



# 一個加強發掘雙重特殊需求學生的 決策與行動歷程分享

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## 摘 要

### 研究目的

國內 100 位學童中只有 0.022 位被鑑定為雙重特殊需求，遠低於文獻推估（郭靜姿、陳彥璋，2022）。依據特殊教育法，雙重特殊需求學生因需要同時符合資優與身心障礙的鑑定標準，因此國小一般智力資優學生在個別智力量表中智商必須達到 130 分或百分等級 97 以上。然而受到遮蔽效應的影響，身心障礙學生常達不到鑑定標準而失去參與資優教育機會。美國資優兒童協會於 2018 年建議運用魏氏兒童智力量表第五版之擴展性和調整性指數鑑定雙重特殊需求學生，以發掘雙重特殊需求學生的優勢，確保其接受資優教育服務的機會。因此本研究的目的在分享如何透過政策制定及行動歷程將運用擴展性指數的概念落實於雙重特殊需求學生的發掘。

### 研究設計／方法／取徑

要改變傳統固定的資優鑑定方式並不容易，需要教育行政人員、特殊教育學者、教育心理學家、測驗專家和學校教師間大量的溝通與

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投稿日期：2022 年 12 月 27 日；修正日期：2023 年 7 月 18 日；接受日期：2023 年 12 月 29 日

協調，因此決策的過程通常耗時費力。政策及公共政策發展代表一個動態的過程，其運作過程可以區分為五個階段：1. 政策問題形成階段，2. 政策規劃，3. 政策合法化，4. 政策執行，5. 政策評估（Anderson, 2003）。本研究參考互動式政策制定模式（Interactive policy-making model）（Driessen et al., 2001）的六個階段進行政策溝通及執行歷程，以期達成政策修訂及合法化的目的，並順利進行推廣。在政策改變的過程中，本研究作者於 2019 年在教育部科學指導委員會取得教育部支持，指示加強推動雙重特殊需求學生的發掘及培育工作，而後與教育部國教署進行溝通與討論，並由國教署發布相關推動要點，繼而整合資優教育與身心障礙教育學者專家意見，採用多種宣傳形式與教師及行政人員溝通，喚起減少雙重特殊需求學生教育機會落差、發展優勢才能的概念。本研究記錄了決策過程中，參與專家、教育行政人員、評估人員與特教老師的建議，並針對質性資料進行編碼和分析，用以呈現相關政策形成、推動歷程及執行成效。

## 研究發現或結論

研究結果發現各級主管教育機關與不同領域的專家、教師均了解推動身心障礙者教育權益的重要性。但對於如何降低學習機會公平性的差距，以及採取何種作法來協助身心障礙學生確有許多不同的觀點。藉由參與政策決定的歷程，本研究提出六個政策推動階段，以做為日後由上而下推動教育政策時的參考。

## 研究原創性／價值

運用互動式政策制定模式進行政策的溝通與調整，不但能反映雙重特殊需求學生的鑑定需求，還可以減少政策推動後的阻礙。本政策制定及行動歷程先由專家學者提出構想並與教育主管機關溝通，再整合資優教育與身心障礙教育背景專家的意見。最後藉由研討會或座談會等方式，與縣市政府教育局承辦人員、特教老師、評估人員及家長進行意見交換。此一政策決定的歷程不僅能整合理論與現場教學的需求，也能在教學現場中有效的發掘出雙重特殊需求學生。在價值上，本研究藉由強而有力的政策支持與實踐，提供雙重特殊

需求學生公平的教育機會，促進其才能發展，期盼能為臺灣雙重特殊需求學生創造更美好的未來。

**關鍵詞：**雙重特殊、發掘、政策制定、行動歷程





# PROCESS OF POLICYMAKING AND ACTION TO STRENGTHEN THE DISCOVERING OF STUDENTS WITH TWICE-EXCEPTIONALITY

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## ABSTRACT

### Purpose

The amount of twice-exceptional (2e) students is far lower than theoretical estimates indicate it should be. In a sample of 100 elementary school students in Taiwan, only 0.022% of the students were identified as 2e (Kuo & Chen, 2022). According to Taiwan's Special Education Act (2019), for students to be considered 2e, they must meet the identification standards for both giftedness and disability. Some students with disability may not reach the current standard for giftedness and therefore not be provided with the opportunity to receive gifted education services. In the United States, the National Association for Gifted Children (2018) recommends that examiners assessing giftedness use the expanded and ancillary index scores of the Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V) to identify 2e children. The present study presents the efforts toward policymaking and action in Taiwan related to implementing the use of the expanded and ancillary index scores of the WISC-V to identify 2e students and thereby provide them with an opportunity to develop their talents.

