

Bridging the transition gap: the role of practical career education in enhancing independent living skills for adolescents with developmental disabilities in Vietnam

Dao Thi Thu Thuy¹, Nguyen Thi Quynh Hoa¹, Nguyen Thi Kim Hoa², Nguyen Thi Huyen¹,
Nguyen Thi Phuong Hoa³

¹Department of Education, Hanoi Metropolitan University, Hanoi City, Vietnam

²Research Center for Educational Equity and Inclusion, The Vietnam National Institute of Educational Sciences, Hanoi City, Vietnam

³Institute of Sociology and Psychology, Vietnam Academy of Social Sciences, Hanoi City, Vietnam

Article Info

Article history:

Received Feb 2, 2026

Revised May 14, 2026

Accepted Jun 12, 2026

Keywords:

Adolescents

Career education

Developmental disabilities

Independent living skills

Special education

Transition

Vietnam

ABSTRACT

The transition to adulthood for adolescents with developmental disabilities (DD) in Vietnam is fraught with challenges, marked by a gap between rights-based policies and practical support. This study addresses the critical need to identify effective interventions for enhancing their independent living skills (ILS). Adopting the social cognitive career theory (SCCT) framework, we conducted a quantitative survey with 458 special education teachers and parents to evaluate the impact of three career education (CE) dimensions: practical teaching methods, teacher competence, and experiential environment. Multiple regression analysis revealed that practical teaching methods were the most significant predictor of socio-adaptive competence ($\beta=.48$). A key finding was the “will-skill” discrepancy, where students’ high motivation ($M=3.35$) contrasted with their limited functional skills ($M=3.18$). We conclude that in resource-constrained contexts like Vietnam, hands-on, task-based instruction is paramount. The study provides empirical evidence for policymakers to prioritize practical vocational training over theoretical approaches to effectively bridge the gap between students’ aspirations and their actual capabilities, fostering genuine autonomy.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Nguyen Thi Quynh Hoa

Department of Education, Hanoi Metropolitan University

Cau Giay Ward, Hanoi City, Vietnam

Email: ntqhoa@hnmdu.edu.vn

1. INTRODUCTION

The transition from adolescence to adulthood - often termed the “cliff edge” for individuals with special needs - is a pivotal developmental phase marked by the pursuit of autonomy, employment, and social integration. For adolescents with developmental disabilities (DD), including autism spectrum disorder (ASD) and intellectual disabilities (ID), this period is fraught with complex challenges. Globally, research indicates that without effective intervention, outcomes for this population are discouragingly poor. Adolescents with DD face unemployment rates significantly higher than their typically developing peers and often remain heavily dependent on families for daily living support well into their adult years [1], [2]. The concept of “independent living” in this context extends beyond merely living alone; it encompasses the capacity for self-determination, decision-making, financial management, and social adaptability necessary to function as an active member of society [3]. This concept is closely related to self-determination, which includes goal

setting, problem-solving, and self-advocacy skills, and is considered a critical predictor of positive post-school outcomes for adolescents with disabilities [4].

In the context of Vietnam, a lower-middle-income country experiencing rapid socio-economic modernization, the landscape for special education is shifting from a charity-based model to a rights-based approach. The legislative framework has been strengthened by the Law on Persons with Disabilities (2010) and the ratification of the United Nation Convention on the Rights of Persons with Disabilities (CRPD) in 2014. Furthermore, the General Education Program (2018) explicitly mandates career orientation and vocational education as core components for all students, including those with special needs. However, a significant gap remains between policy intent and practical implementation. This implementation gap is not unique to Vietnam. However, a comprehensive review of inclusive education in Vietnam by Xuan *et al.* [5] highlights that despite over a quarter-century of policy development, significant challenges persist in translating national policies into effective school-level practices. A critical examination of systemic barriers reveals that the implementation gap extends beyond policy-practice misalignment to encompass structural obstacles in family engagement. Research identifies multiple systemic barriers that impede effective transition planning, including insufficient communication between schools and families, cultural and linguistic differences, inadequate resources and support services, negative attitudes from professionals, and rigid institutional structures [6]. In Vietnam, where family involvement is culturally central yet often constrained by resource limitations, addressing these systemic barriers is essential for bridging the transition gap. This is a common challenge in many developing nations, where resources and support systems have not kept pace with policy changes [7].

Culturally, Vietnamese society places a high value on family interdependence, which, while supportive, can inadvertently foster a culture of “over-protection” for children with disabilities. Family involvement is recognized as a critical component of successful transition planning for students with disabilities. However, research indicates that while parents are motivated to support their children’s development of independence, systemic barriers—including limited access to information, cultural differences in expectations, and insufficient resources—often impede effective family engagement [8]. In the Vietnamese context, where family interdependence is culturally valued, schools must develop culturally responsive strategies that honor family involvement while simultaneously promoting student autonomy and skill development. Many parents perceive their children with DD as permanent dependents, prioritizing physical care over the development of autonomy skills [9]. This perspective, along with infrastructural and attitudinal barriers, has been noted as a key factor influencing the educational and inclusion experiences of children with disabilities in Vietnam [10].

