

Transition Services for High School Students With Intellectual Disabilities in Taiwan

Abstract

This research examined the conditions and factors affecting transition services for students with intellectual disabilities (ID) in Taiwan using the Transition-Service Planning Assessment Scales for Students with Intellectual Disabilities (TPAS). The results indicated that the need for transition services to post secondary school ranked highest, whereas transitions related to medical services ranked lowest. The severity of the students' ID and grade level correlated most significantly with the need for transition services. Further, students with mild ID and those in families with higher socioeconomic status received better transition services. Recommendations are made for school policy, transition practices, and further research.

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The concept and practice of transition service for individuals with intellectual disabilities (ID) has been examined and significant progress has been made (Flexer, Baer, Luft, & Simmons, 2007; Harrington, 2004; Sitlington, & Clark, 2005; Steere, Rose, & Cavauiolo, 2006; Test, Aspel, & Everson, 2006; Wehman, 2006). However, studies of transition services for high-school students have been more limited and have mainly been carried out in western societies (Baer, et al. 2003; Levine, Marder, & Wagner, 2004; Wagner, Newman, & Cameto, 2004; Wagner, Newman, Cameto, Garza, & Levine, 2005; Wagner, Newman, Cameto, Levine, & Garza, 2006). Significant predictors of the receipt of transition services are generally reported to be severity of disability, age, gender, and household income (Wagner et al. 2005; Wagner, et al. 2006).

Historically, the Chinese people have been directed by the teachings of Confucius to provide all people with an education based on the individual's own intellect, discipline, and desire, and without regard to his/her position in life or social status (Chen, Sietz,

& Cheng, 1991; Kang, Lovett, & Haring, 2002). People have regarded education with deep respect in Taiwan; however, this respect has not always carried over to the education of high school students with disabilities (Kang et al., 2002). High expectations and great emphasis on the student's academic performance usually result in negative attitudes toward youth with disabilities because of their potentially poor academic performance, and this has affected the types of transitions that occur (Chang, 1992; Chen & Zhang, 2003). For example, transition plans for students with disabilities focus on employment rather than post-secondary education (Lin, 2002; 2005).

Transition services for youth with disabilities have improved dramatically in Taiwan in recent years. According to the educational statistics reported by the Ministry of Education (2005), by the end of 2005 there were 6,361 students with disabilities in 608 classes of 24 special schools with 1,709 teachers and 760 faculty members. Due to the increasing number of students with disabilities graduating from high school, and recognition of the benefits to students and their families, transition services have recently become an important issue in service provision and educational programming for individuals with disabilities, including those with ID. Transition services are now mandated for all youth with disabilities; and more transition services programs continue to be developed. The concept of secondary transition has evolved beyond transition to employment to include transitions to community-based recreation and leisure opportunities, independent living, and post-secondary education.

The Special Education Amendment Act (1998) specified that individualized education programs must be developed for each student with a disability, and that parents be invited to participate. The Enforcement Rules to the Act of Special

Education (2003) in Article 18 Subparagraph 10 regulated that an individualized education program should cover assistance in transitions from preschool to elementary school, from elementary school to junior high school, from junior high school to senior (vocational) high school, and from senior (vocational) high school to college/university. Transition services include counseling concerning post-secondary education, daily life and employment, as well as psychological counseling, social welfare and other related services (Ministry of Education, 2003).

Chapter IV Employment Promotion of the Protection Act emphasized that governments should, according to the category and severity of the disabilities, provide individualized barrier-free vocational training and employment services (i.e., vocational rehabilitation) for persons with disabilities. Article 30 of this act states that authorities in charge of labor should provide support and individualized employment services to people with disabilities that have the capability to work but are still not able to enter into the competitive employment market, and provide sheltered employment services to those who are willing to work but do not have sufficient capability to do their jobs.

Both the conceptualization and development of transition services has been more complicated than expected. A great deal of research shows that external and internal factors are related to transition services (e.g., Chen, 1998; Chen, Wang, & Lin, 2000; Cheu & Shue, 1998; Lin 1998; 2002). Kohler's (1996) Taxonomy for Transition Programming has provided a framework that shows these relationships.