### Design/methodology/approach

According to Friedrich and Mason (1941), public policy is a proposed course of action for a person, group, or government within a given environment with opportunities and obstacles that

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Manuscript received: December 27, 2022; Modified: July 18, 2023; Accepted: December 29, 2023

the policy was proposed to leverage and overcome, respectively, to realize an objective or purpose. The present study revised and legalized policies related to a specific group of stakeholders. To achieve this, the interactive policymaking model proposed by Driessen et al. (2001) was used for policy communication and implementation. The goal was to promote the use of the expanded and ancillary index scores of the WISC-V for identifying 2e students so that these students could be provided with additional opportunities to develop their talents. The researchers engaged in discussions with the Ministry of Education and the K-12 Education Administration, collected expert opinions on gifted education and disability, and used multiple advocacy to communicate the concepts of equity gaps with teachers and administrators. The opinions of these stakeholders were recorded, and the qualitative data were coded and analyzed to develop decision-making and action processes.

### **Findings/results**

The study revealed that educational authorities, experts, and teachers believed that promoting the educational rights of students with special needs is crucial. However, we observed diverse perspectives regarding how to reduce equity gaps for these students and regarding the methods that should be adopted to assist students with disabilities. The six stages of policymaking and action proposed in this study can be used as a reference for individuals engaging in top-down promotion of education policy.

### **Originality/value**

The interactive policymaking model was used to communicate and implement new policies aimed at improving identification of 2e students and to minimize obstacles to subsequent policy implementation. The approach integrates theoretical knowledge with practical needs, effectively supporting 2e students. By promoting equal educational opportunities, the study can assist educators in nurturing the talent development of 2e students in Taiwan and thereby assist these students in achieving a better future.

*Keywords: twice-exceptionality, discover, policymaking, action process*

## Introduction

Twice-exceptional (2e) students are students with both giftedness and disability. Often, their giftedness masks their disability, or their disability masks their giftedness. This masking increases the difficulty of identification and educational placement of 2e students; if such students do not receive appropriate intervention and external support, the opportunity gaps they already face may widen (Chen et al., 2023). For example, 2e students may be excluded from gifted programs, which may reinforce an “appearance of ‘average’ abilities” among such students (Morrison & Rizza, 2007; Neihart, 2008; Wang & Neihart, 2015). Establishing a comprehensive standard for identifying 2e students is challenging because of barriers to identification, such as the masking effect, a lack of awareness of 2e students, inflexible regulations to assessment procedures, insufficient support for teachers, and widely varying definitions for giftedness and disability (Lovett, 2011; Lovett & Sparks, 2010, 2013; McCoach et al., 2001). The masking effect may be the most challenging of these barriers to overcome (Betts & Neihart, 1988; McCoach et al., 2001). Researchers have reported that 2%-7% of all students are 2e students (Foley-Nicpon et al., 2011; Pfeiffer & Foley-Nicpon, 2018; Ruban & Reis, 2005; Trail, 2011). However, according to the Ministry of Education (MOE) in Taiwan, in 2018, only 4 out of every 1,000 students with disability were identified as 2e (Kuo & Chen, 2022). Evidence indicates that 2e students are often excluded from programs for gifted and talented individuals. Moon and Reis (2004) reported that 2e students often exhibit the characteristics of learned helplessness, frustration, low motivation, low self-esteem, perfectionism, social difficulty, and emotional or behavioral problems.

According to the Special Education Act (2019), individuals may be classified as 2e students if they meet the identification standards for both disability and giftedness. The lack of flexible identification standards has impacted the instructional support available to 2e students. Because of the mutual influence of giftedness and disability traits, it is challenging for 2e students to meet both criteria above. The strengths of many 2e students have been underestimated and have not been considered in the planning of gifted education services. Many 2e students receive remedial support for weaknesses or deficits in resource classes and are not presented with opportunities to further develop their strengths. Therefore, in identifying 2e students, educators should consider the areas in which the students are strongest and weakest rather than relying solely on a

full-scale IQ score as the primary criterion (Foley-Nicpon & Assouline, 2020; Maddocks, 2018, 2020). According to the National Association for Gifted Children (NAGC, 2018), any of the six expanded and ancillary index scores of the Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V) can be used to select students for gifted programs if a score falls within the confidence interval of the required score for admission. These six indices are the verbal index (VECI), the nonverbal index (NVI), the expanded fluid index (EFI), the general ability index (GAI), the full-scale IQ (FSIQ) scale, and the expanded general ability index (EGAI). The NAGC also indicated that the quantitative reasoning index (QRI) is an effective indicator of mathematical talent. Using the expanded and ancillary index scores of the WISC-V to identify 2e students can increase the likelihood that such students will be provided with opportunities to participate in gifted education services.

