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Self-Determination of Adolescents with Intellectual and Developmental Disabilities in China: Evidence from Students and Teachers

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ABSTRACT: Self-determination is closely associated with individuals' autonomy and independence and is crucial for people with intellectual and developmental disabilities. This study investigated the self-determination of adolescents with intellectual and developmental disabilities in China. Using the AIR Self-Determination Scale, data were collected from 116 students and 29 corresponding special education teachers. Findings indicated that the adolescent with intellectual and developmental disabilities had a moderate level of self-determination. However, teachers consistently rated students' self-determination lower than students' self-rating. Students' self-evaluations of their self-determination were significantly influenced by geographic location, age, and disability severity, and teacher evaluations were affected by students' age and disability severity, as well as teachers' teaching experience and subject area. The study revealed that teachers face notable challenges in their conceptual understanding and pedagogical implementation of self-determination instruction. Based on these findings, recommendations are proposed across four domains: parents, teachers, schools, and broader society.

Keywords: Self-determination; Developmental disabilities; Teachers; Students; China

1. Introduction

The development of self-determination is a lifelong evolving process, which begins in childhood and is closely associated with both autonomy and independence. Research has shown the contribution of self-determination to well-being and life satisfaction. For instance, students with a higher level of self-determination tend to have better employment outcomes and higher income in adulthood [1], while also demonstrating greater engagement in academic and social activities, reporting higher quality of life, and exhibiting stronger intrinsic motivation [2]. Furthermore, self-determination plays a crucial role in enhancing social adaptability. This is especially important during transitional periods, such as the shift from school to adulthood.

Self-determination is individual's reflection of one's self-awareness and intrinsic motivation [3]. While self-determination is important for all individuals, it holds particular significance for those with developmental disabilities, and is often regarded as a central goal of special education [4]. Enhancing self-determination has been suggested to improve employment prospects, increase income levels, promote participation in society, and build greater life satisfaction and well-being for individuals with developmental disabilities [1,2,5,6]. Adolescents with intellectual and developmental disabilities are in a critical developmental stage characterized by heightened self-awareness [7], and self-determination in adolescence has been shown to influence adulthood outcomes significantly [8]. Moreover, research has suggested that self-determination tends to remain relatively stable for one to two years following graduation [5]. Moreover, a higher level of self-determination could facilitate classroom inclusion, foster social integration, and promote the inclusiveness and diversity of education. These outcomes not only enhance the development of individuals with disabilities but also reduce burdens on families and society at large [9,10].

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Despite growing recognition of the importance of self-determination for adolescents with intellectual and developmental disabilities, it remains largely overlooked in actual educational practice. This neglect is evident in several ways: educators often overprotect students with disabilities and set low academic expectations; schools and broader societal systems provide limited support for fostering self-determination; and students themselves, due to reduced self-awareness, low self-esteem, and cognitive limitations, meets serious challenges in internalizing the concept of self-determination through interactions with peers, teachers and parents [11]. In the Chinese context, such problems are more prominent: in the United States, self-determination is embedded in transition education policies and services, with tailored curricula designed for students with disabilities [12], while in China the concept of self-determination has yet to take root,, with limited relevant research and interventions as well as fragmented constructs across special education policies, curriculum documents, and teaching practices [13,14]. As a result, many special education teachers in China are unfamiliar with self-determination and lack both in-depth theoretical understanding and practice strategies to implement it [9,14]. Given this context, the increasingly evident importance of self-determination for adolescents with intellectual and developmental disabilities underscores the urgent need to prioritize it as a critical issue in the field of special education, both in current practice and future reforms.

Self-Determination Theory [15] emphasized that the development of self-determination arises from the dynamic interaction between social contextual factors and individual characteristics. In light of the aforementioned barriers to self-determination in practice. It becomes evident that the development of self-determination is highly dependent on supportive interpersonal environments. Therefore, how others—particularly educators and caregivers—perceive and respond to the needs of self-determination of the individuals with developmental disabilities is critical. However, existing studies often adopt a singular perspective, focusing predominantly on student self-reports while neglecting the perspectives of educators. Such a one-sided approach has caused challenges in implementing instruction that supports self-determination for students with developmental disabilities [12]. To address these issues, it is essential to explore self-determination through the views of both internal (students') and external (teachers'). Such a dual-perspective approach facilitates a more comprehensive understanding of the factors influencing self-determination and a clearer direction for pedagogical improvement.

1.1. Self-Determination of Adolescents with Intellectual and Developmental Disabilities

Self-determination refers to an individuals' capacity to make autonomous decisions and set personal goals through self-awareness, self-reflection, and self-regulation [16]. The construct encompasses a range of interrelated positive mental constructs, including choice making, decision-making, problem-solving, goal-setting and attainment, self-advocacy, self-awareness, self-regulation, self-efficacy, self-esteem, autonomy, and the ability to engage in self-assessment, particularly within the framework of individualized education programs [17–20]. Within the field of special education, self-determination has increasingly been recognized not only as a developmental goal but also as an imperative educational outcome [21].

