limit the inclusivity and accessibility of career development programs, underscoring the need for tailored approaches that address staff needs and leverage community resources (Schutz & Travers, 2023).

In Japan, students with social, emotional, and behavioral difficulties face additional stigmas that negatively impact their career path choices. These stigmas, compounded by the lack of comprehensive support systems, highlight the need for further research and targeted interventions to assist in career-related decision-making among students, teachers, and parents (Fujino & Sato, 2022). Similarly, in Ireland, students with special educational needs (SEN) are more likely to experience negative transitions to secondary school, particularly those with general learning and intellectual disabilities. These challenges are exacerbated by gender and socio-economic factors, emphasizing the need for targeted supports during the pre-transition period (Fasching, 2014).

The School-to-Work framework, incorporating apprenticeships, mentoring, internships, and job shadowing, is crucial for effective career transitions. Legal frameworks like IDEA and STWOA mandate individualized education programs, ensuring students with

disabilities are well-prepared for the workforce (Bonds, 2006). Hong Kong's 12-year free education system supports SEN students' transition to adulthood, but they face challenges. Teachers prepare them for lifelong learning and career planning, enhancing motivation and quality of life. Support, strategies, and pathways are crucial (Fung & Lan, 2018).

Improving vocational assessment skills among teachers is another key factor in supporting career transitions. Imai et al. (2023) found that targeted training programs for teachers significantly enhance their ability to support career decisions for students with intellectual disabilities. The effectiveness of these programs is influenced by the teachers' experience, particularly in upper secondary schools, and is more impactful for professionals with foundational knowledge in vocational rehabilitation.

For Autistic students transitioning to postsecondary education or employment, a comprehensive approach is essential. Barnhill (2022), highlights the importance of developing academic, social, self-regulation, and self-sufficiency skills. School psychologists and other professionals play a critical role in providing tailored support, including cognitive assessments, strengthening academic and behavioral skills, and assisting families in accessing necessary services. These strategies are crucial for improving employment outcomes and overall life quality for Autistic students as they transition into adulthood.

Teaching self-determination skills within the general curriculum is another best practice that supports career transitions for students with special needs. Rowe et al. (2015), provide evidence-based strategies that enhance students' autonomy and decision-making abilities. These strategies, implemented within a Multi-Tiered System of Supports (MTSS), contribute to students' overall success by fostering independence and self-advocacy skills that are critical for navigating career transitions.

Material and Methods
Identification
The process of conducting a systematic review to select pertinent papers for this report includes three main stages. Firstly, it encompasses the identification of keywords and associated terms by utilizing resources such as thesauri, dictionaries, encyclopedias, and prior research. After determining the relevant keywords, search strings were formulated for the Scopus and Web of Science (WoS) databases (see Table 1). In the initial phase of the systematic review, a combined total of 3107 papers was successfully retrieved from both databases, showcasing the depth of Best Practices in Supporting Career Transition for Students with Special Needs in the 21st Century

Table 1
The Search Strings

Scopus	WOS
TITLE-ABS-KEY (transition AND to AND work AND special AND	transition AND to AND work AND special AND needs -
TITLE-ABS-KEY (transition AND to AND work AND special AND needs) AND PUBYEAR > 2021 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (OA , "all"))	Refine results for transition AND to AND work AND special AND needs (Topic) and Preprint Citation Index (Exclude – Database) and 2024 or 2023 or 2022 (Publication Years) and Article (Document Types) and Web of Science Core Collection (Database) and Education Educational Research or Psychology (Research Areas) and English (Languages) and All Open Access (Open Access)

Screening
The initial screening process should exclude duplicate papers. 3036 papers were excluded in the first phase, and seventy-one publications were examined in the second phase using a variety of inclusion and exclusion criteria formed by the researchers. The first criterion was literature, or research publications, as they are the main source of useful knowledge. It also involves the omission of articles, reviews, meta-analyses, syntheses, and systematic reviews from the current study. Moreover, the review focused solely on English-language papers. It is imperative to highlight that the schedule was selected with a five-year timeframe in mind (2022–2024).