Current policy regarding identification of 2e students must be adjusted. However, shifting the focus of teachers and parents of students with learning difficulties from employing traditional deficit-oriented remedial teaching strategies to enriching talent development is difficult. Rubenstein et al. (2015) discovered that many teachers and schools were insufficiently equipped to provide an appropriate educational experience to gifted students with autism spectrum disorder; for example, they often formed inappropriate expectations, focused on deficits, did not consider student strengths and talents, and applied inflexible teaching strategies. In a longitudinal study that involved 13,176 children with disabilities, only 11.1% of 330 children who were identified as gifted were provided with the opportunity to participate in gifted education services (Barnard-Brak et al., 2015). These and the aforementioned findings indicate that if educational administrators, teachers, and parents focus on the weaknesses of students with disabilities and adopt inflexible identification policies, 2e students may miss out on opportunities to develop their interests and strengths. Therefore, the present study investigated how educators can employ top-down policy promotion models to foster consensus with respect to policy amendment. First, the first author conferred with MOE officials and representatives of the K-12 Education Administration to reach a consensus on adjusting the inflexible identification methods and obtain the administration's support. Second, this study obtained perspectives from experts in the fields of gifted education and disability and from the creator of the Taiwanese version of the WISC-V. After the experts reached an agreement regarding how Taiwan's methods for identifying 2e students should be adjusted, the study authors held



several seminars to collect the opinions of local government administrators, psychological assessment teachers, and special education teachers on how the learning opportunity gap for 2e students could be reduced and how the talents of 2e students could be more effectively developed. Finally, the opinions and feedback of each participant in the seminars and workshops and their satisfaction with these seminars and workshops were used as a basis and reference for the development of an adjusted identification model. By applying this model, relevant authorities can use the expanded and ancillary index scores of the WISC-V to identify 2e students. This study further employed qualitative data analysis to propose six steps for developing and implementing policy; these steps can be used as a reference for future decisions related to special education policy.

## Literature Review

### Equity Gaps in Learning Opportunities

Physical and psychological impairments can limit the learning opportunities of 2e students and widen achievement gaps. However, providing gifted educational services for these students can offer them cognitive challenges that are well-suited to their abilities and can increase their learning motivation, which can mitigate the negative effects of impairments and overcome achievement gaps. Identifying the strengths of 2e students through a robust identification process and assisting such students in developing their talents is more important than labeling them as gifted. A robust support system based on, for example, economic educational capital, cultural educational capital, and attentional learning capital (Reutlinger et al., 2020; Ziegler & Stoeger, 2017) and collaboration at all educational levels would close learning, achievement, opportunity, and excellence gaps for 2e students. A robust support system is also crucial in ensuring 2e students benefit from their educational settings and have favorable career prospects. To ensure the potential of 2e students is effectively developed, policy must be established that overcomes the limitations of the current process of identifying such students. Establishing legislation, policy, and financial support focused on 2e students at the national level can facilitate teachers to accommodate and to formulate plans to meet the needs of these students (O' Tuel, 1994; Roberts et al., 2015). Furthermore, such action can

enable 2e learners to benefit from educational and enrichment opportunities in school settings and develop their talents (Juhl, 2020).

Policies guide the implementation of education in schools and the provision of support in the form of human resources and funding; therefore, policymaking is crucial for educational administrative authorities seeking support for and promoting specific educational activities. To improve the mechanisms for uncovering and nurturing the talents of 2e students, the present researchers both discussed relevant concepts of adjusting the identification methods and actively sought policy support for the promotion of these concepts. In the present study, the researchers present relevant actions that can be taken to obtain top-down administrative support and to engage in bottom-up communication with educators to reduce equity gaps by the adjustment of identification methods. Furthermore, the researchers propose the approach of using a selectivity index to identify 2e students with superior general intelligence in elementary schools.

### **Individual Intellectual Scale for Identifying Strengths and Weaknesses**

Intelligence tests play a major role in the process of identifying students with special needs. The Wechsler Intelligence Scale for Children is widely used to identify such students in Taiwan. The WISC-V can be used to obtain a full-scale IQ score and scores for five primary indices: the verbal comprehension index, visual spatial index, fluid reasoning index, working memory index, and processing speed index. These primary indices can be used as references for teachers that can enable them to understand the internal strengths and weaknesses of individuals (Weiss et al., 2016). Moreover, the differences in the scores among students with different disabilities can serve as an essential benchmark for clinical diagnosis. Children with attention-deficit/hyperactivity disorder (ADHD) struggle to maintain sustained focus, exhibit weak inhibition abilities, and display high levels of impulsivity (Barkley, 1997). Therefore, the cognitive abilities of children with ADHD are generally considered to be lower than those among children without ADHD (Kuntsi et al., 2004; Rucklidge & Tannock, 2001). Research reported that performance on the processing speed index may be affected by short-term visual memory, attention, visual-motor coordination, fine motor skills, and personality (Kuntsi et al., 2004; Rucklidge & Tannock, 2001). Therefore, students with ADHD may generally have lower scores on the PSI because of their impulsivity rather than because of processing deficits.