Existing literature consistently demonstrates that adolescents with developmental disabilities exhibit significantly lower levels of self-determination compared to their typically developing peers [22,23]. For instance, autistic children in transitional phrases often display limited self-determination skills, partly due to the lack of targeted intervention programs and the insufficient understanding of self-determination among parents and teachers [24]. Similarly, both adolescents and adults with intellectual and developmental disabilities tend to report lower levels of autonomy and overall self-determination compared to the general population [2], while individuals with developmental disabilities experience a marked improvement in self-determination when placed in a more structured and supportive social environment [25], such findings underscore the importance of environmental factor for cultivating self-determination, particularly given the challenges these individuals face in behavioral flexibility and generalization across contexts. Furthermore, research has indicated that students with mild impairments generally demonstrate stronger social adjustment. This may be attributed to better capacity of self-directed behavior based on higher cognitive and expressive language abilities. However, the self-determination skills of mildly disabled students often remain isolated from peer interactions, suggesting a lack of integration into broader social relationships [26].

The self-determination of adolescents with intellectual and developmental disabilities is shaped by multiple interrelated factors, including educators (teachers and parents), schools, students themselves, and the broader societal context. Key barriers include limited individual cognitive capacity, insufficient institutional and social support, and suboptimal parenting styles [11]. Studies have shown that many students with disabilities struggle with self-awareness and self-esteem, often experiencing feelings of helplessness and exhibiting patterns of negative attribution [27].

Educators, driven by a protective instinct toward this population, may inadvertently restrict students' autonomy, thereby impeding their self-determination [28]. Additional research indicates that variables such as the severity of disability, placement setting, age, and geographic location significantly influence self-determination outcomes, particularly among adolescents with autism. For example, while age and location have shown effects on certain aspects of self-determination, gender appears to have no direct influence [29]. Moreover, qualitative interviews conducted in South Korea suggest that personal experiences and cultural background also shape adolescents' understanding and expression of self-determination [30]. Taken together, these findings highlight the compounded limitations—both internal and external—that restrict adolescent with intellectual and developmental disabilities from accessing sufficient opportunities to develop and exercise self-determination.

1.2. Teachers' Perception of Self-Determination of Adolescents with Intellectual and Developmental Disabilities

Due to their frequent and sustained contact with students, teachers play a pivotal role in fostering the self-determination of adolescents with intellectual and developmental disabilities. Their perceptions, attitudes, and instructions significantly influence students' development and expression of self-determination. Teachers are also uniquely positioned to observe students' strengths and needs, leading to particularly valuable evaluations.

However, existing literature reveals a significant gap between teachers' recognition of the importance of self-determination and their ability to practically implement supportive instructions for self-determination. This gap is caused by both internal and external constraints, including limited conceptual understanding of self-determination, lack of professional training, and insufficient institutional support [12,31]. Additionally, teachers with different geographical locations and educational backgrounds vary widely in their awareness of self-determination during their instructions, particularly for students with autism. Many educators exhibit only a superficial grasp of self-determination and could hardly report experiences in fostering it pedagogically [31–33]. Compounding this issue, special education teachers often underestimate the developmental potential of students with disability—especially those with more severe impairment or younger ages—and thus view self-determination instruction as impractical without substantial external support [22,31]. These beliefs exacerbate challenges in integrating self-determination instruction into special education settings.

1.3. The Current Study

In recent years, the academic interest in the self-determination of students with disabilities has grown significantly [34], underscoring the need for more in-depth and contextually grounded research. This study aims to examine the self-determination of adolescents with intellectual and developmental disabilities from both student and teacher perspectives. By doing so, the research seeks to broaden the understanding of self-determination within adolescents with disabilities and offer a more holistic view of relevant factors. Additionally, the study emphasizes the importance of amplifying the voices of individuals with intellectual and developmental disabilities and translating theoretical insights into practical educational strategies and classroom implementation [34].

Thus, the study aims to examine the self-determination of adolescents with intellectual and developmental disabilities in China as well as teachers' understanding and instructional practices related to self-determination. The research questions are: (1) What is the current level of self-determination among adolescents with intellectual and developmental disabilities in China from students' and teachers' perspectives? (2) How are students' self-perceptions of their self-determination similar to or different from their teachers' evaluations? (3) What factors influence students' self-assessments and their teachers' evaluation of their self-determination?

2. Materials and Methods

2.1. Procedures

A questionnaire survey was employed to assess students' self-determination levels and identify influencing factors such as school environments, gender, age, and severity of disability. Additionally, teachers' demographic variables—including gender, teaching experience, and subject area—were examined to evaluate how these characteristics affect their perspectives of students' self-determination. Comparative analyses were conducted between student and teacher questionnaire responses to explore discrepancies in elevation and determine contributing factors.

2.2. Participants and Settings

This study investigated self-determination from both student and teacher perspectives, involving two participant groups: adolescents with intellectual and developmental disabilities and their special education teachers. During the questionnaire phase, participants were selected using random sampling. Student's inclusion criterias were as follows: (1) Diagnosed with mild to moderate developmental disability, with sufficient language comprehension and expression abilities to complete the questionnaire independently or with assistance; (2) Aged 11 and above, primarily enrolled in grades 6–9 or vocational education programs; and (3) Identified as having intellectual disabilities or autism as reported by their teachers. Demographic details are provided in Table 1.

G.Power 3.1 was used to conduct a priori power analysis. Through the "Mean difference from constant (one sample case)" analysis, with an effect size of 0.5, α (alpha) set at 0.05, and a test power of 0.95, the required total sample size was 105. The number of student participants in this study was 116, which confirms that the selection of the sample size is reasonable.