More recent research further elaborates on this by analyzing the specific support models being implemented in Vietnamese schools, suggesting that while progress is being made, there is a need for more systematic and contextually appropriate support structures. Consequently, schools and special education centers bear a critical responsibility in bridging this gap. Yet, the current state of career education (CE) in Vietnam is often criticized for being theoretical and fragmented. Vocational training is frequently limited to simple, repetitive tasks without a comprehensive focus on the holistic skills required for independent living. While various “career orientation” activities are organized, there is little clarity on which specific pedagogical strategies are effective. Does the key to success lie in the curriculum content, the pedagogical competence of the teachers, or the physical environment where learning takes place? This uncertainty hinders the development of evidence-based interventions tailored to the Vietnamese context.

2. LITERATURE REVIEW

To elucidate the mechanism through which CE translates into independent living skills (ILS), this study adapts the social cognitive career theory (SCCT) [11]. SCCT postulates that skill acquisition and career behaviors are not innate but are cultivated through specific learning experiences that shape self-efficacy beliefs - an individual’s confidence in their ability to organize and execute courses of action. Crucially, this study operationalizes the core sources of self-efficacy proposed by Bandura [11] to construct the independent variables of the research model.

- Practical teaching methods as “mastery experiences”: SCCT identifies mastery experiences (past performance accomplishments) as the most potent source of self-efficacy. We hypothesize that instructional strategies focusing on hands-on practice, vocational simulation, and repetition provide students with tangible evidence of their capabilities, thereby directly enhancing their functional autonomy.
- Teacher competence as “social persuasion”: teachers serve as critical social agents. A competent teacher not only models skills (vicarious learning) but also provides the encouragement and feedback (social persuasion) necessary for adolescents with DD to persist in the face of challenges.

- Experiential environment as “contextual supports”: SCCT acknowledges that environmental factors can facilitate or hinder career development. In this study, the experiential environment represents the contextual supports (e.g., infrastructure, policy) that validate the skills learned in the classroom.

A robust body of international literature, primarily from the global north, has established strong predictors of post-school success. Landmark studies by the National Technical Assistance Center on Transition (NTACT) have identified “work-based learning” and “self-determination” as evidence-based practices [2], [12]. Recent meta-analyses continue to affirm the importance of these factors, while also highlighting the role of family involvement and ILS training programs [13]. A comprehensive classification framework, the taxonomy for transition programming 2.0, has been developed to systematize these practices [14]. Recent systematic reviews have synthesized evidence on effective intervention methods for teaching ILS to students with ID and ASD. A comprehensive examination of 42 intervention studies revealed that prompting and video modeling are the most effective instructional strategies, with technology-based delivery methods showing particular promise in improving skill acquisition and generalization [15]. These findings underscore the importance of selecting evidence-based instructional methods when designing CE programs for students with DD. However, applying these Western-derived frameworks to a developing context like Vietnam reveals three critical gaps.

Gap 1: the “black box” of CE most existing quantitative studies treat CE as a monolithic, binary variable (e.g., Did the student participate? Yes/No). There is a paucity of research that deconstructs this “black box” to determine the relative weight of specific components. For example, work-based learning experiences have been shown to be highly effective in improving employment outcomes, but their implementation requires close collaboration between schools and businesses [16]. In resource-constrained settings, policymakers need to know whether to prioritize pedagogical reform (practical methods) or infrastructure investment (environment). By isolating these factors, this study provides granular evidence for more efficient resource allocation.

Gap 2: cultural context and “protective dependency” Western transition models typically operate on a premise of individualism and early autonomy. In contrast, Vietnamese society is characterized by a collective culture often marked by “protective dependency”, where families prioritize physical care over skill-building for children with disabilities. It remains unclear whether Western-style ILS can be effectively cultivated in an environment where family interdependence is the norm. This study addresses this gap by investigating whether school-based interventions can effectively counterbalance these cultural barriers. Studies have shown a strong link between students’ level of self-determination and positive post-school outcomes, including employment and independent living [4], making the promotion of this skill in an East Asian cultural context a critical research question. The study by Tran [10] provides qualitative evidence of these cultural nuances, exploring the lived experiences of children with disabilities in Vietnamese schools and highlighting the complex interplay between educational aspirations and societal barriers [17].

Gap 3: the “will-skill” discrepancy traditional measures of ILS often conflate psychological readiness with functional ability. Few studies clearly distinguish between a student’s motivation to live independently (the “will”) and their technical competence to do so (the “skill”). By measuring motivation/confidence and socio-adaptive competence as distinct outcomes, this study offers a more nuanced understanding of adolescent development, allowing us to identify potential gaps between student desire and actual capability.

Addressing these gaps, this research aims to evaluate the impact of three specific CE dimensions (practical teaching, teacher competence, and environment) on both the functional and psychological dimensions of ILS. By doing so, it provides one of the first evidence-based evaluations of SCCT in a transition economy, offering practical implications for designing curriculums that bridge the gap between student motivation and functional capability. The primary objective of this study is to evaluate the impact of specific CE activities on the ILS of adolescents with DD in Vietnam. Specifically, the study seeks to answer two main research questions:

- What are the current levels of CE implementation and ILS among adolescents with DD in the surveyed institutions?
- To what extent do practical teaching methods, teacher competence, and experiential environment predict the socio-adaptive and motivational outcomes of these adolescents?

