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The Agency and Well-being of Taiwan's Middle-school Adolescents with Disabilities: A Capability Approach Study

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ABSTRACT

The last two decades have witnessed a wave of utilising the capability approach for shifting the commitment of child disability policy from addressing impairments towards promoting child agency. Guided by the approach, the agency experienced by the 1,291 middle-school adolescents with disabilities within the 2011 Taiwanese Special Needs and Education Longitudinal database is explored. The analysis has led to the general finding that the big picture is an optimistic one, but it has also been elicited that about 40% of the sample was still suffering from different types of agency deprivation. Also, we have identified distinct configurations of personal, parental and school factors that are associated with their diverse agency deprivation. Notably, the agency status of adolescents with disabilities has been successfully proved to be closely linked to their functionings and capabilities. Based on these research findings, we end this paper with recommendations to service providers for enhancing the agency of these adolescents.

KEYWORDS

Adolescents with disability; capability approach; child agency; child participation; child well-being; children's service; self-determination; Taiwan

Introduction

Since the passing of the Special Education Act in the late 1990s, Taiwan's government has made steady progress towards providing a barrier-free educational environment for the children with disabilities (Wu, 2007). In particular, inclusive education has been implemented and led to a dramatic change to the schooling placement for this child group. By 2017, among 109,542 students with disabilities (from elementary to secondary school levels) the ratio of students in inclusive education to that in special schools was 95:5 (Ministry of Education, 2018). In addition, many parents of children with disabilities have expressed their expectation that their children could learn self-determination and participation as they grow (Chu, 2018). All these factors represent growing attention towards the agency issue of this child group in Taiwanese society. However, little is known about the actual agency level experienced by these children in their real live. In order to address this, under the capability approach (CA) it is argued that our policy and research focus should move beyond the individual's impairments to his/her own freedom and options (Dubois & Trani, 2009; Mitra, 2006; Trani, Bakhshi, Bellanca, Biggeri, & Marchetta, 2011).

Moreover, CA proponents have proposed an analytical framework for investigating the agency of children with disabilities (Bellanca, Biggeri, & Marchetta, 2011; Biggeri, Bellanca, Bonfanti, & Tanzi, 2011). Having acknowledged this, for this paper, we decided to adopt CA to deepen our understanding of the agency situation of these children in Taiwan.

For the research design and analysis, we selected the database of the 'Taiwanese Special Needs and Education Longitudinal Study' (TSNELS). With the acknowledgement of agency realisation as being a crucial developmental task, our research is aimed at tackling three important agency issues of adolescents with disabilities. The first concerns the specific profile of this group's agency. That is, we seek to elicit whether these adolescents have suffered from different agency deprivations during their lives. The second matter to be addressed relates to given predictors of their varied agency status. The third concerns what relationship child agency could have with other two crucial well-being aspects, i.e. functionings and capabilities, a matter of great interest to CA exponents.

Regarding the paper's structure, first, why it is imperative to incorporate CA into childhood disability studies is explained. Also, the crucial role agency could play within the CA locus in the promotion of the well-being of adolescents with disabilities is considered. Following this, the second section engages with the methodological considerations, including the database drawn upon, the Alkire and Foster method applied in the agency and well-being measurement and the statistical methods employed. Based on the research findings, the third section moves on to address three major research issues, including the: profile, predictors and the consequences of agency for adolescents with disabilities. The paper ends with a discussion on how the research findings could help in the refashioning of the services delivered to this child group as well as the research limitations that need to be tackled in future studies.

The Agency and Well-being of Children with Disabilities

Despite their citizenship being recognised, children with disabilities have been treated as passive receivers of welfare. Making things even more difficult, social barriers to their full participation in societies are still massive. As a consequence, these children often have difficulties in fulfilling their citizenship roles (Devandas Aguilar, 2017; Martin & Franklin, 2009). In order to promote their active citizenship, disability researchers have argued that these children should be supported with services for exerting their agency, such as choice, freedom and participation (Waldschmidt & Sépulchre, 2019; Wehmeyer & Abery, 2013). To further this pursuit, it is imperative to adopt an effective framework for analysing this group's agency and the associated factors. In this regard, in spite of conflicting perspectives on the nature of disabilities, both the medical and social models have overlooked the agency of persons with disabilities (Oliver, Sapey, & Thomas, 2012). The World Health Organisation proposed an International Classification of Functioning, Disability and Health (ICF) in an attempt to transcend the debate between these two models. Despite this, it still fails to consider the choice and perspectives of children with disabilities (Bickenbach, 2014). More recently, the abovementioned capability approach prevalent in developmental scholarship has been proposed to address these shortfalls (Bellanca et al., 2011). Regarding the theoretical core of this approach and its inspiration for childhood disability studies, this is explained in the following subsections.