A total of 116 valid student questionnaires were collected. The sample was considered representative and met the study's inclusion criteria. Participants were divided into two age groups based on educational stages: students aged 11–15 (36.2%) represented the junior secondary level, while those aged 15–19 (63.8%) were enrolled in vocational education programs. In terms of gender, the sample had a male-to-female ratio of approximately 3:2. Regarding disability types, the majority of students were diagnosed with intellectual disabilities (75%), with autism spectrum disorder comprising a smaller portion (25%). Most participants had moderate disabilities (59.5%), with relatively few cases of severe disabilities.

Table 1. Basic information of students.

Variables	Level	N	Percentage(%)
Region	City B	79	68.1
	City D	37	31.9
Gender	female	44	37.9
	male	72	62.1
Age	≤15	42	36.2
	＞15	74	63.8
Degree of disability	severe	30	25.9
	moderate	69	59.5
	mild	17	14.7
Disability classification	intellectual disability	87	75.0
	autism	29	25.0

Teachers who participated in the study were selected to correspond one-to-one with the students who met the inclusion criteria. A total of 29 special education teachers completed the teacher questionnaire. Their teaching experience ranged from 0 to 40 years, with a relatively balanced distribution between those with fewer than 20 years and those with more than 20 years of experience—indicating a mix of both early career and veteran educators. In terms of gender, 86.2% of the teachers were female and 13.8% were male, reflecting the predominance of women in the special education teaching workforce. Regarding subject areas, the sample included teachers from across a wide range of disciplines, with a significant portion concentrated in vocational education. Demographic details of the teacher participants are presented in Table 2.

Table 2. Basic information of teacher participants.

Variables	Level	N	Percentage(%)
Region	City B	24	82.8
	City D	5	17.2
Gender	female	25	86.2
	male	4	13.8
Teaching Experience	0–10 years	11	37.9
	11–20 years	5	17.2
	21–30 years	10	34.5

	31–40 years	3	10.3
Teaching Subject	Main subjects	10	34.5
	Subordinate subjects	7	24.1
	Vocational education	12	41.4
Education level	Bachelor degree	29	100

2.3. Measures

This study adopted the questionnaire survey method, revised and used both the student form and teacher form of the AIR Self-Determination Scale [35] to measure students' self-evaluation and teachers' evaluation of students' self-determination. It uses a five-point Likert scale ranging from 1 (Never) to 5 (Always), where higher scores indicate greater levels of self-determination.

First, this study translated the content of the scale into Chinese and adapted it according to the specific cultural and educational context of Chinese students with special needs. In the student form, considering that students with intellectual and developmental disabilities may struggle to understand the meaning of questions and options, one-on-one guidance was provided during the questionnaire completion process. The researcher read each question aloud together with the student, then explained the question. For example, regarding the question "I know what I need, what I like, and what I'm good at", the researcher would ask the student "Do you know what you like to do?" and "Do you always know what you like to do?". If the student could answer the questions and reported always knowing what they liked, the option "Always" was selected; if the student could answer but reported not always knowing what they liked, "Almost Always" was chosen; if the student could answer but reported only rarely knowing what they liked, "Sometimes" was selected; otherwise, "Never" or "Almost Never" was selected. In addition, the options (scored from 1 to 5) could also be explained using facial expressions or gestures. In the teacher form, the original scale provided an example for each question to help teachers understand. However, the names used in these examples were those of foreign children. In this study, all such names were replaced with "Li Hua" (a common Chinese name), and "somebody's teachers" was replaced with "I". These adjustments were intended to enhance the sense of engagement for teachers completing the questionnaire. Before the start of the study, the researchers conducted a preliminary survey. It was found that when using the above-mentioned method to conduct the questionnaire survey, the research subjects planned to be selected in this study could understand the questions and answer them. Therefore, in the formal study, the researchers carried out the survey in accordance with the above procedures.

Subsequently, to facilitate direct comparison of differences between the two perspectives of students and teachers, and to avoid duplication in the content of the teacher version, the original teacher scale was modified to align with the four dimensions assessed in the student version, specifically by removing the dimension of "perception of Knowledge and Ability to Perform Self-Determination Behaviors".

Student form of the questionnaire includes four dimensions: "Things I Do", "How I Feel", "What Happens at School", and "What Happens at Home". "Things I Do" mainly measures students' understanding of whether they possess self-determination; "How I Feel" mainly assesses students' awareness of their own self-determination; "What Happens at School" primarily measures students' self-determination in the school environment; and "What Happens at Home" mainly evaluates students' self-determination in the family environment. Each dimension included 6 items, followed by three short-answer questions that invited students to describe their personal goals, efforts made to achieve them, and self-evaluations of goal attainment. The student scale demonstrated strong reliability in this study, with a Cronbach's alpha of 0.926, and a KMO value of 0.800.

Teacher form of the questionnaire scale consists of four dimensions: "Ability to perform self-determination behaviors", "Knowledge of self-determination behaviors", "Opportunity to perform self-determination behaviors at school", and "Opportunity to perform self-determination behaviors at home". "Ability to perform self-determination behaviors" mainly measures teachers' understanding of students' self-determination behavior ability; "Knowledge of self-determination behaviors" primarily assesses teachers' understanding of students' internal feelings; "Opportunity to perform self-determination behaviors at school" mainly evaluates the demonstration of students' self-determination (autonomy, sense of responsibility, and grasp of personal growth goals) from the teachers' perspective; "Opportunity to perform self-determination behaviors at home" mainly measures students' self-determination at home and the support provided by their families in this regard from the teachers' perspective. Each dimension included 6 items, followed by three short-answer questions about their students' goals, progress, and overall development from their professional

perspective. The teacher scale also showed high reliability in this study, with a Cronbach's alpha of 0.948, and a KMO value of 0.850.