Eligibility
Seventy-one articles have been prepared for the eligibility step, which is the third stage. Currently, every article's title and significant content underwent meticulous scrutiny to confirm that they adhered to the inclusion criteria and aligned with the objectives of the present Best Practices in Supporting Career Transition for Students with Special Needs in the 21st Century. Forty-nine reports were excluded since empirical data did not support them. Lastly, Table 2 indicates that fifteen articles are accessible for examination.

Table 2
The Selection Criterion is Searching

CRITERION	INCLUSION	EXCLUSION
LANGUAGE	English	Non-English
TIMELINE	2022-2024	< 2022
LITERATURE TYPE	Journal (Article)	Conference, Book, Review
SUBJECT AREA	Social science	Besides Computer and Engineering/Others

Data Abstraction and Analysis
In this research, a comprehensive analysis was conducted by researchers focusing on identifying related subjects and subtopics. The data collection phase involved a meticulous

examination of 15 papers to extract statements or information related to the research questions. The subsequent phase involved a collaborative assessment by the authors and experts to group and organize the findings related to Best Practices in Supporting Career Transition for Students with Special Needs in the 21st Century. Three key themes emerged: 1)Inclusive Career Transition Programs, 2)Barriers and Facilitators in Career Transition and 3)Innovative Practices and Pedagogies. The authors ensured the interconnectedness and relevance of these themes, collaborating to address any disparities and fine-tuning the themes for logical flow and consistency. Expert validation, conducted by Ts. Dr. Rozniza Zaharudin, from USM, played a crucial role in establishing the clarity, significance, and sufficiency of each sub-theme, ensuring domain validity. Adjustments were made based on feedback and input from experts, enhancing the overall quality of the research.
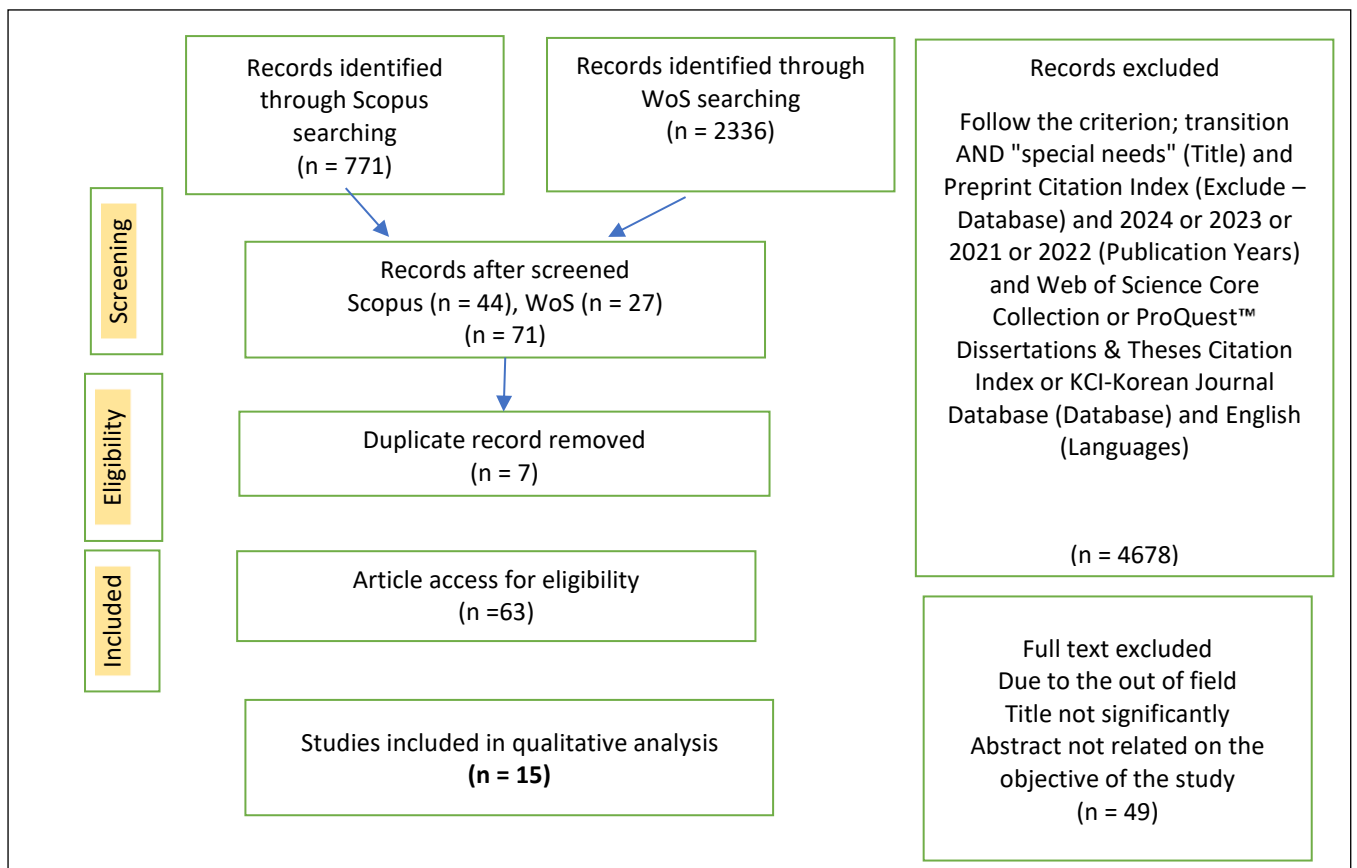