This study focuses on identifying what specific factors are associated with the need for transition service related to education, community living, employment, psychological issues, social

welfare issues, medical services, and physical needs, as well as to overall need for transition services. Further, it seeks to investigate differences in transition services in relation to factors such as age, grade, level of severity, parental educational level, and type of school, and whether these variables predict the outcome of transition services.

Method

Sample

Stratified sampling was done based on the gender, region, severity of disability, and disability category of the population of youth with disabilities in Taiwan. An interview survey of students with ID was sponsored by the Division of Special Education at the Ministry of Education in Taiwan. Participants were students with disabilities and their teachers. An invitation letter describing the survey was sent by the Department of Special Education at National Changhua University to principals and directors of special education in high schools. Following this, a meeting was held with high school teachers and students with ID who met the sample criteria to ask them if they would like to participate in the study. After obtaining informed consent, students with ID were then enrolled in the study and interviewing took place at their schools. A total of 692 high-school students with ID in grades 10 to 12 across the state make up the study sample.

Instrumentation

The survey instrument used in this study was the Transition-Service Planning Assessment Scales for Students with Intellectual Disabilities (TPAS), which includes two separate but related scales: Transition-Service Needs Scale (completed by students with ID), and Transition-Service Supply Scale (completed by teachers).

The scales were drawn from a pool of data collection tools that have evolved over many years of systematic transition research adapted to the Taiwanese situation. The TPAS scales contain empirically derived indicators of multidimensional outcomes, and have been revised to measure the major transitional post-school outcome domains. The TPAS consists of 59 questions across seven subscales, all of which have good internal consistency: (1) guidance and planning for educational transition ($\alpha=.89$); (2) guidance and planning for living transition ($\alpha=.85$); (3) guidance and planning for employment transition ($\alpha=.88$); (4) psychological guidance and planning for transition ($\alpha=.83$); (5) guidance and planning for social welfare transition ($\alpha=.96$); (6) guidance and planning for medical transition ($\alpha=.78$); (7) guidance and planning for physical needs transition ($\alpha=.93$). The overall internal consistency of the TPAS is high ($\alpha=.92$), and test-retest reliability estimates range from .52 to .56. For the scale as whole, a four-point Likert scale was used. With the Transition-Service Needs Scale, the higher the score the higher the needs for students with ID (see Appendix).

The severity of the ID is based on results of the Chinese-version of the Wechsler Intelligence Scale for Children-III (WISC-III) (Chinese Behavioral Science Corporation, 1997), while adaptive behaviour is based on results on the Chinese Adaptive Behavior Scale (Hsu, 1996).

Analyses

The internal factors examined in relation to transition services include the student's gender, severity of ID, age, and grade level. The three areas of external factors considered include: family (i.e., family socioeconomic status, parental educational level, vocational type), school (i.e., type of school, location), and community (area of

households, vocational training attended, ITP meeting held, interagency cooperation, transition services curriculum, and development of ITP) characteristics.

The statistical analysis was completed using the SPSS 8.01 package. ANOVA test

of independence for unordered categorical variables (two-sided tests) were conducted to test the differences among internal and external variables. Multiple linear regressions were used to identify factors associated with transition services among the seven subscales and the total score (with a dummy coding for gender, vocational type, type of school, location of school and area of households variables). A series of stepwise selection procedures (with $\alpha=.05$) were applied. The dependent variables were the seven transition service indices on the TPAS (i.e., education, community living, employment, psychological issues, social welfare issues, medical services, and physical needs) as well as the total scale score.

Results

Sample Characteristics

Table 1 shows the characteristics of the study sample. The average age was 16.45 years ($SD=2.91$), and 43.1% were female and 56.9% were male; there was no significant difference in age by gender. Most students had mild (42.1%) to moderate (43.6%) ID. More students lived in the middle part of Taiwan (49.9%), though similar proportions of students attended general/vocational high schools (50.1%) or special education programs within the general/vocational high school (49.9%). In terms of the social economic status of the sample, approximately 36.6% of the families were low-income, while 59.7% of the youth's family had medium income and few were well-off (3.8%). Approximately 31.3% of the parents had a high-school diploma or bachelor degree, and 54.8% had graduated from primary or middle schools. About 40.2 % of the youths' parents were un-skilled or semi-skilled workers, while 12.9% did semi-professional or professional work.