2.4. Data Analysis

During the data collection process, the student-version questionnaires and teacher-version questionnaires were distributed in two separate regions. All questionnaires were provided in paper form by the researchers, who administered them one-on-one to each student and offered guidance on completion. As a result, there was no data missing due to system or equipment failures or human errors. However, since the research participants were children with special needs, data missing might have occurred in cases where students had an unclear understanding of certain questions in the questionnaires, leading to ambiguous answers. The data from student-version questionnaires were assumed to be missing at random (MAR) [36], Missing data were handled in data analysis using Multiple Imputation and Full Information Maximum Likelihood as described below.

Based on the data collected during the questionnaire survey phase, this study uses SPSS25.0 for data analysis. The analysis followed four main steps. First, descriptive statistics were used to summarize overall levels of self-determination among adolescents with intellectual and developmental disabilities, as well as mean scores across each dimension, based on both student and teacher perspectives. Second, independent sample *t*-tests and one-way ANOVA were conducted to examine the effects of various demographic variables—such as age, gender, region, degree of disability, and teaching experience—on students' self-reports and teachers' evaluations. Third, comparative analyses were performed to assess differences between the student and teacher questionnaires. Finally, Pearson correlation analyses were used to explore the relationships between corresponding dimensions in the two questionnaires.

3. Theory

Self-determination theory (SDT) is a cognitive approach to cognitive motivation that emerged in the 1980s based on positive psychology. Proposed by American psychologists Deci and Ryan in 1985, this theory posits that human behavior is driven by intrinsic factors rather than being solely influenced by external environmental factors [37]. Wehmeyer's functional theory of self-determination suggests that self-determined individuals possess specific competencies (behavioral autonomy, self-regulation) and attitudes (psychological empowerment, self-actualization) [38,39].

Building on the aforementioned theories of self-determination, this study further explores and examines the awareness, attitudes, and behaviors related to self-determination among individuals with developmental disabilities. Self-determination is universally applicable across all cultures [40], which indicates that the development of self-determination is necessary and important for all groups in all cultural contexts. However, the construction methods, developmental trends, and influencing factors of an individual's self-determination vary across different sociocultural and educational backgrounds [41]. Studies have shown that individuals from Eastern cultures may place greater emphasis on family goals rather than personal goals when exercising self-determination [42]. As a country with a collectivist culture, individuals in China may satisfy their intrinsic psychological needs by demonstrating their self-determination skills rather than asserting their right to self-determination [43]. This further explains, from a theoretical perspective, why students scored higher in the behavioral dimension of self-determination execution but lower in the awareness dimension of self-determination: subtly influenced and shaped by China's collectivist culture, students tend to consider collective interests and environmental factors when making decisions, which, to a certain extent, reduces the intensity of their self-determination.

4. Results

4.1. Descriptive Statistics from Students' Perspective

Descriptive statistical results for the overall self-determination levels and each sub-scale, as reported by students with developmental disabilities, are presented in Table 3. Mean scores were categorized into four levels for interpretation: high (4–4.99), moderately high (3–3.99), moderately low(2–2.99), and low (1–1.99). The average overall score for student-reported self-determination was 3.55, placing it in the moderately high range. However, none of the sub-scale means exceeded 4.00, suggesting that there remains considerable room for improvement in self-determination among this population. Among the four dimensions, "What Happens at School" received the highest average score (M = 3.71), indicating that students perceived more opportunities for self-determination behavior in school settings. Conversely, " Things I Do" received the lowest average score (M = 3.39), reflecting relatively limited self-awareness or confidence in personal goal-setting and decision-making.

Table 3. The level of self-determination from the perspective of students.

Dimension	Mean	Standard Deviation
A: Things I do	3.39	0.25
B: How I feel	3.51	0.29
C: What happens at school	3.71	0.12
D: What happens at home	3.59	0.19
Self-determination	3.55	0.14

4.2. Descriptive Statistics from Teachers' Perspective

Descriptive statistics from the teacher-rated data on students' self-determination levels are presented in Table 4. As with the student scale, mean scores were interpreted using the following categories: high (4.00–4.99), moderately high (3.00–3.99), moderately low (2.00–2.99), and low (1.00–1.99). The average overall score from the teacher perspective was 2.99, placing it at the upper end of the "moderately low" range. None of the subscale means exceeded 4.00, suggesting that teachers perceive students' self-determination ability to be relatively limited, with clear room for further development. Among the four dimensions, "Opportunity to Perform Self-determination Behaviors at School" received the highest score (M = 3.55), indicating that teachers acknowledge a relatively supportive school environment for fostering self-determined actions. In contrast, "Knowledge of Self-Determination Behaviors" had the lowest score (M = 2.56), implying that teachers believe students lack the awareness and conceptual understanding required for independent decision-making. These findings suggest that students may be more responsive to external prompts than intrinsically motivated to act autonomously.

Table 4. The Overall Level of Self-determination and Each Dimension from the Perspective of Teachers.