Figure 1: PRISMA

Result and Finding

Inclusive Career Transition Programs

Authors	Title	Advantages and Finding
(Lambert et al., 2023)	Perspectives on the implementation of pre-ETS services: Identification of barriers and facilitators to early career planning for youth with disabilities	Pre-ETS benefits 14-16 year-olds, but educators and counselors need more resources, ongoing training, and engaging activities to make transitions meaningful and engaging.
(Imai et al., 2023)	Efforts and Effectiveness in Improving Knowledge and Skills of Vocational Assessment for Teachers Supporting Career Decisions of Students with Intellectual Disabilities	The study found that a vocational assessment training program significantly enhanced teachers' understanding and practices, with its effectiveness influenced by their experience, particularly for professionals with foundational knowledge in vocational rehabilitation.
(Peña-Quintana & Santana-Vega, 2022)	The Transition to Employment in Wales and the Canary Islands for People with Intellectual Disabilities: Supported Employment	The study reveals that while Wales has a more advanced approach to assisting young people with intellectual disabilities in employment, both Canary Islands and Wales face similar barriers, emphasizing the need for support.
(Poppen et al., 2024)	Transition self-assessment tool: The development and field testing of a statewide assessment of pre-employment transition services (2024)	The study reveals that while high schools provide career-related services, not all disabled students have access. Schools participating in statewide transition programs offer better services, and a statewide needs assessment aligns with existing knowledge, guiding state goals and strategies.

Barriers and Facilitators in Career Transition

Authors	Title	Advantages and Finding
(Menze et al., 2023)	Long-term scarring from institutional labelling: The risk of NEET of students from schools for learning disability in Germany	The label of 'having attended a special needs school' does generate long-term scars above and beyond low school attainment. However, this is only the case for school leavers with a lower secondary school certificate but not for those without school certificate.
(Yngve et al., 2023)	Establishment in productive occupations and perceived work ability among former students with special educational needs one year after upper secondary education	The findings suggest that in order to facilitate the transition from education to employment in productive occupations, children with special educational needs require person-centered support to address challenges both inside and outside of upper secondary school
(Arias-Pastor et al., 2023)	Perceptions and preparedness of secondary teacher trainees to foster inclusive schools for all	Future educators' positive attitudes towards inclusive education are influenced by factors like regular contact with vulnerable individuals, nonformal training, and high teacher self-efficacy, which enhance their ability to address diversity.
(Wang et al., 2024)	Navigating the school transition: Within- and between-person associations between adolescents' academic self-efficacy, school relatedness, and intrinsic academic motivation	The study found positive associations between academic self-efficacy, intrinsic motivation, and school relatedness, suggesting that social connections and belongingness are crucial for boosting motivation after school transition.
(Mutlu et al., 2024)	Logics of career choice - concept and results of an approval-sensitive career guidance workshop	The study partially confirmed the importance of social approval and autonomy, but rejected hypotheses about reflection of needs and intention to act. The workshop led to a decrease in career choice interest but increased retrospective activity reporting in the treatment group