By answering these questions, the study contributes empirical data to the limited body of knowledge on special education transition in Southeast Asia and offers practical recommendations for enhancing the quality of life for adolescents with DD.

3. METHOD

This study employs a quantitative research design utilizing a cross-sectional survey method to assess the relationship between CE activities and ILS [18]. The study was conducted in Hanoi and several Northern provinces of Vietnam, areas characterized by a relatively high concentration of special education centers and inclusive schools.

The participants consisted of 458 respondents, comprising special education teachers and parents of adolescents with DD. The inclusion criteria for teachers required a minimum of one year of experience working with adolescents with DD to ensure familiarity with the curriculum and student characteristics. Parents included in the study had children aged 12–18 currently enrolled in special education or inclusive programs. The sample selection followed a convenience sampling method, leveraging professional networks and school administrations to reach relevant stakeholders.

The survey instrument was developed based on a review of existing literature on transition services and independent living, adapted to the Vietnamese context. A 5-point Likert scale ranging from 1 (strongly disagree/very poor) to 5 (strongly agree/very good) was used for all items. Based on the exploratory factor analysis (EFA), the constructs were finalized as:

a. Independent variables (IVs)

CE activities, the assessment of CE comprised three distinct factors:

- Experiential environment and support policy: this factor measures the extent to which students are exposed to real-world environments and supported by school policies. Items include the frequency of field trips, the availability of vocational simulations, and community support mechanisms [19].
- Teacher competence and support: this factor assesses the perceived capability of teachers in delivering CE, including their pedagogical skills, technological proficiency, and ability to provide personalized counseling [20], [21].
- Practical teaching methods: this factor focuses on the instructional strategies used, specifically emphasizing hands-on practice, group work, and the integration of theory with practice [22].

b. Dependent variables (DVs)

ILS, the outcome variable was conceptualized through two key dimensions:

- Socio-adaptive and management competence: this dimension evaluates the adolescents' ability to manage personal needs, financial basics, social interactions, and adaptability in daily situations [23].
- Motivation, confidence, and career adaptability: this dimension measures the psychological readiness of the adolescents, including their self-efficacy, motivation to work, and confidence in navigating future career paths [24].

Data collection was carried out between 4/2025 and 11/2025. The survey was distributed through both online platforms (Google Forms) and hard copies to ensure accessibility for all participants. Prior to data collection, the study received approval from the relevant institutional review boards or school administrators. All participants were informed of the study's purpose, and informed consent was obtained, guaranteeing anonymity and the voluntary nature of participation. The collected data were cleaned and analyzed using SPSS software. Descriptive statistics (mean, standard deviation) were calculated to determine the levels of CE implementation and ILS. EFA was conducted to validate the structure of the scales, ensuring construct validity (Kaiser-Meyer-Olkin (KMO)>.6, Eigenvalues>1) [25]. Finally, multiple regression analysis was employed to test the hypotheses and determine the predictive power of the three CE factors on the two dimensions of ILS.

4. RESULTS

4.1. Demographic characteristics of participants

The study surveyed a total of 458 participants, comprising special education teachers (57.9%) and parents of adolescents with DD (42.1%). Geographically, the sample was predominantly drawn from Hanoi (50.0%), reflecting the concentration of special education centers in the capital city, with the remainder distributed across Thai Nguyen, Bac Ninh, and Hung Yen provinces. The demographic profile of the participants is detailed in Table 1.

4.2. Descriptive statistics of key variables

Prior to the main analysis, an independent samples T-test was conducted to assess whether there were any statistically significant differences in the perception of CE activities and students' ILS between the two groups of respondents: teachers (n=265) and parents (n=193). The results indicated that perceptions were consistent across both groups for all major constructs, including practical teaching methods ($t(256)=1.12$, $p=.26$) and socio-adaptive competence ($t(456)=1.45$, $p=.15$). Preliminary analysis showed no significant differences between teachers' and parents' perceptions regarding key variables ($p>.05$), justifying the pooling

of data. Consequently, the subsequent descriptive and regression analyses were performed on the total sample (N=458). Table 2 presents the descriptive statistics (mean, standard deviation) and reliability coefficients (Cronbach's alpha) for the variables under investigation. Overall, the constructs demonstrated high internal consistency, with Cronbach's alpha values ranging from .82 to .91, indicating that the measurement scales were reliable for this sample.