The cognitive performance of students with different forms of learning disability on the WISC-V differs considerably. Saklofske et al. (2016) analyzed such differences among three subgroups of students with specific learning disabilities (SLDs). The groups comprised students with an SLD in reading, SLDs in both reading and writing, and an SLD in mathematics. The results revealed that students with an SLD in reading scored significantly lower on all indices than did students without an SLD; students with an SLD in reading scored significantly lower on all indices, except for the visual spatial index and PSI; and students with an SLD in mathematics scored lower on all indices, except for the working memory index and naming speed index. The study revealed unique patterns for each of three SLD subgroups, which indicates that both the primary and ancillary indices of the WISC-V must be considered to ensure a holistic understanding of students with special needs.

Generally, 2e students struggle in at least one academic area and have poorer overall academic achievement compared with gifted students without disabilities (Foley-Nicpon et al., 2011; Lovet & Sparks, 2013). Maddocks (2020) compared academic achievement outcomes between three groups of students (gifted, gifted with learning disability [2e-LD], and average), and demonstrated that 2e-LD students received the same or lower scores on academic achievement subtests related to processing speed compared with average students. However, 2e-LD students received significantly higher scores than did average students on other subtests without a speed component. This finding indicates that if teachers use academic tests with time limits as major references, many 2e students are likely to be overlooked at the referral phase of identification. Using well-designed tests can effectively help teachers uncover strengths hidden by poverty, disability, or cultural diversity (Silverman & Gilman, 2020).

According to the Special Education Act(2019) in Taiwan, for students to be considered gifted and have superior intelligence, their scores on individualized intelligence tests be must higher than the 97th percentile. Some elementary 2e students are not provided with the opportunity to receive gifted services because their weaknesses lead them to have lower full-scale scores, and consequently, they do not meet the criteria for superior intelligence. Therefore, understanding the learning characteristics of 2e students and using expanded and ancillary index scores in assessments of giftedness can help reduce the masking effect during 2e student identification.

### **Using Expanded and Ancillary Index Scores to Identify 2e Students**

Several studies have provided evidence in support of using ancillary index scores for identifying 2e students. Maddocks (2020) used the Woodcock-Johnson IV Tests of Cognitive Abilities to explore differences in cognitive abilities between potentially gifted students with learning disability (i.e., 2e-LD students), gifted, and average students. The scale was developed on the basis of the Cattell-Horn-Carroll theory. The general intellectual ability composite score of the test indicates a student's level of general intelligence. The test has a strong correlation ( $r = .86$ ) with the FSIQ score of the Wechsler Intelligence Scale for Children-Fourth Edition. Maddocks' results revealed that the 2e-LD group had similar scores to those of the average group in short-term working memory, auditory processing, and long-term retrieval. Moreover, the 2e-LD group had higher scores in fluid reasoning and comprehension knowledge. However, the 2e-LD group had a significant deficit in processing speed. The 2e-LD group had significantly lower scores in general intellectual ability and other composite scores, with the exception of comprehension knowledge, than the gifted group had. In addition, the standard deviation for the 2e-LD group's processing speed score was higher than those for the other groups' scores, and the standard deviation for the 2e-LD group's comprehension knowledge score was 1.5 points higher than that for its processing speed score. According to Maddocks (2020), the 2e-LD's disability led them to have lower full-scale scores. In addition, the 2e-LD group was heterogeneous, exhibiting significant internal individual differences. Furthermore, the 2e-LD's disability traits affected their FSIQ and composite scores (e.g., processing speed scores). These findings indicate that educators must select appropriate indices for assessing the strengths and weaknesses of 2e students.

The NAGC (2018) reported that educators must employ a broader, more comprehensive approach to assessing gifted and 2e students that involves consideration of six WISC-V index scores. The scope of assessment could be expanded beyond the traditional FSIQ score if these index scores were considered. According to the NAGC, using only the FSIQ score for identifying giftedness may be disadvantageous for 2e students and may impede efforts toward ensuring that gifted classrooms, programs, and schools are accessible to students with disabilities. Table 1 lists the six indices the NAGC recommends educators use to select students for gifted programs, with students being selected if their score on any of the indices falls within the confidence interval of the

required score for admission. The further one is the quantitative reasoning index, which is a good indicator of mathematical talent.