The Capability Framework of Child Agency and Well-being

The capability approach (CA) stemmed from its opposition to economists' argument of utilising income as the chief proxy for human well-being. Of relevance to people with disabilities, despite possessing similar amounts of income to those who are able-bodied, this does not guarantee that they will enjoy the same level of well-being as their able-bodied counterparts. The reason for this can be attributed to their more complex needs and the harder challenges for them in converting the resources into their planned usage (Sen, 1985). In addition, the proponents of CA are sceptical about some psychologists' contention that human happiness can fully account for the well-being of people with disabilities. Their disapproval has to do with the fact that they can adjust to an inferior environment and hence, be content even though their potential is not being fulfilled (Burchardt, 2005).

To address these limitations, Nobel Prize-winning economist Amartya Sen was the first to propose that a more precise study of human well-being should focus on people's freedom, capabilities and their development (Sen, 1999). Subsequently, this ideational turn attracted more researchers from different disciplines to the study of human well-being in terms of potential being and doing (Robeyns, 2017). To explicate briefly how the CA could be applied to childhood disability studies, Figure 1 shows the three core elements of its analytical framework.

As shown in the figure, it can be seen that under CA child well-being is composed of two components:

Functionings: this aspect of well-being is about a child's achieved doing and being. Also, CA scholars hold that children's functionings have to be assessed in different life spheres (Biggeri, Ballet, & Comim, 2011). In relation to our investigated teenagers, the examination of their functionings must cover some essential domains, such as physical health, educational status and safety, which will be considered later.

Capabilities: this refers to the opportunities that a child has for his or her future developmental outcomes (Sen, 1999). In other words, it amounts to the idea of a child's well-becoming (Ballet, Biggeri, & Comim, 2011). Due to such a conceptualisation, some

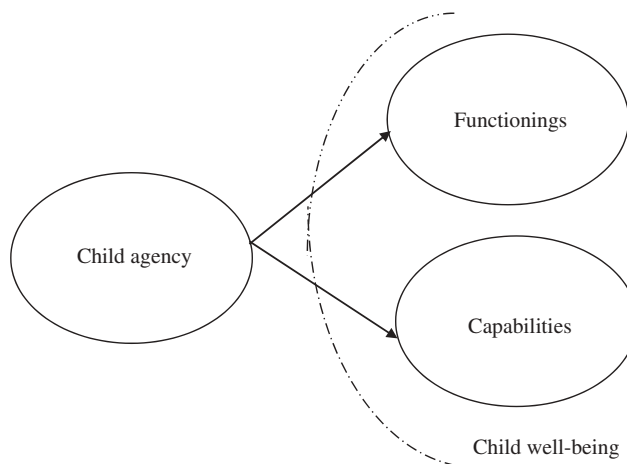


Figure 1. The CA framework of child agency and well-being.

proponents of CA have suggested defining it in terms of the various competencies and potentialities of children (Gasper, 2007; Hart & Brando, 2018). In relation to the details of these capabilities, these will be considered in the methodological section.

Clearly, children possess different opportunities for development, but what is salient, is the degree to which they take advantage of those that manifest themselves (Burchardt, 2005). This raises the matter of the third element of CA, that of child agency. As defined under the approach, this concerns the power a child has in formulating and pursuing his or her valued life. Regarding the types of power, these include autonomy and actions (Fattore, Manson, & Watson, 2017). Of relevance to childhood disability studies, autonomy pertains to whether a child with a disability is given the opportunities for deciding his or her own goals in life (Burchardt, 2005; Fattore et al., 2017). In order to pursue their goals, such children need to demand an adequate level of activities (Ballet et al., 2011; Olli, Vehkakoski, & Salanterä, 2012).

Regarding the appropriateness of child agency for the well-being of children with disabilities, the extant literature has shown starkly different perspectives on this relationship. For example, some parent groups have been found to show a deep-seated fear that giving children with disabilities more chances and freedoms could hamper their development of functionings and capabilities. Hence, they may refuse to let their children participate in extra-curricular activities so as to pre-empt possible threats to their child's safety (e.g. discrimination and abuse) (Arellano & Peralta, 2013). In contrast to this, the advocates of CA have argued that giving support to the agency of children with disabilities would help their development in either functionings (e.g. physical health and happy mood) or capabilities (e.g. specific skills learning) (Ballet et al., 2011; Hart & Brando, 2018). In order to determine which of these perspectives is most efficacious for their development, in this paper, we analyse Taiwanese data.