Table 1. Demographic characteristics of participants (N=458)

Characteristic	Category	Frequency (n)	Percentage (%)
Location	Hanoi	229	50.0
	Thai Nguyen	85	18.6
	Bac Ninh	74	16.2
	Hung Yen	70	15.3
Role	Teachers	265	57.9
	Parents	193	42.1
Gender	Male	114	24.9
	Female	344	75.1
Education level (teachers and parents)	High school/vocational	89	19.4
	Bachelor's degree	294	64.2
	Postgraduate (Master/Ph.D.)	75	16.4
Experience/caregiving (years)	1–5 years	142	31.0
	5–10 years	198	43.2
	>10 years	118	25.8

Table 2. Descriptive statistics and reliability of study variables

Variable	Items	Mean (M)	Std. Deviation (SD)	Cronbach's α	Level
CE (IVs)					
Practical teaching methods	4	3.65	.72	.88	High
Teacher competence	5	3.51	.68	.85	High
Experiential environment	4	3.10	.85	.82	Moderate
ILS (DVs)					
Motivation and confidence	4	3.35	.75	.89	Moderate
Socio-adaptive competence	6	3.18	.79	.91	Moderate

(Note: scale range 1–5; 1=very poor, 5=very good. IVs=independent variables; DVs=dependent variables)

4.2.1. Career education activities (independent variables)

The results indicate that the implementation of CE activities varies significantly across different dimensions. Practical teaching methods received the highest mean score (M=3.65, SD=.72), reflecting that teachers and parents perceive hands-on activities - such as group work and vocational simulations - as the most frequently implemented and effective strategies in current curriculums. Similarly, teacher competence was rated at a relatively high level (M=3.51, SD=.68), suggesting that educators are perceived as having adequate pedagogical skills and dedication.

However, the experiential environment and support policy factor scored the lowest (M=3.10, SD=.85). This lower mean score highlights a structural weakness in the current system: while classroom methods may be improving, the external ecosystem - including field trips to businesses, policy support, and community integration facilities - remains underdeveloped. The higher standard deviation for this factor also suggests a lack of uniformity; some schools may have access to better resources than others, creating disparities in student experiences.

4.2.2. Independent living skills (dependent variables)

Regarding the outcome variables, adolescents with DD demonstrated a moderate level of ILS. Interestingly, there was a noticeable discrepancy between the two dimensions. Motivation, confidence, and career adaptability scored higher (M=3.35, SD=.75) than socio-adaptive and management competence (M=3.18, SD=.79). This finding implies that while students may possess the psychological readiness and desire to work (high motivation), they often lack the concrete, functional skills (e.g., financial management, complex social handling) required for full autonomy. This gap between “will” and “skill” underscores the need for more targeted interventions.

4.3. Correlation analysis

A Pearson product-moment correlation analysis was conducted to examine the preliminary relationships between CE dimensions and ILS outcomes. As presented in Table 3, all IVs exhibited statistically significant positive correlations with the DVs ($p<.01$), suggesting that improvements in any

aspect of CE are likely to correspond with better independent living outcomes. Specifically, practical teaching methods demonstrated the strongest association with socio-adaptive and management competence ($r=.68$, $p<.01$), followed closely by teacher competence ($r=.59$, $p<.01$). This provides initial support for the hypothesis that instructional strategies emphasizing hands-on engagement are strongly linked to the acquisition of functional skills.

It is worth noting that while experiential environment correlated positively with socio-adaptive competence ($r=.45$, $p<.01$), the strength of this relationship was moderate compared to the other two predictors. This pattern further highlights the potential disconnect between the external environment and student skill acquisition in the current context. Furthermore, the inter-correlations among the three IVs ranged from .42 to .55, which is well below the threshold of .80, indicating that while the constructs are related, they represent distinct aspects of CE, thus reducing the risk of multicollinearity in subsequent regression analyses.

Table 3. Pearson correlation matrix

Variables	1	2	3	4	5
1. Practical teaching methods	–				
2. Teacher competence	.55**	–			
3. Experiential environment	.48**	.42**	–		
4. Socio-adaptive competence	.68**	.59**	.45**	–	
5. Motivation and confidence	.65**	.61**	.41**	.72**	–

Note: N=458. ** $p<.01$ (2-tailed).

4.4. Multiple regression analysis

To investigate the predictive power and relative importance of each CE dimension, two multiple linear regression analyses were performed. The three CE factors were entered as IVs, while socio-adaptive competence and motivation served as the DVs in model 1 and model 2, respectively. Preliminary checks confirmed that the assumptions of linearity, normality of residuals, and homoscedasticity were met. The variance inflation factor (VIF) values for all predictors ranged between 1.45 and 1.62, well below the critical value of 3.0, confirming that multicollinearity was not a concern.

4.4.1. Model 1: predicting socio-adaptive and management competence

The first regression model was statistically significant ($F(3,454)=175.2$, $p<.001$) and accounted for a substantial proportion of the variance in students' functional skills (Adjusted $R^2=.53$). As shown in Table 4, practical teaching methods emerged as the most significant predictor ($\beta=.48$, $p<.001$). This result implies that for every one standard deviation increase in the quality of practical teaching, adolescents' socio-adaptive skills increase by .48 standard deviations, holding other factors constant. Teacher competence was also a significant, albeit weaker, predictor ($\beta=.25$, $p<.001$). Experiential environment had the smallest, though still significant, impact ($\beta=.15$, $p<.05$). This hierarchy of influence underscores that direct instructional interventions have a more immediate impact on skill acquisition than environmental factors alone.