Table 1

*Six indices for identification of gifted students*

Index Scores	Subtests
(1) The Verbal (Expanded Crystallized) Index (VECI)	SI, VC, IN, CO
(2) The Nonverbal Index (NVI)	BD, MR, CD, FW, VP, PS
(3) The Expanded Fluid Index (EFI)	MR, FW, PC, AR
(4) The General Ability Index (GAI)	BD, SI, MR, VC, FW
(5) The Full-Scale IQ Score (FSIQ)	BD, SI, MR, DS, CD, VC, FW
(6) The Expanded General Ability Index (EGAI)	BD, SI, MR, VC, FW, IN, CO, AR
• The Quantitative Reasoning Index (QRI)	FW, AR

*Note.* SI = Similarities, VC = Vocabulary, IN = Information, CO = Comprehension, BD = Block Design, VP = Visual Puzzles, MR = Matrix Reasoning, PC = Picture Concepts, FW = Figure Weights, AR = Arithmetic, CD = Coding

The Wechsler Intelligence Scale has been widely used in Taiwan to identify the abilities of students with special learning needs. Educators applying and interpreting the WISC-V should consider expanded and ancillary index scores to ensure they gain a more precise understanding of student potential because 2e students may score higher in cognitive domains related to abstract thinking (e.g., verbal comprehension, visual-spatial thinking, and fluid reasoning) and lower in those related to processing skills (e.g., working memory and processing speed) relative to other students. Disabilities prevent 2e students from reaching national standards for giftedness.

### **Using Policymaking to Reduce Equity Gaps**

The Convention on the Rights of Persons with Disabilities (CRPD) promotes and ensures equal rights for all individuals with disabilities in their civil, political, economic, social, and cultural lives. Article 3 of the CRPD emphasizes the importance of respecting differences and ensuring equal opportunities (UNESCO, 2006). To comply with the CRPD and ensure the rights of individuals with disabilities, Taiwan legislated the Act to Implement the Convention on the Rights of Persons with Disabilities in 2014. After the implementation of this act, reducing the equity gap in education became a

key goal of education policy. In 2022, the International Review Committee (IRC) assessed Taiwan's implementation of the CRPD (MOE, 2022). The IRC commended the government and the people of Taiwan on their efforts toward complying with the CRPD and spoke positively about the active participation of organizations for individuals with disabilities in civil society. However, the IRC also identified areas in which Taiwan could improve. For example, neither special nor general educators in Taiwan are well prepared to teach students with diverse abilities, and the concept of reasonable accommodation to minimize exclusion of students with disabilities is not widely known or incorporated in Taiwanese schools. The IRC report recommended that the government expend more effort to ensure that children with disabilities are able to receive integrated support. General education teachers, special education teachers, and education administrators should design programs for universal learning to ensure schools can accommodate students with diverse learning needs and characteristics at all levels of education. The IRC report also stated, in the context of special education in Taiwan, several rules and regulations have been established to support identification of, teaching of, and counseling for students with special needs. Therefore, future policy should focus on integrating and improving the efficiency of different educational systems while adhering to these rules and regulations.

In Taiwan, one of the key challenges encountered by 2e students is that they must meet the criteria for classification as a gifted student to qualify to receive gifted education services. However, the strengths of 2e students are often overshadowed by their disabilities, and their unequal internal abilities lead them to have lower full-scale scores on intelligence tests. How educators can remove the barriers that affect the performance of 2e students and ensure fairness in intelligence tests has become a critical concern in special education. An effective support system for 2e students would be one that eliminates opportunity gaps and ensures equality in learning opportunities (Tsai et al., 2021). To achieve such a system, governmental assistance in the form of policymaking is required; such assistance would reduce the number of limitations during the identification process.

### **Policymaking Model**

Public policy is a proposed course of action for a person, group, or government within a given environment with opportunities and obstacles that

the policy was proposed to leverage and overcome, respectively, to realize an objective or purpose (Friedrich & Mason, 1941). Anderson (2003) defined policy as a relatively stable, purposive course of action followed by an actor or set of actors to address a problem or matter of concern. According to Anderson (2003), public policy operations can be divided into five stages: 1. Problem identification and agenda setting: policymakers focus on how problems can be addressed through public policy. 2. Formulation: Policymakers create, identify, or borrow courses of action, with each potential course of action referred to as an alternative or option. 3. Adoption: Policymakers decide which proposed alternative will be used to handle a problem or whether any proposed alternative will be used. 4. Implementation: Policymakers focus on what action must be taken to implement or apply selected policy alternatives. 5. Evaluation: Action is taken to determine what an implemented policy is accomplishing, whether the policy is achieving its goals, and whether the policy has additional effects. Within this simple framework, the formation and implementation of policies are considered to be political because they involve conflict and struggle among individuals and groups and between officials and agencies with conflicting ideas on, interests in, values related to, and information on public policy.

Policymaking involves groups of stakeholders, and communication is required throughout the process. Driessen et al. developed an interactive policymaking model (2001). Interactive policymaking is a process in which multiple parties play an active role and jointly arrive at a decision. The model comprises six stages: exploration, initiative, common perception, joint problem-solving, decision-making, implementation, and evaluation. The model was proposed to facilitate implementation and improve the effectiveness of policy. In policymaking, the formulation and implementation of policy should be network-oriented and interactive to ensure policies effectively contribute to the resolution of complex social problems. Driessen et al. (2001) established four conditions for effective policymaking: 1. Interactive policymaking can only be effective at determining how social issues should be addressed if the major dependency relationships between public and private actors are considered. 2. Participating public and private parties must be willing to negotiate with each other. 3. Interactive policymaking should not be conducted according to a standard procedure. 4. Different means of implementation should be considered in interactive policy processes.