The Agency of Adolescents with Disabilities and Its Associated Factors

When turning to the adolescent agency as emphasised by under CA, disability scholarship has conceptualised it as consisting of two essential aspects. The first concerns their autonomy in self-determination. In many cases, this has been evaluated in terms of whether adolescents with disabilities have chances to decide upon their goals and some aspects of their lives (e.g. selecting friends and leisure activity) (Wehmeyer & Abery, 2013). As to the other requisite, this relates to their activity engagement towards goal achievement. Regarding this, adolescents with disabilities should first learn how to express their own preference. After that, they should be supported to participate in school and community life (e.g. play with classmates and leisure activities with friends in the community) (Dean, Kim, Shogren, & Wehmeyer, 2016; Lansdown, 2010). When we cross-tabled these two aspects, as seen in Table 1, this helped us to develop the typology of adolescents' agency.

Table 1. A typology of adolescents' agency.

Activity engagement	Self-determination	
	Adequate	Deprived
Adequate	(a) Fully active agent	(b) Constrained agent
Deprived	(c) Unconfident agent	(d) Fully passive agent

Fully active agent: For this group of adolescents, they acquire considerable autonomy in deciding some issues (e.g. eating and leisure time) in their lives. Equally important, they show an adequate level of activity engagement in family and school life, such as leisure activity with family members or recreational activity with schoolmates. Given these attributes, this group of adolescents is regarded as being fully active agents, which is the objective to aim for with disability policy.

Constrained agent: For this group, they are unable to pursue their goals and make independent decisions about their lives. Despite this, they still show a decent level of participation and can express their opinions. The reason for this might have to do with the adults' insufficient expectation about the child's competencies and hence, there is strong disapproval of the latter's choice making. Meanwhile, they force adolescents to participate in the activities when required (Kim, Wang, Orozco-Lapray, Shen, & Murtuza, 2013). Because of the violation of their agency, this situation can also be identified as vastly inferior to that of the active agents described above.

Unconfident agent: In spite of being able to take some decisions, their participation in family and school is inadequate. Also, they rarely express their views. Undoubtedly, this situation amounts to an incomplete sense of agency for these adolescents. The reason for this could be attributed to a teenager's self-underestimation of his/her own competencies and environmental constraints (Middleton, 1999).

Fully passive agent: For this group, they are discouraged from making their own choices. Also, they are completely deprived of the needed activity engagements. Compared to the previous three cases, adolescents in this group have confined themselves to being fully passive agents. Indeed, this severe deprivation is the outcome of multiple discriminations, low expectations and social exclusion for these children (Martin & Franklin, 2009).

After highlighting the heterogeneous agency that could be experienced by adolescents with disabilities, some CA proponents further hold that their development is often structured by the interplay of resource factors and conversion factors that they possess in their lives (Trani & Dubois, 2011). Regarding resource factors, many families in which there are children with disabilities are unable to afford the extra expenditure caused by the disability, such as assistive devices, transportation and house adaption. Consequently, such material deprivation would have repercussions for the adolescent agency (Devandas Aguilar, 2017). As to the conversion factors, they often determine the extent to which adolescent could convert their resources into the desired ends. In this respect, some research has uncovered that the parental perceptions of a child's worth and his or her competence could have a substantial impact on his or her self-determination (Carter et al., 2013). Also, in some studies, it was hypothesised that the adult-child relationship could affect the agency of adolescents with disabilities (Wehmeyer, 2014). Moreover, some researchers have contended that profound disability could severely limit the exercise of agency for these children (Barclay, 2012).

Given the aforementioned resource factors, as CA researchers have argued, each one often exhibits different features. This helps account for why they could facilitate different aspects of human agency. For the same reason, resource factors could have significant impacts on functionings and capabilities simultaneously (Clark, 2005). Moreover, CA researchers have contended that many aspects of human agency are derived from the interplay between resource and conversion factors. According to the CA perspective, combinations of them are necessary and sufficient for good capabilities and functionings (Burchardt, 2005). Regarding how to determine the actual influence of resource and

conversion factors on Taiwan's adolescents with disabilities, this is explained and justified in the methodological section, which comes next.