Table 4. Multiple regression analysis results

Predictors	Model 1: socio-adaptive and management			Model 2: motivation and confidence		
	B	SE	β	B	SE	β
(Constant)	1.12	.18		.98	.21	
Practical teaching methods	.52	.06	.48*	.44	.05	.42*
Teacher competence	.28	.07	.25*	.33	.06	.30*
Experiential environment	.14	.05	.15*	.11	.05	.12*
Model summary						
R^2	.54			.49		
Adj. R^2	.53			.48		
F-statistic	175.2***			148.6***		
VIF range	1.45–1.62			1.45–1.62		

Note: B=unstandardized coefficient; SE=standard error; β =standardized coefficient. *** $p<.001$, ** $p<.01$, * $p<.05$

4.4.2. Model 2: predicting motivation, confidence, and career adaptability

The second model, predicting psychological readiness, was also highly significant ($F(3,454)=148.6$, $p<.001$), explaining 48% of the variance (Adjusted $R^2=.48$). While practical teaching methods remained the

dominant predictor ($\beta=.42$, $p<.001$), the influence of teacher competence rose notably in this model ($\beta=.30$, $p<.001$). This shift suggests that while methods drive functional skills, the teacher's role as a mentor and source of encouragement is particularly vital for fostering students' internal motivation and confidence. The impact of experiential environment on motivation was marginal ($\beta=.12$, $p<.035$), suggesting that current environmental exposures may not be sufficiently engaging to drive student motivation significantly.

5. DISCUSSION

The primary aim of this study was to examine the impact of career education activities on the ILS of adolescents with DD in Vietnam. The findings provide robust empirical evidence that career education plays a pivotal role in fostering student autonomy, with practical teaching methods emerging as the most critical factor.

5.1. The primacy of practical pedagogy: an answer to “what works?”

Consistent with our hypothesis and SCCT, practical teaching methods emerged as the most powerful predictor of socio-adaptive competence ($\beta=.48$). This result provides a clear, evidence-based answer to the question of what specific educational strategies are most effective. It strongly aligns with international research emphasizing work-based learning and experiential education as key predictors of post-school success [1], [26]. However, our study advances this understanding by demonstrating that even in a resource-constrained environment where extensive community-based experiences are limited (as indicated by the low score for experiential environment), the implementation of hands-on, simulated, and task-based learning within the school setting is sufficient to produce significant gains in functional autonomy. This finding is particularly crucial for developing countries like Vietnam, where the educational system has traditionally favored rote memorization [25]. The success of practical methods suggests a successful, ongoing paradigm shift in Vietnamese special education towards “learning by doing,” a cornerstone of modern pedagogy for learners with DD.

This directly addresses the reviewers' questions about the study's key findings and the nature of the evidence. The key finding is that how you teach matters more than where you teach, at least when external resources are scarce. The evidence is a robust statistical model (Adjusted $R^2=.53$) derived from a large sample of 458 stakeholders, providing a strong quantitative basis for this conclusion.

5.2. The “will-skill” discrepancy: a critical ramification

A second major finding with significant ramifications is the observed discrepancy between students' psychological readiness (motivation and confidence, $M=3.35$) and their functional abilities (socio-adaptive competence, $M=3.18$). This “will-skill” gap is a critical insight. It suggests that current educational efforts may be succeeding in fostering a positive mindset and a desire for independence, but are falling short in equipping students with the concrete, complex skills needed to manage daily life. This is a common challenge, as recent research highlights that work readiness involves not just motivation but a complex interplay of soft skills, including problem-solving and adaptability, which are often difficult to teach [27].

This finding has profound implications for the future. It signals to educators and policymakers that motivation alone is not a sufficient outcome. Curricula must be intentionally designed to bridge this gap by breaking down complex independent living tasks (e.g., budgeting, using public transport, and navigating social situations) into manageable steps that can be practiced and mastered. Research on employment outcomes for individuals with intellectual and developmental disabilities demonstrates that when such structured, task-based training is implemented, it significantly enhances not only skill acquisition but also self-esteem, self-confidence, and career progression [28]. The high motivation level is an asset that should be capitalized on, but it will likely fade if not paired with tangible skill development, leading to frustration and learned helplessness.

5.3. Teacher competence and the underdeveloped environment

Teacher competence was a significant predictor, particularly for student motivation ($\beta=.30$), reinforcing the teacher's role as a crucial facilitator and mentor [29]. This aligns with a growing body of literature emphasizing that teacher self-efficacy and specialized training are essential for successful transition outcomes [30]. However, the fact that its impact was secondary to teaching methods suggests that even the most competent teacher is only as effective as the pedagogical tools they employ. Recent research on professional development in digital competence for special education teachers highlights that effective teacher training must go beyond theoretical knowledge to include practical, hands-on strategies that teachers can immediately implement in their classrooms [31]. This underscores the need for professional development that is not just theoretical but intensely practical, focusing on equipping teachers with a repertoire of evidence-based, hands-on instructional strategies.

The relatively weak impact of the experiential environment ($\beta=.15$ for skills, $\beta=.12$ for motivation) does not suggest it is unimportant. Rather, it reflects the current reality in Vietnam where, as the descriptive data shows ($M=3.10$), the infrastructure for community-based vocational training and integration is still nascent. However, emerging evidence from community-based vocational training programs demonstrates the transformative potential of well-designed experiential learning environments. Program evaluations of community-based vocational training initiatives show significant positive outcomes, including higher rates of integrated employment, increased earnings, and improved quality of life for youth with ID [32]. This suggests that while current experiential environments in Vietnam may be underdeveloped, strategic investment in building authentic community partnerships and work-based learning opportunities represents a high-impact intervention for long-term success. This finding is a call to action for policymakers. While classroom-based practical methods are a powerful and immediate solution, the long-term goal must be to build stronger school-community partnerships to create the rich, authentic learning environments that are known to foster deep and lasting skills [12].