Linder and Peters (1987) argued that policymaking can be broadly

classified into top-down and bottom-up approaches. The top-down approach to policymaking has a focus on management; the government or decision-maker identifies a problem and wishes to take action to solve it. To do so, they may invite relevant scholars, experts, teachers, and parents to provide opinions and subsequently form an implementation strategy. In the bottom-up approach, also known as backward mapping, decisions are made at the lowest level of an organization. Such policies are often formulated through negotiation or bargaining; therefore, they are often more feasible and compatible than those formulated using a top-down approach.

Both forms of policymaking have disadvantages: policies formulated using the top-down approach are often difficult to implement, and those formulated using the bottom-up approach may not have been well designed (Hudson et al., 2019; Linder & Peters, 1987). For expanded and ancillary index scores to be used in the process of selecting students for gifted programs, policy support is required, and communication must be initiated among administrators, professionals, and teachers. The opportunity gaps for 2e students can be narrowed through collaborative efforts toward developing awareness and knowledge of twice-exceptionality from teachers and governments. The present study investigated how policies can be formulated through communication with the MOE, how teachers' understanding of 2e students can be improved by highlighting the characteristics and needs of 2e students, and how researchers can cooperate with special education experts and scholars and test constructs through coordination meetings. Furthermore, the present study determined that in the process of identifying gifted students, teachers should use four additional subscales (that is, use a total of six auxiliary indices) for 2e students when administering the WISC-V.

## **Research Methods**

### **Participants**

A lack of understanding of the characteristics of 2e students and inflexibility in identification procedures are key barriers to the identification and education of such students. To standardize the use of the expanded and ancillary indices of the WISC-V for identifying 2e students in elementary schools, discussions based on administrative concerns, theory, and practice must be held to obtain



empirical data and to arrive at a consensus. The participants in this study were school administrators, special education experts, a test constructor, teachers, and parents. Participant information is presented in Table 2.

Table 2

*Number and backgrounds of participants*

Year	Meeting/Survey	Backgrounds of Participants	<i>N</i>
2020	Online survey	Special education service contact person of junior high or elementary school	896
2022	Dynamic assessment workshop 1	Psychological assessment personnel recommended by the local education bureau	44
	Dynamic assessment workshop 2	Psychological assessment personnel recommended by the local education bureau	33
	Dynamic assessment workshop 1	Psychological assessment personnel recommended by the local education bureau	44
	Dynamic assessment workshop 2	Psychological assessment personnel recommended by the local education bureau	33
	Seminar on the cases of identifying and nurturing 2e students (teacher session)	School directors, regular teachers, directors of special education departments, high school and elementary school special and gifted education teachers	155
	Workshop on the cases of identifying and nurturing 2e students (parents and teacher session)	Parents (mainly), regular teachers, directors of special education departments, high school and elementary school special and gifted education teachers	134
	Seminar regarding implementation of program for identifying and nurturing 2e students (northern region)	Division chief of MOE, school directors, directors of special education departments, high school and elementary school special and gifted education teachers, executive officers of special education divisions of local education bureaus	62
Seminar regarding implementation of program for identifying and nurturing 2e students (central region)	Division chief of MOE, school directors, directors of special education departments, high school and elementary school special and gifted education teachers, executive officers of special education divisions of local education bureaus	40	

Year	Meeting/Survey	Backgrounds of Participants	<i>N</i>
	Seminar regarding implementation of program for identifying and nurturing 2e students (southern region)	Division chief of MOE, school directors, directors of special education departments, high school and elementary school special and gifted education teachers, executive officers of special education divisions of local education bureaus	32
2022	Meeting for consultation on constructing the identification of 2e students	Division chief of MOE, special education professors, directors of university and local government special education centers	20
	Consultation meeting with experts regarding identifying 2e students (1)	Division chief of MOE, special education professors, directors of university special education centers	16
	Consultation meeting with experts regarding identification of 2e students (2)	Division chief of MOE, special education professors, directors of university special education centers	15
	Communication meeting with Diagnosis and Placement Counseling Committee (1)	Deputy director/division chief of MOE; administrator/contact person of local special education bureau; experts, professors, and psychological assessment personnel recommended by local education bureaus; directors of local government gifted education centers	58
2023	Study regarding using WISC-V indices for identifying giftedness in elementary school students	87 students with disability or cultural differences who passed the preliminary selection assessment; 87 elementary school students with typical development	164
	Consultation meeting with experts regarding expanded and ancillary index scores of WISC-V	Experts, special education professors, constructor of Taiwanese version of the WISC-V	18
	Communication meeting with Diagnosis and Placement Counseling Committee (2)	Division chief of MOE, administrator/contact person of local special education bureau, special education professors, directors of local government gifted and special education centers	46

### Polymaking Method

In this study, the interactive policymaking model developed by Driessen et al. (2001) was used for policy communication and implementation. The model is

employed to facilitate policy implementation and improve policy effectiveness. In the present study, the model was used for policy revision and validation and to assist with incorporating the expanded and adapted indices of the WISC-V into processes for identifying 2e students.