Methodology

In this section, we consider the relevant methodological issues, including the database, the method in the measurement of agency and well-being deprivation and the adopted statistical techniques.

Database

For this paper, the 'Taiwanese Special Needs and Education Longitudinal Study' (TSNELS) was utilised for the analysis. The aim of TSNELS is to uncover multiple aspects and the dynamics of the lives of Taiwan's children and adolescents with disabilities. In 2007, two child groups were first randomly sampled from the national database of children with special education needs, according to disability categories. They included 1,471 pre-school and 3,456 primary school children with disabilities. Subsequently, there were three follow-up surveys of these two subgroups in 2009, 2011 and 2012. (Su, 2015). In order to collect rich information of the child sample, each wave survey also covered parents and teachers for investigation. Regarding the sample examined for this paper, it was taken from those who were at middle school level in 2011, because the active agency has been assumed as being key to a smooth transition into adulthood (Wehmeyer & Palmer, 2003). The adolescents with disabilities self-reported the interview questions in terms of their own experiences and opinions. However, for some with severe disabilities, their teachers would have been employed to assist in eliciting their responses. In accordance with recent calls for respect for child agency, we chose to focus on adolescent self-reporting for the analysis. As to the original sample, it contained 1,678 adolescents. However, since some had not answered the required questions, we discarded these responses and the total sample size was 1,291 cases for the analysis.

As to the demographical features of our sample, they are presented in Table 2, where it can be seen that the database has more male than female adolescents. Also, adolescents with a physical and sensory disability are found to account for the largest share (i.e. 37%) of the sample. When considering the severity of a disability, the adolescents experiencing mild/moderate or severe disabilities stand for 77% and 23% of the sample, respectively.

The Selection of the Indicators for Measurement

Table 3 presents the operationalisation of agency and two aspects of well-being for subsequent measurement. For the concept of agency, its two major dimensions (i.e. self-determination and activity engagement) have been selected for investigation. For the former, we have chosen indicators in relation to goal-setting and self-decision, to which adolescents with disabilities are entitled. As to the domain of activity engagement, we have picked up appropriate indicators available from the database to examine adolescents' family and school participation as well as whether they felt their opinions were respected and acted upon. All the selected indicators were measured on five-point scales (e.g. from totally disagree to totally agree). In this paper, we have defined the

Table 2. Description of sample features (%) (N = 1,291).

Variable	
Gender	
Male	66.15
Female	33.85
Disability label	
Severe emotional disability	10.38
Learning disability	18.90
Intellectual disability	16.03
Multiple disabilities	3.95
Autism	13.79
Physical and sensory disabilities ^a	36.95
The severity of disability	
Mild/moderate	76.92
Severe	23.08

Physical and sensory disabilities include physical disability, hearing impairment, visual impairment, speech impairment and chronic illness.

adolescent as being deprived of an indicator, if he/she replied that they totally disagreed or disagreed with the positive statement of the given active agency state.

For the operationalisation of the other two aspects of well-being, both multidimensional concepts and data availability were taken into account. Regarding the concept of functionings, in accordance with CA proponents' emphasis on basic functionings, we have operationalised it for five essential aspects, including: physical health, mental health, education, care and safety (Moore et al., 2008). For each, appropriate indicators have been chosen from the database (see Table 3). For any investigated adolescent who totally disagreed or disagreed with the positive state of a given functional indicator, he/she was identified as deprived in that respect. As to the capability set, following a suggestion by Gasper (2007), this was operationalised as two sub-groups of capacities as follows.

Skill-based capacities: This refers to the needed hard and soft skills that people should possess for pursuing their own life projects (Bellanca et al., 2011). In this paper, we have picked up four basic capacities of adolescents with disabilities from the teacher reports for investigation, namely: problem-solving, self-caring, emotional expression and interpersonal communication (see Table 3). For each of them, if teachers had an extremely low opinion of their capacities, with the average performance of other classmates being a comparator, they were identified as being deprived in these needed skills.

Potentiality-capacities: This concerns the endowments that a humanbeing can have in his or her life (Nussbaum, 2011). In relation to the investigated group, the more endowments they expressed they had in their current life, the greater the possibility that they can be what they wish to be. As seen in Table 3, for the investigated adolescents expressing low confidence in this respect, this classifies them as being considered deprived of this particular capacity.