Table 1. Characteristics of the Sample

Categories	(N=692)	
	Freq.	%
Gender		
Male	394	56.9
Female	298	43.1
Grade		
Grade 10	210	30.3
Grade 11	256	37.0
Grade 12	226	32.7
Household Locality		
Northern Part of Taiwan	272	39.3
Middle Part of Taiwan	345	49.9
Southern Part of Taiwan	75	10.8
Severity of ID		
Mild	291	42.1
Moderate	302	43.6
Severe	84	12.1
Profound	15	2.2
Type of School		
General/Voc High School	347	50.1
Special School	345	49.9
Family Economical Condition		
Low-income	253	36.6
Medium-income	413	59.7
Well-off	26	3.8
Parental Educational Status		
Non-literacy	96	13.9
Primary-school graduated	217	31.4
Middle-school graduated	162	23.4
Secondary-school graduated	168	24.3
College graduated and above	49	7.0
Parental Vocational Type		
Un-skilled or Semi-skilled workers	278	40.2
Skilled workers	197	28.5
Semi-professional or Professional	89	12.9
Other (homemaker or unemployment)	128	18.5

Table 2. *Transition Services Received*

Items		(N=692)	
		Frequency	%
Curriculum development based on student's needs	Yes	656	94.8
	No	36	5.2
Delivery of education based on the IEP or ITP	Yes	665	96.1
	No	27	3.9
Parents being invited and attending the student's IEP or ITP meeting	Yes	634	91.6
	No	58	8.4
Potential employers or caregivers of adult services being invited and attending the student's IEP or ITP meeting	Yes	525	75.9
	No	167	24.1
IEP or ITP based on the student's preference and interest	Yes	640	92.5
	No	52	7.5
Coordination service being considered and offered	Yes	522	75.4
	No	170	24.6

Table 3. *Transition Services Received*

	Gender	Age	Grade	Level of severity	SES	Ed. Level	Father Voc	Mother Voc	Area	School	Needs Scale	Supply Scale
Gender	—											
Age	.036	—										
Grade	.004	-.582**	—									
Level of sev	-.008	-.103**	.047	—								
SES	-.003	-.016	-.064	.071	—							
Ed. Level	-.023	.009	-.043	.101**	.342**	—						
FatherVoc	.057	.117**	-.113**	-.041	-.013	.067	—					
Mother Voc	-.032	.064	-.079*	.030	-.026	.095*	.270**	—				
Area	.001	-.006	.055	.012	.007	.059	-.041	-.107**	—			
School	-.067	-.160--	.033	.622**	.090*	.061	-.020	.004	-.039	—		
Needs Scale	.083*	.039	-.093*	.057	-.004	.064	.074	.036	.043	-.005	—	
Supply Scale	.006	.024	-.027	.125**	.017	.064	-.007	-.020	.075*	.014	.473**	—

* $p < .05$ ** $p < .01$

Transition Services Status

As shown in Table 2, most of the students (94.8%) had individualized curriculum developed based on their needs, and 96.1% were taught based on the individual education program (IEP) and individual transition plan (ITP). While 91.6% of parents had attended the IEP/ITP meeting, 75.9% of the potential employers or caregivers of adult services had attended IEP/ITP meetings. Nearly all (92.5%) of the

IEP/ITPs developed based on the student's preference and interest, and most (75.4%) educational and transition services, had been coordinated by an interdisciplinary team.

Table 3 summarizes the matrix of correlations of these variables with one another, as well as with the TPAS subscales on needs (i.e., Transition Services Needs Scale) and service utilization (Transition Services Supply Scale).