## **Action Steps and Procedure**

### ***Exploration and Initiative***

1. The first author notified the Science Education Consulting Committee (SECC) of the MOE of the fact that 2e students exist and that learning gaps between 2e and other students exist. The SECC made a resolution to improve the process of identifying and nurturing the talents of 2e students (MOE, SECC minutes, September 3, 2019).
2. The K-12 Education Administration of the MOE (June 17, 2019) announced implementation points for improving the process for identifying 2e students and nurturing the talents of such students. The program had a focus on “strengthening,” “discovering,” and “counseling,” with the following goals: (1)develop an identification and placement model for 2e students, (2)provide training and professional development opportunities for special education teachers and related service personnel that are focused on accommodating the learning needs of 2e students, and (3)develop an effective support system for 2e students.
3. The first author advocated to relax the criteria for classifying children as 2e students in the public hearings regarding revision of the Special Education Act (2023). After discussions during these hearings, the MOE adjusted the act and agreed to change the assessment items that are considered in identifying gifted students with disabilities, with cultural differences, and in remote areas. This amendment enabled the Diagnosis and Placement Counseling Committee of students with special needs to select appropriate test items and subscales for assessing student ability and intelligence.

### ***Common Perception through Survey Research***

The present study investigated the amount and types of 2e students in Taiwan and gained insights into how these students are identified and the challenges encountered by schools in identifying and teaching these students. Data were collected using an online questionnaire. The questionnaire was distributed to

special education service contact people in junior high and elementary schools. The questionnaire was sent to schools in 22 cities and counties, and responses were obtained from 896 schools. The responses were analyzed, and the following findings were obtained: 1. Among the 896 schools, 179 had 2e students; 2. a total of 277 2e students were identified; and 3. challenges in identifying 2e students were related to a lack of understanding among teachers and parents regarding the characteristics of such students and a lack of clear systems for identifying such students. The result also showed that the relevant authorities must provide financial support to schools, adjust identification systems, offer guidelines for identification, and host teacher training and parenting education seminars and workshops.

On the basis of the aforementioned findings, the research team produced public briefings, booklets, and books and conducted teacher workshops, administrative staff meetings, parent workshops, dynamic assessment workshops for psychological assessment personnel, and international forums.

In 2022, the present study took several actions to make it easier to identify 2e students. Two workshops were held that were focused on developing a dynamic assessment method; 77 psychological assessment personnel who were recommended by the local governments of 22 cities and counties attended the workshop and submitted case reports regarding using dynamic assessments for identifying 2e learners. Two meetings were held to discuss the case examples of assessments used to identify and nurture 2e student talents. In addition, a seminar was organized for 155 teachers, and a workshop was held for 134 teachers and parents. Furthermore, three seminars were held that focused on the implementation of programs for identifying and nurturing 2e students; 134 administrators of schools with special education programs, special and gifted education teachers, and local government administrators in education departments from the northern ( $n = 62$ ), central ( $n = 40$ ), and southern ( $n = 32$ ) parts of Taiwan attended the seminars.

### ***Joint Problem-solving and Decision-making***

In 2020-2022, perspectives from experts in the fields of gifted education and disability and from the constructor of the Taiwanese version of the WISC-V were obtained. This process was used to identify the problems underlying the low occurrence rate of 2e students in Taiwan, discuss the effectiveness and importance of nurturing talent in such students, identify strategies for increasing

the occurrence rate of 2e students, and discuss the feasibility of using the expanded and ancillary index scores of the WISC-V to identify such students. Diagnosis and Placement Counseling Committee (DPCC) representatives in the area of special education who were recommended by the local governments of 22 cities and counties met and had discussions using the expanded and ancillary index scores of the WISC-V in Taiwan.

### ***Implementation and Evaluation Stage***

The six expanded and ancillary index scores of the WISC-V were used to identify 2e students with different kinds of disabilities. The constructor of the Taiwanese version of the WISC-V established equivalent charts for the six index scores for identifying 2e students. Taipei City was the first city to use the expanded and ancillary index scores to assess the intelligence of elementary school students. Between January 16 and January 18, 2023, the intelligence of 87 students with disabilities or cultural differences and 87 regular students was assessed.