The Alkire-Foster Method for Measuring Adolescent Agency and Well-being Deprivations

In order to assess whether the adolescents with disabilities were deprived in regard to the investigated aspects of agency and that of well-being (i.e. self-determination, activity

Table 3. The measuring indicators of adolescents' agency, functionings and capabilities (N = 1,291).

Agency	Deprivation (%)
Self-determination	
Do you set yourself clear goals?	34.86
Do you feel you are able to make decisions on your own?	26.26
Do you often make your own decisions (e.g. eating, clothing, shopping and activity participation)?	21.77
Do your parents often encourage you to make your own decision?	27.19
Do you arrange your time on your own?	54.07
Activity engagement	
Do you often participate in family activities?	25.41
Do you often participate in school activities?	18.59
Do your parents listen to your ideas?	41.13
Do your teachers listen to your ideas?	36.48
Do you feel able to express your own views appropriately?	38.73
Functionings	Deprivation (%)
Physical health	
Do you go to sleep on time?	26.34
How do you feel about your own physical health?	41.05
Do you have serious illness?	14.56
Mental health	
How is your mood?	15.26
Do you feel nervous very often?	38.11
Do you feel unable to concentrate on your affairs very often?	46.55
Do you feel lonely and helpless very often?	25.87
Education	
Can you make sense of the teaching by the teachers?	47.56
Do you like going to school	22.93
Care	
Do your parents care about you?	17.58
Do your parents know who your friends are?	42.14
Do you have a good relationship with your parents?	6.51
Safety	
Do your classmates often mock you?	32.53
Do your classmates often ignore you?	31.45
Do you feel safe at school?	7.51
Capabilities	Deprivation (%)
Skill-based capacities	
Problem-solving capacity	54.38
Self-caring capacity	31.14
Emotional expression capacity	48.18
Interpersonal communication capacity	9.30
Potentiality- based capacities	
Adolescent's self-report of his/her own advantages in his/her life	24.48

engagement, capabilities and functionings), we have adopted the 'dual-cutoff' method proposed by Alkire and Foster (2008). According to this method, for each teenager, first, whether he/she suffers from the deprivation for each indicator is elicited (see Table 3). Also, for each measured aspect of agency and well-being, we have given its measuring domains equal weight. In order to identify whether an adolescent is deprived in two agency aspects or two measured well-being components, we need to set the deprivation cut-offs (i.e. K-values) for each of them. In this respect, the K-value for two agency domains has been set as half of their own measuring indicators (i.e. 2.5 for self-determination; 2.5 for activity engagement). As to the K-values for functionings and capabilities, they have been allocated half of their measuring domains (i.e. 2.5 for functionings; 1 for capabilities).

The Predictors of Well-being of Adolescents with Disabilities

As contended by CA proponents, the agency status of teenagers with disabilities is dependent on a composition of factors. In this paper, two groups (i.e. resource factors and conversion factors), as emphasised by CA scholars, were chosen for investigation. For the resource factor, we selected the variable of household economy to measure whether a teenager was in a poor family or not. As to the conversion factors, we considered them ranging from individual to family and to school levels. For the individual conversion factors, a teenager's gender, primary disability, the severity of disability and personality were taken into account (Lansdown, 2010). With regards to the family conversion factors, they included parental education (Chiang, Cheung, Hickson, Xiang, & Tsai, 2012), parental involvement in the child's education (Sinclair, Christenson, & Thurlow, 2005), parental expectation of the child's educational attainment (Arellano & Peralta, 2013) and parental awareness of the child's educational rights. Regarding the school-related factors, the schooling arrangement of adolescents with disabilities was picked up for analysis (Shogren et al., 2007).

Statistical Methods

For this paper, multiple statistical methods were employed to explore three related agency issues for adolescents with disabilities. First, the Alkie and Foster method was deployed to map the specific profile of agency, functionings and capabilities of the investigated adolescents. Following this, a multinomial regression model was used to identify the predictors of different types of agency deprivations experienced by these teenagers. In order to provide a better understanding as to whether teenagers' agency states were related to capabilities and functionings deprivations (two binary dependent variables), the logic regression model was adopted, with the control of a complete list of resource and conversion factors that were considered in the previous multinomial regression model.

Results

The Profile of Agency, Capabilities and Functionings of Adolescents with Disabilities

Consistent with the CA assumption of human heterogeneity, Figure 2 shows a diverse status regarding the investigated adolescents' agency. Whilst about 60% of the surveyed teenagers were fully active agents in their lives, this means that 40% of the sample were experiencing different types of agency deprivation. In particular, the analysis found that about 11% of the investigated adolescents were completely deprived of self-determination and activity engagement towards their development. When considering the outcome of functionings and capabilities, Figure 3 shows that the shares of adolescents suffering from these two deprivations were 11% and 28%, respectively.