Table 4. Results of Stepwise Multiple Regressions Predicting Need for Transition Services

Model	Variables	(R)	R ²	Beta	F of the R
Total Scores of the Transition Service Needs Scale					
	Level of Severity	.28	.052	.228	37.932***
	Level of Grade	.27	.073	.144	27.049***
	Parental Ed Level	.28	.081	.090	20.164***
Guidance for Education					
	Level of Grade	.148	.022	.148	15.432***
Guidance for Living					
	Level of Severity	.254	.065	.254	47.776***
	Type of School	.268	.072	.106	26.590***
Guidance for Employment					
	Level of Severity	.145	.021	.145	14.840***
	Level of Grade	.189	.036	.122	12.779***
	Parental Ed Level	.210	.044	.092	10.578***
Psychological guidance					
	Level of Severity	.177	.031	.177	22.295***
	Level of Grade	.211	.045	.115	16.050***
Guidance for Social Welfare					
	Level of Severity	.121	.015	.121	10.179***
	Level of Grade	.169	.029	.119	10.129***
	Parental Ed Level	.192	.037	.091	8.739***
Guidance for Medical Services					
	Type of School	.139	.019	.139	13.587***
	Student's Age	.172	.030	.103	10.515***
	Parental Ed Level	.189	.036	.079	8.529***
Guidance for Physical Needs					
	Level of Severity	.182	.033	.182	23.571***
	Level of Grade	.197	.039	.077	13.976***

*** $p < .001$

Table 4 shows the results of stepwise multiple regression using related variables to predict the *need* for transition services in each of the seven areas. These results show that the students' level of ID, grade, and parent's level of education were the factors most highly associated with need for transition services. The student's level of ID severity was in fact the best predictor for most of the transition service indices, with the exception of medical and education services. The student's grade was also highly associated to need for all types of transition services except those related to medical and community living transitions.

Finally, parent's level of education played a role in need for transition services related to employment, social welfare, and medical services, as well as to the overall need for transition services.

Table 5, [see page 46], shows the results of stepwise multiple regression using related variables to predict *actual receipt* of transition services. Again, the student's level of ID severity, grade, and parent's level of education played a role in predicting receipt of almost all transition services (except education, medical, and social welfare). The student's grade was also highly associated to receipt of transition services related to education and psychosocial guidance. The type of school played a role in the receipt of transition services for community living, psychosocial guidance,

social welfare, and medical services, while parent's socioeconomic status was important to the prediction of services related to community living.

As the students' level of ID severity was the best predictor for most of the types of transition services, ANOVA tests were conducted to examine the difference in transition needs among all levels of ID [Table 6 on page 47]. The results indicated that students with mild ID tended to need more transition services for community living, employment, psychological guidance, social welfare, and medical and physical services.

Discussion

The data showed that most of the parents of youth with disabilities were invited to and attended the ITP meeting, most schools had developed ITPs and offered quality transition curriculum for youth with ID, and that the schools had fair interagency cooperation. The results also indicated that the needs of youth with ID for services related to transition to post-secondary school ranked the highest, whereas those related to medical services ranked the lowest. The students' severity of disabilities and level of grade are highly related with most of their transition needs and receipt of transition services. The results suggest that comprehensive guidance to help identify available generic community services and support systems based on the needs and interests of students with ID are desirable. It is also important that both students with ID and their parents attend ITP meetings to ensure that ITPs are a match to the needs and dreams of students with ID. In particular, it is important to identify post-secondary education and training support alternatives for students with mild ID.

The results of this study (i.e., finding a high need for transition services) are consistent with previous work (Chen & Zhang, 2003; Lin, 2005). However, this study found that a higher proportion of those services were actually delivered. It should be noted that the data have shown

Table 5. Results of Stepwise Multiple Regressions Predicting Receipt of Transition Services

Model	Variables	(R)	R ²	Beta	F of the R
Total Score of the Transition Service Supply Scale					
	Level of Severity	.22	.050	.224	36.360***
	Student's Age	.24	.057	.082	20.697***
Guidance for Education					
	Level of Grade	.094	.009	.094	6.117*
Guidance for Living					
	Level of Severity	.360	.130	.360	102.881***
	Type of School	.370	.137	.109	54.678***
	Parental SES	.378	.143	-.075	38.140***
Guidance for Employment					
	Level of Severity	.148	.022	.148	15.365***
	Student's Age	.169	.029	.083	10.139***
Psychological guidance					
	Level of Severity	.175	.031	.175	21.727***
	Type of School	.194	.038	.107	13.456***
	Level of Grade	.209	.044	.079	10.439***
Guidance for Social Welfare					
	Type of School	.124	.015	.124	10.792***
	Student's Age	.145	.021	.077	7.447***
Guidance for Medical Services					
	Type of School	.148	.022	-.148	15.392***
Guidance for Physical Needs					
	Level of severity	.154	.024	.154	16.799***

* $p < .05$, ** $p < .01$, *** $p < .001$

some encouraging trends in the transition services for students with ID who have increased needs for postsecondary education. This trend is consistent with the findings of Levine et al. (2004) and Wagner et al. (2004) on the increased needs of postsecondary education for youth with disabilities in the United States.