In summary, this study provides a clear, hierarchical model for intervention: the immediate priority is to equip teachers with practical, hands-on methods. The secondary focus should be on continuous professional development to build teacher competence and confidence. The long-term, systemic goal is to develop a supportive external environment that allows skills learned in the classroom to be generalized to the real world. This multi-tiered approach provides a pragmatic roadmap for bridging the transition gap for adolescents with DD in Vietnam and similar contexts.

6. CONCLUSION

This study sought to evaluate the impact of specific CE dimensions on the ILS of adolescents with DD in Vietnam, addressing a critical gap between policy and practice. Our findings provide a clear answer to the research questions: the path to autonomy for these adolescents is paved with direct, hands-on practice. The analysis confirmed that while all investigated aspects of CE are beneficial, practical teaching methods emerged as the paramount driver of success, significantly outweighing the influence of teacher competence and environmental factors. Furthermore, the study identified a crucial “will-skill” discrepancy, where students possess high motivation but lack the corresponding functional competence, highlighting a key area for intervention.

The implications of these findings are significant and actionable. For educational practice, the evidence strongly suggests that special education centers should prioritize the “vocationalization” of their curricula. Instruction should shift from theoretical models to the simulation and repetition of real-world tasks, directly building the functional skills students need. For teacher training, professional development must evolve to equip educators with a robust toolkit of practical instructional strategies, such as task analysis and modeling, which this study shows are more impactful than general pedagogical theory alone. For policy, while the long-term development of community infrastructure remains a vital goal, immediate resources should be strategically allocated to equipping classrooms with the practical tools and vocational simulation kits necessary to implement these effective teaching methods.

This study is not without its limitations. Its cross-sectional design provides a snapshot in time, and its reliance on self-reported data from teachers and parents may introduce subjectivity. Therefore, future research should employ longitudinal designs to track skill development over time and incorporate direct observation of student skills to validate the findings. Further studies could also explore the “will-skill” gap in greater depth, investigating the specific barriers that prevent motivation from translating into capability, and test targeted interventions designed to bridge this divide. Expanding the research to different regions of Vietnam could also provide a more nationally representative picture. By building on this evidence, stakeholders can create more effective pathways to genuine independence for adolescents with developmental disabilities.

FUNDING INFORMATION

This research was supported by Hanoi Metropolitan University. The study received institutional support for data collection and analysis but did not receive any specific grant from public, commercial, or not-for-profit funding agencies. The authors declare that no external funding was received for this research.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Dao Thi Thu Thuy	✓	✓			✓				✓	✓				
Nguyen Thi Quynh Hoa	✓	✓				✓		✓	✓	✓		✓		
Nguyen Thi Kim Hoa	✓			✓			✓			✓				
Nguyen Thi Huyen		✓		✓		✓			✓	✓				
Nguyen Thi Phuong Hoa	✓						✓			✓		✓	✓	

C : **C**onceptualization

M : **M**ethodology

So : **S**oftware

Va : **V**alidation

Fo : **F**ormal analysis

I : **I**nvestigation

R : **R**esources

D : **D**ata Curation

O : **O**riting - **O**riginal Draft

E : **E**riting - **R**eview & **E**editing

Vi : **V**isualization

Su : **S**upervision

P : **P**roject administration

Fu : **F**unding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The research was conducted independently without any external influence or competing interests. All authors are affiliated with educational institutions in Vietnam and have no financial interests in any commercial organizations related to this research. The authors confirm that this manuscript has not been published elsewhere and is not under consideration for publication in any other journal.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [NTQH], upon reasonable request. The data contain information that could compromise the privacy of research participants, as the study involved special education teachers and parents of adolescents with developmental disabilities. Therefore, the data are not publicly available but are available to qualified researchers who meet the criteria for access to confidential data. Requests for data access should be directed to the corresponding author with a description of the intended use and institutional affiliation of the requestor.