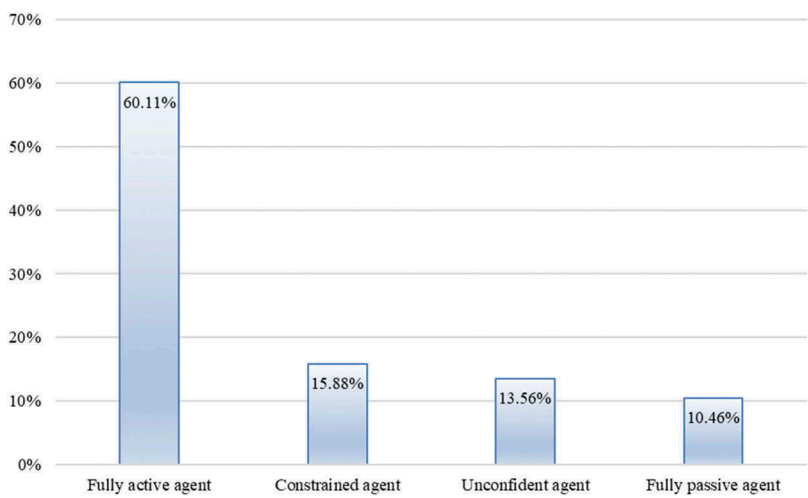


Figure 2. Agency of adolescents with disabilities (%).

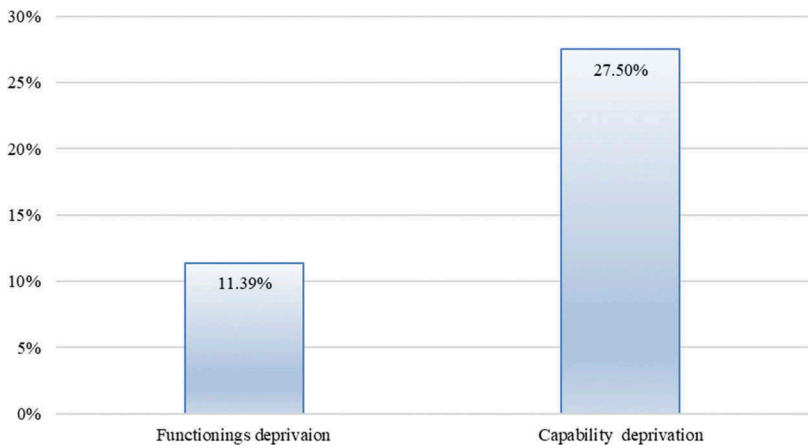


Figure 3. The deprivations of functionings and capabilities among adolescent with disabilities (%).

The Predictors of Diverse Agency Status of Adolescents with Disabilities

Table 4 presents the results of multinomial logistic regression about the determinants in relation to the agency of adolescents with disabilities, with the group of fully active agents being selected as the reference category for subsequent comparison. Regarding the analytical findings, they are discussed in what follows.

Compared to the fully active agent group, the greater likelihood that an adolescent became a constrained agent is strongly related to a configuration of factors. Regarding the individual conversion factors, the results show that female teenagers with disabilities were less likely to be deprived of self-determination than their male counterparts. Moreover, some disability-related factors were highly related to teenagers’ reduced opportunity for self-determination. For example, compared to their counterparts with physical and sensory impairments, those with learning or intellectual disability or autism were much less likely to

Table 4. The multinomial logistic regression on agency states of adolescents with disabilities (N = 1,291).

	Constrained agent	Unconfident agent	Fully passive agent
Resource factor			
Poor family (ref: non-poor)	1.191	1.154	0.918
Conversion factor			
Female (ref: male)	0.542**	0.693	0.879
Severe emotional disability (ref: physical and sensory disabilities)	1.698	2.194**	1.692
Learning disability	1.952*	2.196**	1.266
Intellectual disability	3.052***	2.161*	1.961*
Multiple disability	1.748	0.739	0.354
Autism	1.798*	1.809	1.886
Severe disability (ref: mild, moderate/severe)	1.345	1.233	1.373
Introverted personality (ref: non/moderate introverted)	1.371	1.362	2.164***
Low self-esteem (ref: high/moderate)	1.527*	2.085***	2.303***
Parental education in senior high school and low (ref: college and above)	1.217	0.957	1.234
Parental low involvement in child's education (ref: high/moderate)	1.033	2.012**	2.043**
Parental low expectations of their child's educational attainment (ref: high/moderate expectation)	1.585*	1.252	2.029**
Parental poor understanding of the educational rights of disabled children (ref: sufficient understanding)	0.969	1.278	1.538*
Special education (ref: inclusive education)	1.918***	1.252	2.166**
Constant	0.053***	0.053***	0.014***
R ² (Nagelkerke)	0.214		