Stepwise multiple regressions revealed that students with mild ID or with parents with higher socioeconomic status tended to receive more transition services than those with moderate or severe ID, or from households with lower socioeconomic status. Youths with ID that were in higher grades, had more severe ID, and had lower socio-economic status tended to have greater need for all transition

Table 6. Transition Needs by Level of ID Severity

Needs of Transition		Sum of Squares	df	Mean Square	F	p	Post-Hoc Tests
Guidance for Living	Between	1004.443	3	334.814	22.587	0.000***	Mild>Moderate Mild>Severe Mild> Profound Moderate>Severe
	Within	10198.440	688	14.823			
	Total	11202.883	691				
Employment Guidance	Between	371.615	3	123.872	6.377	0.000***	Mild>Moderate Mild>Severe Mild> Profound
	Within	13345.036	687	19.425			
	Total	13716.651	690				
Psychological Guidance	Between	410.763	3	136.921	8.084	0.000***	Mild>Moderate
	Within	11652.432	688	16.937			
	Total	12063.195	691				
Welfare Guidance	Between	303.229	3	101.076	5.912	0.001*	Mild>Severe
	Within	11763.239	688	17.098			
	Total	12066.468	691				
Medical Guidance	Between	249.765	3	83.255	4.126	0.006**	Mild>Moderate
	Within	13884.096	688	20.180			
	Total	14133.861	691				
Physical Guidance	Between	396.123	3	132.041	7.834	0.000***	Mild>Moderate Mild>Severe
	Within	11595.594	688	16.854			
	Total	11991.717	691				
Total Needs of Guidance	Between	14432.931	3	4810.977	13.597	0.000***	Mild>Moderate Mild>Severe Mild> Profound
	Within	243072.68	687	353.818			
	Total	257505.62	690				

* $p < .05$. ** $p < .01$. *** $p < .001$.

services. In terms of daily living guidance, psychological guidance, medical guidance, and physical guidance, students with ID that studied in special schools tended to have higher needs than those that studied in general high schools. Students with mild ID and with parents that had higher social economic status were more likely to request educational and vocational guidance for advanced study, whereas those with more severe ID and with parents that had lower social economic status were more likely to request transition services related to psychological, social-welfare and medical services. Students whose parents have a lower social economic status tended to request school-to-work vocational programs.

Cultural issues may affect how parents and students with ID view transition needs. In Taiwan, persons with higher socioeconomic status expect to receive better services and expect their children to have better educational outcomes. Consequently, parents with lower social economic status might value living stability and job security more heavily than those with higher socioeconomic status, and encourage their children to pursue employment upon completion of school (rather than post-secondary education). This is consistent with other findings (Kang et al., 2002).

This study indicated that guidance and planning for education, living, employment, social welfare, medical

services, physical needs, and psychological needs are fundamental to students with ID. For all students with ID, it is important to develop suitable vocational and psychological guidance programs to help them to understand themselves in terms of vocational interests, psychological development and life issues. A systematic and individual approach is needed for a smoother transition experience. Therefore, determining the 'what', 'when', 'where' and 'how' of transition services that are needed for the student to graduate successfully, enter the workforce/university/college, and live independently in the community should be done carefully. This is consistent with studies conducted in Western society (Levine et al., 2004; Wagner, et al., 2004).

Several limitations of the present study need to be recognized. A stratified sample based on the gender, region, severity of disability, and disability category of the population of youth with disabilities in Taiwan was asked to volunteer their responses. Therefore, the generalizability of study findings may be limited. Replication of this study could perhaps determine whether the results would be consistent among larger or more diverse groups or in different countries. Also, this study did not consider all variables that could impact transition services, such as family factors (e.g., income, single parent), school context (e.g., size of class, teacher qualification), school policies (e.g., funding, mainstreaming), environmental factors (e.g., economic and political influences), and process factors (e.g., coordination of service and self-determination). This is not because these factors and problems are inconsequential, but because they are enormously complex and beyond the scope of the current study. Last, unknown effects may be present in current analyses due to the use of different respondents (e.g., either the subjects themselves or informed third parties), and the inability of some individuals (i.e., according to level

of ID) to respond or provide the complex information requested.