Innovative Practices and Pedagogies

Authors	Title	Advantages and Finding
(Hellemann, 2022)	towards a problem-posing pedagogy: Using teacher-in-role in a special needs classroom	The study found that integrating drama-based pedagogy with Freire's problem-posing pedagogy enhances learners' decision-making abilities, critical thinking, self-esteem, and confidence in the classroom.
(Schellenberg et al., 2022)	Empower Peers 4 Careers: Positive Peer Culture to Prepare Adolescents' Career Choices	The peer group meetings enhance social-emotional competence and class climate while examining the role of moderators like teachers in training on resilience promotion and strengths orientation for career choice preparation.
(Seko et al., 2022)	Transitions Theatre: An Arts-Informed Interprofessional Education Workshop	The workshop improved learners' confidence in transition support and interprofessional collaboration, enhancing their empathetic engagement. The evidence-based teaching approach of readers' theater and coteaching model provided an unique opportunity to understand clients' challenges.
(Phuong & Quynh, 2022)	Training Perception and Work Engagement: The Mediating Role of Organisational-Based Self-Esteem and Self-Efficacy	The study explores employee engagement factors in Central European countries transitioning from central-command to market economies, emphasizing the need for effective Western human resource practices for academics and practitioners.
(Battisti et al., 2022)	Distance learning during COVID-19 lockdown: Impact on adolescents with specific learning disorders and their parents	The present study prompts special considerations for students with special educational needs not only when providing conventional instruction, but especially when it is necessary to suddenly modify teaching approaches
(Glaze et al., 2023)	Impact of COVID-19 on Referral Patterns and Service Delivery for an Integrated Behavioral Health Program	The study found that after the onset of COVID-19, there was a significant increase in referrals related to social determinants of health for WIC families, and the transition to telehealth services effectively supported their needs.

Discussion and Conclusion

The findings underscore the critical importance of well-resourced, inclusive career transition programs tailored to the unique needs of students with disabilities. Pre-Employment Transition Services (Pre-ETS) are especially beneficial for younger students, but

their success depends on sufficient resources, continuous training for educators and counselors, and engaging, relevant activities (Vilbas & King-Sears, 2023). Vocational assessment training programs highlight the need for targeted professional development, particularly for those with foundational knowledge in vocational rehabilitation, as experienced educators are better at applying these assessments to improve student outcomes. Regional differences, such as those between Wales and the Canary Islands, reveal the varied approaches to supporting youth with intellectual disabilities, though common barriers suggest the need for consistent, region-wide support (Teresa Pena-Quintana & Santana-Vega, 2022). Additionally, disparities in access to career-related services in high schools highlight the impact of statewide transition programs, emphasizing the necessity of comprehensive needs assessments to guide state strategies and ensure equitable support for all students during career transitions (Viezel et al., 2022).

The integration of drama-based pedagogy with Freire's problem-posing approach significantly enhances learners' decision-making abilities, critical thinking, self-esteem, and confidence in the classroom. Additionally, peer group meetings bolster social-emotional competence and improve the overall class climate, with moderators like teachers playing a key role in resilience promotion and career choice preparation (Hannon & O'Donnell, 2022; Hellemann, 2022; Noraini & Rohaizat, 2021). Workshops focusing on transition support and interprofessional collaboration boost learners' confidence and empathetic engagement. Evidence-based teaching methods, such as readers' theater and the coteaching model, offer unique insights into clients' challenges (Martin et al., 2006; Test et al., 2009). Furthermore, in Central European countries transitioning from central-command to market economies, effective Western human resource practices are crucial for fostering employee engagement, providing valuable lessons for both academics and practitioners (Kohler & Field, 2003; Seko et al., 2022).

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