* p < 0.05; ** p < 0.005; *** p < 0.001

make their own decisions. As to personality factors, similar to previous studies, teenagers who had low self-esteem seem to have had less opportunity to exercise choice-making than their counterparts with high self-esteem (Lee et al., 2012). When considering family conversion factors, consistent with previous findings, the parental underestimate of a child's capacity (e.g. educational attainment) would appear to lead to fewer chances for the latter to make independent decisions (Arellano & Peralta, 2013; Carter et al., 2013). With regards to the investigation of school conversion factors, the analysis confirms findings in extant studies that special education provides fewer opportunities of self-determination for children with disabilities than an inclusive one (Shogren et al., 2007; Wehmeyer & Lee, 2008).

Regarding the comparison between the unconfident agent group and the fully active one, a specific configuration of factors was identified that accounts for the former's deprivation. First, within the disability-relevant factors, the research findings reveal three primary types of disability, namely, emotional, learning and intellectual disability, were more likely to be related to both a lack of participation and absence of expression of opinions amongst the adolescent sample, than those with physical and sensory disabilities. As to other personal traits, in line with previous studies, the adolescents with low self-esteem are found to have participated less in family and school activities compared to their high self-esteem counterparts (Jemtå, Fugl-Meyer, Öberg, & Dahl, 2009; Shields, Murdoch, Loy, Dodd, & Taylor, 2006). When considering family factors, it emerges that the parents with less involvement in their child's education were closely linked to his or her insufficient activity engagement. This finding is consistent with previous research, which elicited that parents play a crucial role in enhancing child participation (Ballet et al., 2011; Wehmeyer, 2014).

In relation to the comparison between the fully passive agent group and that of fully active agency, there is a group of predictors found to be related to the former's severe

deprivation. First, compared with the adolescents with physical and sensory impairments, those with intellectual disability were more likely to fall into the most deprived situation. Also, our findings confirm that the investigated teenagers with either introverted traits or low self-esteem had a much higher risk of agency deprivation than those with neither. As to the findings of family conversion factors, these are consistent with extant study, in that the disengagement of parents in their child's education was significantly associated with the likelihood that they were reduced to being fully passive agents (Sinclair et al., 2005). A similar association was found between low parental belief in a child's competency and the severe agency deprivation of teenagers with disabilities in other research (Carter et al., 2013). Moreover, adolescents whose parents had little understanding of their educational rights were more likely to be in the double deprivation group than those whose parents who did know about them. Finally, our findings regarding schooling confirm and even extend Shogren and his associates' (2007) previous research. That is, we have discovered that a specific educational arrangement would be more related to severe agency deprivation than an inclusive one.

The Relationship between Agency and Functionings and Capabilities

Table 5 presents the results for the relationship between different factors (including different agency deprivations) and two shortages of well-being (i.e. functionings and capabilities deprivation). Regarding the result of functionings deprivation, we have found strong evidence for the CA hypothesis that the three restricted types of agency investigated are highly related to this type of well-being shortage (Hart & Brando, 2018). In respect of the control factors, we only found that the teenagers with low self-esteem were

Table 5. The logistical regression on functionings deprivation and capabilities deprivation for adolescents with disabilities (N = 1,291).