In the future, it would be valuable to develop better indicators of transition needs using multivariate and multidimensional measurements to describe the many and varied aspects of transition services. It would also be beneficial to replicate this study and include individuals from different grades or levels of disability severity, or to include individuals without disabilities to cross-validate the transition services construct. Further, work is needed to replicate these findings in larger samples of Taiwanese students with ID, as well as in other cultures.

Conclusion

For youth with ID and their families, transition from school to adult life requires an extensive amount of planning, knowledge, and coordination. Currently, the literature shows that youth with disabilities who leave public school lead more successful lives in Taiwan compared to before, though this needs to be continually monitored to reflect changes in needs and contexts. Students with ID, their families or familiar others, and service providers should work together to identify important transition needs and transition supplied that can serve as a basis and context from which to plan and evaluate programs/services. Policies and services developed in this context should also provide options to individuals with disabilities to pursue their own transition dreams, and simultaneously respect their choices.

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Appendix

TPAS Taiwan Version: Transition Service Needs Scale for Students with ID (Lin, 2005)

1. I like to participate in the learning activities.
2. I like to acquire new knowledge.
3. I wish my classmates or teachers help me to know the learning life on campus.
4. I wish my classmates or teachers know my differences and accept me.
5. I wish to attend student's clubs.
6. I wish to have good relationships with my classmates.
7. I wish to get tuition waiver and benefit for my studying in the university or college.
8. I feel respected and self-valued.
9. I often feel dizzy and giddy.
10. I often feel weak, feeble and get tired.
11. I often had stomachache and poor digestion.
12. I often trembled in my hand and foot.
13. I often ask for leave for my physical condition.
14. I had serious disease.
15. I had chronic disease.
16. I often fall down.
17. I could adjust to changing circumstance.¹
18. I could perform appropriate social behaviour¹
19. I don't know how to protect to myself.
20. I don't know how to take care of my health.
21. I know how to travel by public transportation.¹
22. I don't know how to manage my leisure life.
23. I know how to use money properly.¹
24. I wish to have basic common sense of legislation.

continued

Appendix (*cont'd*)

25. I wish to know related welfare policy and entitlement.
26. I wish someone to teach me how to exercise civil rights.
27. I wish someone to teach me how to communicate with people in public.
28. I wish someone to help me to get minimum wages and working hours.
29. I wish to know insurance policies.
30. I want to know my current performance level.
31. I want to know varied working environment.
32. I want to have practical training in the real work place.
33. I want someone to help me look for appropriate job opportunity.
34. I wish to be understood and accepted by my fellow worker and boss.
35. I want to know related work safety information.
36. I want to develop related job skills.
37. My body movement and physical ability were excellent.¹
38. My body balance and body stability were excellent.¹
39. My attention and concentration on work were excellent.¹
40. I could work alone and solve problem independently.¹
41. I know how to use different kinds of tools.¹
42. My limbs coordination was poor.
43. My bending down movement was poor.
44. My working ability was poor.
45. My weight lifting and carry ability were poor.
46. I could not work harmoniously with others.
47. I think I am inferior to others.
48. I think I will get mixed up things.
49. I am often dependent on others.
50. I feel unsatisfied with most of my body.
51. I often complained my illness but cannot check out why.
52. I could accept my weakness.¹
53. I am full of confidence and hope about future.¹
54. I could manage my temper and feelings of disappointment.¹
55. I know how to care for other.¹
56. I don't need people help me in getting or applying for subsidies.¹
57. I don't need people help me in getting or applying for fringe benefit.¹
58. I don't need related vocational training.¹
59. I don't need a job coach or job-developer.¹

Four-point Likert scale: 1, strongly disagree; 2, disagree; 3, agree; 4, strongly agree.

¹The item is coded the opposite way.