Dimension	Mean	Standard Deviation
A: Ability to perform self-determination behaviors	2.71	0.97
B: Knowledge of self-determination behaviors	2.56	0.89
C: Opportunity to perform self-determination behaviors at school	3.55	1.01
D: Opportunity to perform self-determination behaviors at home	3.13	0.91
Self-determination	2.99	0.05

4.3. Correlation Analysis

A comparison of students and teachers versions of the questionnaire revealed that students rated themselves significantly higher across all four dimensions and in overall self-determination than did their teachers. This discrepancy suggests that students may have an inflated or less accurate perception of their own self-determination, potentially due to a limited understanding of the questionnaire items or the concept itself. To further examine the relationship between the two perspectives, Pearson correlation analysis was conducted on the corresponding dimensions of the student and teacher scales. Results indicated positive correlations across all four dimensions and the overall evaluation level of self-determination. Notably, the correlation was statistically significant in the dimensions related to students' self-determination behaviors and observable performance. Detailed findings are presented in Table 5.

Table 5. The correlation coefficients between the student version and the teacher version.

Students \ Teachers	Ability to Perform Self-Determination Behaviors	Knowledge of Self-Determination Behaviors	Opportunity to Perform Self-Determination Behaviors at School	Opportunity to Perform Self-Determination Behaviors at Home	Self-Determination
Things I do	0.367 **				
How I feel		0.112			
What happens at school			0.019		
What happens at home				0.027	
Self-determination					0.133

** The correlation is significant at the 0.01 level (two-tailed).

4.4. Influencing Factors

An independent samples *t*-test was conducted on the student version of the questionnaire to assess the influence of various demographic variables on self-reported self-determination. Three factors showed significant effects: regional location emerged as the most influential, followed by disability severity, and then age (Table 6).

First, regional differences were a key factor: students from City B—characterized by a more developed economy and stronger educational infrastructure—scored significantly higher in self-determination than their peers in City D. This suggests that school environment, teacher quality, and peer academic atmosphere collectively influence students' autonomy and decision-making skills. Second, age also had a significant impact. Interestingly, students aged 15 and under reported higher overall self-determination than those older than 15. However, in the "Things I Do" dimension, older students outperformed younger ones. This discrepancy may reflect the protective environments younger students typically experience in school and at home, leading them to perceive greater autonomy than they can demonstrate in practice. Third, the severity of disability significantly affected self-determination outcomes. Students with more severe disabilities consistently reported lower levels of self-determination, indicating that internal factors—such as cognitive functioning and communication abilities—play a substantial role in shaping autonomy.

An independent samples *t*-test was also conducted on the teacher version of the questionnaire to examine how teachers and student demographic variables influenced teachers' evaluations of students' self-determination. Several factors were found to be statistically significant (Table 7).

First, student age had a notable influence. Teachers rated students over 15 significantly higher in self-determination compared to younger students, likely reflecting the belief that older adolescents possess greater cognitive maturity and are more capable of autonomous behavior. Second, disability severity significantly influenced teacher evaluations. Students with severe disabilities received the lowest ratings, consistent with the patterns observed in student self-reports. This suggests a shared perception across groups regarding the limiting effects of severe impairment on self-determination development. Third, teaching experience also showed a significant effect. Multiple comparisons revealed that teachers with 11–20 years of experience gave the highest ratings, followed by those with 21–30 years, 31–40 years, and finally those with 0–10 years. This trend may indicate that novice teacher—lacking extended exposure to students with disabilities—tend to underestimate students' autonomy, while mid-career educators develop more nuanced and supportive perspectives over time. Finally, the teacher's subject area emerged as the most influential factor. Teachers involved in vocational education provided the highest evaluations, followed by those teaching core academic subjects, and then those teaching minor or supplementary subjects. This hierarchy may reflect differences in daily teacher-student interaction intensity and the nature of student participation across subject types. Among all the variables examined, the teachers' subject area exerted the strongest influence on evaluations, followed by student age and disability severity. Teaching experience, while statistically significant, had the smallest effect among the four factors.

Table 6. Independent sample *t*-test and one-way ANOVA-test results of the student scale.

Dimension	Things I Do			How I Feel			What Happens at School			What Happens at Home			Self-Determination		
Level	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***
Region															
City B	3.51 ± 1.05	2.003	0.048	3.63 ± 1.09	1.787	0.077	3.85 ± 1.05	1.995	0.048	3.64 ± 1.13	0.685	0.495	3.66 ± 0.87	1.948	0.054
City D	3.12 ± 0.82			3.25 ± 1.06			3.41 ± 1.18			3.48 ± 1.21			3.32 ± 0.91		
Age															
≤15	3.28 ± 1.08	−0.897	0.372	3.60 ± 1.17	0.779	0.437	4.00 ± 1.03	2.239	0.027	3.77 ± 1.23	1.345	0.181	3.66 ± 0.90	1.102	0.273
>15	3.45 ± 0.95			3.44 ± 1.05			3.53 ± 1.12			3.47 ± 1.09			3.47 ± 0.89		
Degree of Disability															
Severe	2.91 ± 1.01			3.24 ± 1.19			3.60 ± 1.06			3.57 ± 1.13			3.33 ± 0.97		
Moderate	3.53 ± 0.94	/	0.006	3.62 ± 1.09	/	0.284	3.74 ± 1.12	/	0.799	3.64 ± 1.16	/	0.806	3.63 ± 0.87	/	0.293
Mild	3.69 ± 0.79			3.56 ± 0.09			3.80 ± 1.21			3.43 ± 1.21			3.62 ± 0.87		
Gender															
Female	3.34 ± 0.95	−0.375	0.708	3.58 ± 0.93	0.534	0.594	3.78 ± 1.03	0.551	0.583	3.82 ± 1.01	1.72	0.088	3.63 ± 0.80	0.777	0.439
Male	3.42 ± 1.03			3.47 ± 1.19			3.67 ± 1.16			3.45 ± 1.21			3.50 ± 0.98		
Degree of Influence	2 < 1 < 3			2 < 3 < 1			3 < 2 < 1			3 < 1 < 2			2 < 3 < 1		

1 = Region, 2 = Age, 3 = Degree of Disability.