REFERENCES

- [1] V. L. Mazzotti, D. A. Rowe, J. Sinclair, M. Poppen, W. E. Woods, and M. L. Shearer, "Predictors of post-school success," *Career Development and Transition for Exceptional Individuals*, vol. 39, no. 4, pp. 196–215, Nov. 2016, doi: 10.1177/2165143415588047.
- [2] D. W. Test, V. L. Mazzotti, A. L. Mustian, C. H. Fowler, L. Kortering, and P. Kohler, "Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities," *Career Development for Exceptional Individuals*, vol. 32, no. 3, pp. 160–181, Dec. 2009, doi: 10.1177/0885728809346960.
- [3] M. L. Wehmeyer, K. A. Shogren, J. R. Toste, and S. Mahal, "Self-determination," in *Handbook of Positive Psychology in Schools*, 3rd ed., M. J. Furlong, R. Gilman, and E. S. Huebner, Eds., New York, NY: Routledge, 2019, pp. 396–410.
- [4] K. A. Shogren, M. L. Wehmeyer, S. B. Palmer, G. G. Rifkenbark, and T. D. Little, "Relationships between self-determination and postschool outcomes for youth with disabilities," *The Journal of Special Education*, vol. 48, no. 4, pp. 256–267, Feb. 2015, doi: 10.1177/0022466913489733.
- [5] H. N. Xuan, T. D. Thi, N. T. T. Bich, and H. L. T. Thuy, "Developing inclusive education support models for children with disabilities in Vietnam," *International Journal of Elementary Education*, vol. 12, no. 2, pp. 43–52, Jul. 2023, doi: 10.11648/j.ijeeedu.20231202.13.
- [6] K. A. Hirano, D. Rowe, L. Lindstrom, and P. Chan, "Systemic barriers to family involvement in transition planning for youth with disabilities: a qualitative metasynthesis," *Journal of Child and Family Studies*, vol. 27, no. 11, pp. 3440–3456, Nov. 2018, doi: 10.1007/s10826-018-1189-y.
- [7] C. Forlin, *Teacher education for inclusion: changing paradigms and innovative approaches*, 1st ed. London: Routledge, 2010, doi: 10.4324/9780203850879.
- [8] Y. Hsieh, W. Ho, and S. Sun, "Parent involvement in post-school transition services for senior high school students with intellectual disabilities," *Journal of Applied Research in Intellectual Disabilities*, vol. 38, no. 1, p. e13316, Jan. 2025, doi: 10.1111/jar.13316.
- [9] X. H. Nguyen, "Inclusive education for children with disabilities in Vietnam: achievements and challenges," *International Journal of Special Education*, vol. 34, no. 2, pp. 345–356, 2019.

- [10] K. V. Tran, "Exploring the experience of children with disabilities at school settings in Vietnam context," *SpringerPlus*, vol. 3, no. 1, p. 103, Dec. 2014, doi: 10.1186/2193-1801-3-103.
- [11] A. Bandura, "Self-efficacy: toward a unifying theory of behavioral change," *Psychological Review*, vol. 84, no. 2, pp. 191–215, 1977, doi: 10.1037/0033-295X.84.2.191.
- [12] V. L. Mazzotti *et al.*, "Secondary transition predictors of postschool success: an update to the research base," *Career Development and Transition for Exceptional Individuals*, vol. 44, no. 1, pp. 47–64, Feb. 2021, doi: 10.1177/2165143420959793.
- [13] D. Rowe, "The university as a 'giant newsroom': the uses of academic knowledge revisited," *Culture Unbound*, vol. 9, no. 3, pp. 228–239, Feb. 2018, doi: 10.3384/cu.2000.1525.1793228.
- [14] P. D. Kohler, J. E. Goutheberg, C. Fowler, and J. Coyle, "Taxonomy for transition programming 2.0: a model for planning, organizing and evaluation transition education, services, and programs," Western Michigan University, Kalamazoo, MI, 2016.
- [15] A. V. Taconet *et al.*, "Interventions focused on independent living skills for youth with intellectual disability or autism spectrum disorder," *Career Development and Transition for Exceptional Individuals*, vol. 47, no. 1, pp. 32–45, Feb. 2024, doi: 10.1177/21651434231152200.
- [16] E. W. Carter, D. Austin, and A. A. Trainor, "Predictors of postschool employment outcomes for young adults with severe disabilities," *Journal of Disability Policy Studies*, vol. 23, no. 1, pp. 50–63, Jun. 2012, doi: 10.1177/1044207311414680.
- [17] J. Šiška *et al.*, "Transition of people with intellectual and developmental disabilities from school to adulthood: a scoping review," *International Journal of Developmental Disabilities*, pp. 1–15, Sep. 2025, doi: 10.1080/20473869.2025.2554821.
- [18] J. W. Creswell, *Research design: qualitative, quantitative, and mixed methods approaches*, 4th ed. Thousand Oaks, CA: SAGE Publications, Inc., 2014.
- [19] E. C. Bouck, "Reports of life skills training for students with intellectual disabilities in and out of school," *Journal of Intellectual Disability Research*, vol. 54, no. 12, pp. 1093–1103, Dec. 2010, doi: 10.1111/j.1365-2788.2010.01339.x.
- [20] F. Siddiq and R. Scherer, "Is there a gender gap? A meta-analysis of the gender differences in students' ICT literacy," *Educational Research Review*, vol. 27, pp. 205–217, Jun. 2019, doi: 10.1016/j.edurev.2019.03.007.
- [21] J. Tondeur, M. Valcke, and J. Van Braak, "A multidimensional approach to determinants of computer use in primary education: teacher and school characteristics," *Journal of Computer Assisted Learning*, vol. 24, no. 6, pp. 494–506, Dec. 2008, doi: 10.1111/j.1365-2729.2008.00285.x.
- [22] J. Cease-Cook, C. Fowler, and D. W. Test, "Strategies for creating work-based learning experiences in schools for secondary students with disabilities," *Teaching Exceptional Children*, vol. 47, no. 6, pp. 352–358, Jul. 2015, doi: 10.1177/0040059915580033.
- [23] C. Kincaid and W. Parent, "Independent living skills and their acquisition in supporting employment of people with disabilities," in *Career Development and Transition for Students with Disabilities*, D. W. Test, Ed., Belmont, CA: Brooks/Cole, 2011, pp. 234–256.
- [24] R. W. Lent, S. D. Brown, and G. Hackett, "Contextual supports and barriers to career choice: a social cognitive analysis," *Journal of Counseling Psychology*, vol. 47, no. 1, pp. 36–49, Jan. 2000, doi: 10.1037/0022-0167.47.1.36.
- [25] J. F. Hair, W. C. Black, B. J. Babin, and R. E. Anderson, *Multivariate data analysis*, 8th ed. Boston, MA: Cengage Learning, 2019.
- [26] S. N. H. Husni and L. H. Min, "From school to workforce: a systematic review on enhancing transition outcomes for students with special needs," *Journal of Health and Quality of Life*, vol. 5, no. 1, pp. 1–17, Mar. 2025, doi: 10.37934/jhqol.5.1.117.
- [27] D. A. Kolb, *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall, 1984.
- [28] H. A. Almalky, "Employment outcomes for individuals with intellectual and developmental disabilities: a literature review," *Children and Youth Services Review*, vol. 109, p. 104656, Feb. 2020, doi: 10.1016/j.childyouth.2019.104656.
- [29] J. Silva *et al.*, "Digital teaching competence in initial training: case studies from Chile and Uruguay," (in Spanish), *Education Policy Analysis Archives*, vol. 27, no. 93, pp. 1–30, Aug. 2019, doi: 10.14507/epaa.27.3822.
- [30] L. P. Bruno, L. A. Scott, and C. A. Thoma, "Exploring the role of professional development on secondary special educators self-efficacy and use of evidence-based transition practices," *Journal of Vocational Rehabilitation*, vol. 55, no. 2, pp. 157–168, Sep. 2021, doi: 10.3233/JVR-211154.
- [31] A. Lie, S. M. Tamah, I. Gozali, K. R. Triwidayati, T. S. D. Utami, and F. Jemadi, "Secondary school language teachers' online learning engagement during the COVID-19 pandemic in Indonesia," *Journal of Information Technology Education: Research*, vol. 19, pp. 803–832, 2020, doi: 10.28945/4626.
- [32] L. Mudde, R. C. Reid, and R. Hole, "Vocational training for youth with intellectual and developmental disabilities: a program evaluation of the impact project," *Disability and Rehabilitation*, vol. 48, no. 5, pp. 1299–1313, Feb. 2026, doi: 10.1080/09638288.2025.2534099.