	Functionings deprivation	Capabilities deprivation
Constrained agent (ref: fully active agent)	2.186**	2.907***
Unconfident agent	3.298***	1.865**
Fully passive agent	5.72***	3.88***
Poor family (ref: non-poor)	0.988	1.135
Female (ref: male)	1.307	1.161
Severe emotional disability (ref: physical and sensory disabilities)	1.082	1.045
Learning disability	0.659	1.132
Intellectual disability	0.762	0.747
Multiple disability	0.735	1.503
Autism	1.28	1.515
Severe disability (ref: mild, moderate/severe)	0.878	1.007
Introverted personality (ref: non/moderate introverted)	0.865	1.109
Low self-esteem (ref: high/moderate self-esteem)	1.986**	2.173***
Parental education in senior high school and low (ref: college and above)	1.086	0.972
Parental low involvement in child education (ref: high/moderate involvement)	1.048	1.347
Parental low expectations of their child's education (ref: high/moderate expectation)	0.936	1.12
Parental poor understanding of educational rights of disabled children (ref: adequate understanding)	1.343	1.296
Special education (ref: inclusive education)	1.195	1.007
Constant	0.035***	0.095***
R2 (Nagelkerke)	0.125	0.152

* $p < 0.05$; ** $p < 0.005$; *** $p < 0.001$

more deprived of functionings than their high self-esteem counterparts. As to the analysis of capabilities deprivation, the research findings also support the CA assumption that the three types of agency deprivation of interest are strongly related to a reduction in the capabilities of adolescents with disabilities (Burchardt, 2005). In addition, a teenager's low self-esteem has a lot to do with his or her shortage of capability development.

Discussion

In order to promote active citizenship, rather than passive entitlement of adolescents with a disability, in this paper, we have applied CA to study a Taiwanese sample. We sum up our major research findings and their theoretical and policy implications for empowering the agency of this teenager group. Also, we consider the research limitations to be dealt with in future studies.

First, our results show that, in spite of their disabilities, 60% of the investigated adolescents were able to secure a decent level of agency in their daily life. Such a positive result helps to dispel the myth that child disability is the biggest hindrance to their agency realisation (Wehmeyer & Palmer, 2003). However, for the remaining 40% of investigated adolescents, they were still deprived of different opportunities to exert their agency. For these deprived teenagers, more service support should be provided so as to help them to remove the barriers to this realisation.

Second, our results also support the CA hypothesis that different configurations of factors could be related to diverse agency deprivations experienced by adolescents with disabilities (Burchardt, 2005). For example, for those who fell into the constrained agent group, the interplay between the given impairments, low self-esteem, low parental expectation of the child education and the lack of inclusive education could have led to their deprived situation. As to the unconfident adolescent group, their inadequate participation could have had a lot to do with the interaction among impairments, low self-esteem and the lack of parental support for their education. Finally, for the adolescents becoming fully passive agents, their most inferior situation might have stemmed from the lack of a positive family and school environment in addition to challenges owing to their impairments.

Third, our study of Taiwan's sample has provided support for CA's claim that greater agency is positively related to the functionings and capabilities of teenagers with disabilities (Burchardt, 2005; Hart & Brando, 2018). Perhaps this would help dispel some parents' doubts and encourage their support to pro-agency services for these children.

Fourth, when turning to the redesigning of children's services, our research findings are able to offer some insights into this process. For example, the teenagers with low self-esteem have been found to have had more difficulties in exerting their agency. Due to this finding, we suggest that this child group should be given priority in terms of support to increase their positive self-esteem as well as to encourage their self-determination and participation. In addition, we recommend that some parenting support should be provided for the parents of children with disabilities. By so doing, this would effectively help them gain competence in negotiating child autonomy within their families and facilitate their child in working towards goals (Wehmeyer, 2014). For schools, they should help students with disabilities participate more in the multiple aspects of their lives than previously in most cases. In order to achieve this, schools

need to provide programs that cultivate decision-making, problem-solving and goal attainment skills for these children, according to their level of maturity (Wehmeyer & Abery, 2013).

In recent years, East Asia has witnessed a wave of promoting child agency in some countries' special education and disability policies (Ohtake & Wehmeyer, 2004; Wehmeyer & Lee, 2008). Of relevance to this, our study is the first application of CA to investigate the agency of adolescents with disability in this region. It contributes to the embryonic development of this issue in regional scholarship by providing a nuanced understanding of the agency of this child group in Taiwan. Also, we have shed light on how their agency status is highly related to their well-being development. Despite the above insightful exploratory findings, we still need to consider our research limitations. The first, concerns our inability to involve preschool and primary school children contained in the TSNELS for analysis. The reason for this is that the TSNELS relies on adults for collecting these children's data and hence, their information is inconsistent with a child perspective, as emphasised by CA-based studies. In addition, because it was a cross-sectional study, we were unable to track agency dynamics of these adolescents during their development. Regarding these limitations, it is hoped that they will be addressed in future studies. In sum, we anticipate that CA could be widely used in East Asian disability study to promote both the agency and well-being of this child group.

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