Table 7. Independent sample *t*-test and one-way ANOVA-test results of the teacher scale.

Dimension	Ability to Perform Self-Determination Behaviors			Knowledge of Self-Determination Behaviors			Opportunity to Perform Self-Determination Behaviors at School			Opportunity to Perform Self-Determination Behaviors at Home			Self-Determination		
Level	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***	**M ± SD**	***t***	***p***
Student' Age															
≤15	2.53 ± 0.54	−1.998	0.048	2.43 ± 0.67	−1.413	0.16	3.33 ± 0.72	−2.134	0.035	2.87 ± 0.48	−2.887	0.005	2.79 ± 0.40	−2.704	0.008
>15	2.83 ± 0.87			2.64 ± 0.83			3.69 ± 0.95			3.28 ± 0.86			3.11 ± 0.71		
Degree of Disability															
Severe	2.33 ± 0.61			2.23 ± 0.76			3.47 ± 0.92			3.09 ± 0.88			2.78 ± 0.61		
Moderate	2.76 ± 0.81	/	0.005	2.66 ± 0.75	/	0.023	3.60 ± 0.81	/	0.758	3.20 ± 0.74	/	0.321	3.08 ± 0.64	/	0.086
Mild	2.87 ± 0.69			2.72 ± 0.73			3.49 ± 1.14			2.89 ± 0.67			2.97 ± 0.56		
Teaching Experience															

0–10	2.51 ± 0.79	/	0.005	2.36 ± 0.80	/	0.01	3.55 ± 1.04	/	0.387	3.02 ± 0.81	/	0.094	2.86 ± 0.67	/	0.023
11–20	3.19 ± 0.77			2.92 ± 0.79			3.83 ± 0.65			3.54 ± 0.75			3.37 ± 0.63		
21–30	2.92 ± 0.66			2.81 ± 0.57			3.34 ± 0.53			3.17 ± 0.62			3.06 ± 0.44		
31–40	2.79 ± 0.40			2.73 ± 0.53			3.60 ± 0.65			3.02 ± 0.70			3.04 ± 0.48		
Teaching Subject																
Main subjects	2.54 ± 0.75	/	0.002	2.37 ± 0.80	/	0.005	3.71 ± 0.84	/	0	3.10 ± 0.72	/	0.003	2.93 ± 0.58	/	0
Subordinate subjects	2.51 ± 0.52			2.41 ± 0.67			2.87 ± 0.66			2.74 ± 0.56			2.64 ± 0.45		
Vocational education	3.05 ± 0.84			2.87 ± 0.71			3.78 ± 0.87			3.40 ± 0.85			3.27 ± 0.66		
Degree of Influence	1 < 3 < 2 < 4			1 < 3 < 2 < 4			4< 2< 3< 1			3< 4< 2< 1			3 < 2< 1< 4		
Region																
City B	2.81 ± 0.76	1.818	0.072	2.64 ± 0.74	1.636	0.105	3.49 ± 0.81	−1.172	0.244	3.15 ± 0.74	0.562	0.575	3.02 ± 0.61	0.813	0.418
City D	2.52 ± 0.79			2.39 ± 0.83			3.69 ± 1.03			3.07 ± 0.83			2.92 ± 0.67		
Students' Gender																
Female	2.70 ± 0.83	−0.087	0.931	2.49 ± 0.90	−0.791	0.431	3.56 ± 0.84	0.106	0.915	3.12 ± 0.653.13 ± 0.84	−0.098	0.922	2.97 ± 0.63	−0.261	0.795
Male	2.72 ± 0.75			2.60 ± 0.69			3.55 ± 0.92						3.00 ± 0.63		
Teachers' Gender																
Female	2.67 ± 0.77	−1.548	0.124	2.51 ± 0.78	−1.548	0.124	3.56 ± 0.88	0.339	0.735	3.10 ± 0.75	−1.03	0.305	2.96 ± 0.61	−1.266	0.208
Male	3.03 ± 0.77			2.95 ± 0.63			3.47 ± 0.96			3.33 ± 0.89			3.20 ± 0.74		

1= Student' Age, 2 = Degree of Disability, 3 = Teaching Experience, 4 = Teaching Subject.

5. Discussion

This current study explored the self-determination of adolescents with intellectual and developmental disabilities and compared the results of students' self-evaluations and teachers' evaluations. The results indicated that students' self-evaluations of their own self-determination were at a moderately high level, while teachers' evaluations of students' self-determination were at a moderately low level. Meanwhile, demographic variables that significantly influenced both students' and teachers' evaluations were identified. These findings can provide practical pathways for attaching importance to and improving the self-determination of adolescents with intellectual and developmental disabilities.