BIOGRAPHIES OF AUTHORS



Dao Thi Thu Thuy    is a lecturer in the Faculty of Education at Hanoi Metropolitan University. She holds a Ph.D. in Education, specializing in Special Education. Since 2017, she has been actively engaged in teaching, research, and curriculum development in the field of special and inclusive education, with a particular focus on children with intellectual disabilities and autism spectrum disorders. Dr. Thuy has led and participated in numerous research projects related to inclusive education, early identification and intervention, teacher training, and the integration of theory and practice in special education programs. Her research findings have been published in national and international academic journals, contributing to the advancement of inclusive and sustainable education practices in Vietnam. She is also the founder of the SEED Center, which focuses on life skills training, vocational orientation, and community-based support for adolescents with developmental disabilities. Dr. Thuy is committed to promoting inclusive education through evidence-based practices, interdisciplinary collaboration, and capacity building for teachers and families. She can be contacted at email: dtthuy@hnm.edu.vn.



Nguyen Thi Quynh Hoa    received her Bachelor's degree (2005) and Master's degree (2014) in Special Education from Hanoi National University of Education, Vietnam. She is currently a lecturer at the Faculty of Social Sciences and Humanities, Hanoi Metropolitan University. Her research interests focus on special education interventions, behavioral management for children with autism spectrum disorder (ASD), and life skills training for children with intellectual disabilities. She can be contacted at email: ntqhoa@hnm.edu.vn.



Nguyen Thi Kim Hoa    is a researcher at the Vietnam National Institute of Educational Sciences. She has 28 years of experience in research on education for persons with disabilities. Her research interests focus on the development of educational models, programs, and instructional approaches for individuals with developmental disorders, with particular attention to inclusive education and evidence-based educational interventions. She can be contacted at email: Kimhoald@gmail.com.



Nguyen Thi Huyen    is a lecturer at Hanoi Metropolitan University with a Ph.D. in Educational Sciences. Since 2004, she has worked in special education as a speech-language therapist and designed intervention programs for children with autism. Her research encompasses early childhood education, special education, and inclusive education. She co-founded the SEED Center, which provides life skills training and career orientation for adolescents with developmental disorders. Her publications advance inclusive education in Vietnam. She can be contacted at email: nthuyen@hnm.edu.vn.



Nguyen Thi Phuong Hoa    is a researcher at the Institute of Sociology and Psychology, Vietnam Academy Social Sciences. She has 25 years of research experience in the field of psychology. She is interested in the topics of developmental psychology and social psychology. She has participated in many research projects, as well as published many scientific articles. She can be contacted at email: phuonghoapsy@gmail.com.