5.1. Adolescents with Intellectual and Developmental Disabilities Rate Their Self-Determination Moderately High

From the perspective of adolescents with intellectual and developmental disabilities, they tend to rate their own self-determination moderately high, especially when compared with the evaluations given by teachers. This finding is consistent with the conclusions of existing research [44]. Specifically, students with intellectual and developmental disabilities consistently demonstrate higher scores in self-assessment of self-determination, which indicates that the level of self-determination they perceive themselves to have is higher than what teachers judge. Notably, this discrepancy is not associated with individual factors such as age or the severity of intellectual disability; instead, it may stem from fundamental differences in the criteria used by the two groups (students and teachers) to evaluate self-determination skills [45].

5.2. Teachers Rate the Self-Determination of Adolescents with Intellectual and Developmental Disabilities Moderately Low

From the perspective of teachers, the self-determination of adolescents with intellectual and developmental disabilities is at a moderate or below-moderate level. This aligns with the research findings of foreign scholar Wehmeyer in 2020, through investigative research, he found that the autonomy of youth and adults with intellectual and developmental disabilities is significantly lower than that of neurotypical individuals, and their level of self-determination is below average [2]. Similarly, parents—who, like teachers, serve as educators for children—reported in a survey on the self-determination skills of autistic adolescents that these adolescents had lower self-determination and fewer opportunities to engage in self-determined behaviors [46]. This indicates that while adolescents with intellectual and developmental disabilities can express their needs, recognize their interests and strengths to a certain extent, they are not proficient in more complex skills such as goal-setting, plan formulation, problem-solving, and goal adjustment.

5.3. Adolescents with Intellectual and Developmental Disabilities Have Significantly Higher Self-Evaluation of Self-Determination than Teachers

We found that teachers rated the self-determination of students with developmental disabilities at a moderately low level, and these teacher ratings were significantly lower than the students' self-ratings, indicating that from teachers' perspective, students with developmental disabilities have limited self-determination capabilities. It's inline with existing studies [22,44]. Mumbardó-Adam et al. also compared the self-assessments and proxy assessments of self-determination among young people with intellectual disabilities, which revealed a significant discrepancy between the two, with teachers' ratings being significantly lower than students' self-ratings [45]. Shogren et al. frame this not as an invalidation of the self-report, but as a difference in perspective that must be understood [44]. They discuss the concepts of frame of reference and the importance of the individual's own perception as a key outcome in itself. They compare themselves to peers with similar disabilities, not neurotypical peers.

The study found that both the student-rated and teacher-rated scales yielded the highest scores in the dimension of "school performance". This indicates that both students and teachers believe that self-determination can be exerted to the greatest extent in the school environment compared to other settings, and indirectly proves that schools provide a supportive environment for fostering and enhancing students' self-determination. This result is consistent with existing research findings: the development of self-determination requires a favorable, supportive environment [45], and opportunities provided by the context for exercising self-determination skills are conducive to the development of individuals' self-determination [23,47,48]. With more opportunities for autonomous action and guidance, students become more proactive in taking independent actions, thereby enhancing their autonomy and self-determination [45]. Compared to other environments (family or social settings), the school environment can provide students with more professional guidance and opportunities related to self-determination, thanks to its more professional and abundant

resources (such as qualified teachers). Consequently, both students and their teachers have greater confidence in the self-determination demonstrated by students at school, leading to higher scores in this dimension.

Meanwhile, the environment can sometimes have an adverse impact on the development of an individual's self-determination. On one hand, due to their unique characteristics, adolescents with intellectual disabilities in daily life are more likely to accept guidance from others; alternatively, out of a desire to protect them, others may restrict them to highly confined environments. This overprotective setting limits the development of their self-determination [49–51]. On the other hand, introducing complex and unfamiliar concepts such as "self-determination" without basic support may cause confusion and excessive stress among teachers, ultimately lowering their expectations for students with disabilities [12]. It is evident that improving the self-determination of individuals with developmental disabilities requires the creation of a favorable, supportive environment. For instance, one study showed that the level of self-determination among students with developmental disabilities in integrated environments is 2.2 times higher than that in segregated environments. This is mainly because normalized social interactions can effectively promote an individual's self-regulation abilities [52].

5.4. Influencing Factors of Self-Evaluation and Teacher's Evaluation of Self-Determination of Adolescents with Intellectual and Developmental Disabilities

In terms of students' self-evaluations, three factors exert a significant influence: geographic location, student age, and the severity of disabilities. The study found that students in regions with higher economic development levels reported higher self-determination. This indicates that external factors such as the school environment, teacher quality, and peer learning atmosphere collectively impact students' self-determination. Existing research has also confirmed the importance of environmental factors in the development of self-determination. Mumbardó-Adam et al. pointed out that compared to relatively stable internal factors (e.g., intelligence scores), the developmental opportunities that adolescents with intellectual disabilities obtain from their environment have a stronger correlation with their level of self-determination [23]. This further confirms that creating favorable external conditions for adolescents with intellectual and developmental disabilities is crucial to the development of their self-determination, and also implies that self-determination can be improved through instructional interventions [53].

We found that younger students report higher self-ratings of their self-determination, while teachers gave lower ratings of self-determination for younger students. The results of teacher ratings are consistent with existing research findings [45]. During adolescence, individuals' self-determination levels continuously improve [4]; moreover, in the process of growing up, they can gradually clarify their personal goals and life plans through vocational education courses, which contribute to the development of their self-determination to a certain extent [54]. Therefore, the teacher ratings in this study align with objective laws and indirectly reflect that younger students with developmental disabilities may have inaccurate self-perception or fail to understand the meaning of "self-determination", leading to the opposite trend observed in the results.

The severity of students' disabilities is also a key influencing factor of their self-determination: the more severe the disability, the weaker the self-determination. This result is consistent with previous research [55] and shows consistency between student self-reports and teacher ratings, indicating that internal factors such as cognitive and communication abilities play an important role in shaping autonomy. Similarly, other studies have confirmed that when comparing individuals with intellectual disabilities to typically developing individuals, those with intellectual disabilities and higher support needs exhibit lower levels of self-determination [56], which further proves that the severity of disability is a critical factor influencing self-determination. From the teachers' perspective, when teachers believe in students' abilities, they provide more opportunities for students to engage in autonomous actions [45]. In turn, observing students taking more autonomous actions further improves teachers' perceptions and evaluations of students' self-determination [57]. This cyclical pathway is based on students' abilities, and the severity of a student's disability is precisely rooted in their ability level.

The study found that teachers' years of teaching experience significantly influence their evaluations of students' self-determination. For teachers with more than 10 years of teaching experience, greater teaching experience correlates with higher evaluations of students' self-determination. Existing research also shows that teachers with longer teaching experience (≥10 years) have a significantly deeper understanding of the core concepts of self-determination and a higher mastery of various teaching strategies [58]. However, teachers with less than 10 years of experience gave higher evaluations than those with 31–40 years of experience. The study revealed that novice teachers, having just entered the profession, are less constrained by traditional norms. As a result, they are more willing to attempt high-risk self-

determination training (e.g., student-led IEP meetings) for students with emotional and behavioral disorders [59], and thus hold higher expectations and evaluations of students with disabilities.

In addition, the teachers who teach vocational education reported higher evaluations of students' self-determination. Teachers of vocational education work in the vocational education phase; the students they teach are older and have less severe disabilities in China. Combining the above research results, it can be concluded that the students taught by these teachers have stronger self-determination. Furthermore, the vocational education content received by students in the vocational education phase enables them to learn knowledge related to self-determination, form certain plans and goals for their lives, and consequently achieve a certain degree of growth in their self-determination [54].

6. Conclusions

6.1. Conclusions

Research has found that: (1) From the perspective of adolescents with intellectual and developmental disabilities, the self-determination level is at the middle or higher-middle level. (2) From the perspective of teachers, the self-determination level is at the middle or lower-middle level. (3) Teachers' evaluations are significantly lower than students' self-evaluations. (4) The region, age, and the severity of their disabilities have a significant impact on students' self-evaluations. (5) The students' age, the severity of students' disabilities, teachers' years of teaching experience, and the subjects they teach have a significant impact on teachers' evaluation. (6) In addition, teachers' understanding and practice of teaching related to self-determination have certain limitations and need to be improved in multiple aspects.

6.2. Practical Implication

Firstly, strengthen parents' participation in the development of students' self-determination. Lectures and workshops can be regularly held in communities or schools, inviting frontline teachers, university experts, and outstanding parents to provide guidance [26]. Secondly, enhance teachers' professional training on self-determination, innovative teaching methods, and explore thematic socialized classroom activities [60]. Thirdly, enrich school resources and secure broader social attention and resources, which is conducive to students practicing their self-determination in social environments [26]. In addition, create a positive and inclusive social atmosphere to help students with disabilities apply self-determination skills to live smoothly in social environments [61].

6.3. Limitations and Further Directions

There were several limitations in the study. First, due to the complexity and specificity of the target population, the sample size was relatively small, which may have limited the comprehensiveness and generalization of the data collected. Future research should expand the sample size and diversify research content and perspectives. For example, comparative studies could examine how self-determination manifests differently in adolescents with intellectual and developmental disabilities versus those with other types of disabilities, in order to identify unique characteristics and inform the development of effective instructional strategies and curriculum models. Second, it's a cross-sectional study, and it's hard to explore the mechanism of action of influencing factors. Longitudinal research could also be conducted to track how self-determination is expressed across school, family, and community contexts, and how it contributes to students' social adaptation and employment outcomes.

Statement of the Use of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this manuscript, the authors did not use any AI text-generation tools for drafting. The core research content, data analysis, conclusion derivation, and original draft preparation of this manuscript were all independently completed by the authors. In the final manuscript polishing stage, the authors used [DEEPSEEK] in order to correct grammatical errors and optimizing the expression of certain sentence structures. The inherent structured language, standard terminology within the field, and objective statement style in academic paper writing may overlap with the characteristics of AI-generated text, which may be the reason for the high similarity prompt from the detection system. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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Author Contributions

Conceptualization, X.Z. and W.F.; Methodology, X.Z.; Software, X.Z.; Validation, X.Z.; Formal Analysis, X.Z.; Investigation, X.Z.; Resources, W.F.; Data Curation, X.Z.; Writing—Original Draft Preparation, X.Z.; Writing—Review & Editing, W.F.; Visualization, X.Z., F.L.; Supervision, W.F.; Project Administration, W.F.; Funding Acquisition, X.Z.

Ethics Statement

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of the Beijing Normal University (protocol code BNU202403100015, date of approval:18 May 2024).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data are available on reasonable request and on signature of a confidentiality agreement from corresponding author.

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Declaration of Competing Interest

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.

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