The effectiveness of using the six expanded and ancillary index scores to identify 2e students with different kinds of disability was evaluated. A meeting was held to discuss the results of using these scores to assess intelligence. In the meeting, additional suggestions were made for identifying 2e students. Administrators of the MOE and local special education bureaus, special education representatives from the DPCC from 22 cities and counties, and directors of gifted and special education centers operated by local governments were invited to review the implementation and feasibility of using the expanded and ancillary index scores. The DPCC representatives reached a consensus on adopting the model, and the model will be implemented nationwide.

### ***Research Instruments***

The research instruments used in this study include the following:

1. ***Public Briefing.*** To deliver a consistent promotional message of nurturing 2e students to teachers and parents, the researchers created a presentation and provided it to special education educators and administrators as a reference for subsequent seminars and workshops.
2. ***Book.*** A book was created that had information on how to identify and provide guidance to 2e students. The book included the teaching strategies of

2e students and examples of successful cases of 2e students being assisted in developing their potential. The book was published by the K-12 Education Administration of the MOE as an on-site reference for teachers to improve their confidence in assisting and guiding 2e students (Kuo & Chen, 2022).

3. ***Conference and Workshop Booklets.*** Booklets were provided at the study conferences and workshops that introduced related concepts, case examples, and information on how to identify and provide guidance to 2e students.
4. ***Questionnaire.*** A questionnaire was developed and used to obtain background information, the number and type of disability of potential 2e students in the 2020 academic year (fall semester), information regarding school support systems, and information regarding the challenges and needs associated with working with 2e students (Chen et al., 2023).
5. ***Presentation for Test Administrators.*** The first author created a presentation to introduce the concept of auxiliary indexes of the WISC for identifying 2e students to test administrators in Taipei City.

## **Data Analysis**

In the policymaking process of this study, the protocol method was used to record the minutes of different meetings, and the presentation was revised after each meeting. The final version of the briefing presentation was used to train psychometric staff. The protocol method is an original draft, minute, or record of a document or transaction. The preliminary memorandum often formulated and was signed by diplomatic negotiators as a basis for a final convention or treaty; records and minutes of a diplomatic conference or meetings that indicated that agreements had officially been arrived at were passed by the negotiators. In this study, the notes of meetings held on May 18, May 19, May 24, May 31, August 18, August 23, October 7, and December 7 in 2022 and on April 27 and June 1 in 2023 were collected and used to revise the briefings. Key resolutions were coded for the following information: year, month, date, meeting type, title of individual who proposed it, the initial letter of the last name of the individual who proposed it, and a 2-digit serial number. For example, 20220518-DPCC-Professor-W01 referred to the resolution proposed by Professor Wang who attended the DPCC meeting on May 18, 2023 (See Table 3). The data from the meeting decisions were coded and organized by year, month, date, meeting, and meeting minutes (e.g., 20230427-consultation-meetingminutes).

Table 3

*Coding format of meeting notes*

Date	Meeting	Title	Initial letter of last name and serial number
20220518 etc	communication consultation DPCC psychometric administer	administrator professor teacher test administer	W01

## Results and Discussion

### Successful Policy Negotiation Leading to a Milestone for Adjusting Regulations

Policymaking is the most crucial form of support for the implementation of new actions. Policy support is required to minimize limitations during the process of modifying assessment items, assessment tools, and assessment procedures for identifying 2e students. Legislation, policy, and financial support at the national level can lead the action on identifying more 2e students, and facilitate teachers to accommodate their teaching strategies for meeting the needs of 2e students (O' Tuel, 1994; Roberts et al., 2015). The first author successfully obtained approval from the MOE to investigate the problems with nurturing the talents of 2e students, laying the foundation for new policy and initiating action to reduce the gap in educational opportunities for 2e students in Taiwan (MOE, SECC minutes, September 3, 2019). The K-12 Education Administration's announcement (June 17, 2019) of its plan to promote identification and counseling programs for 2e students has provided a robust support system for the promotion of this policy. In addition, when Taiwan's special education law was being revised, the efforts of special educators to negotiate with the MOE to adjust the article and improve the flexibility of assessments for gifted students with disabilities or cultural differences provided a strong basis for identifying and nurturing the talents of 2e students; the Legislative Yuan passed Provision 46 on May 29, 2023, and the Special Education Act was passed to ensure local authorities and schools improve their identification of and provision of guidance for students with disabilities; students located in remote areas or islands; and

students from certain economic, cultural, or ethnic backgrounds. The authorities should also adjust the assessment items, tools, and procedures for identification of such students as necessary.

### **Educational Gaps for Urban versus Rural Schools and Schools with Different Special Education Resources**

According to the results of the present study's online survey, additional resources must be allocated for gifted education services for the talents of 2e students to be effectively identified and nurtured. In addition, the results indicated clear opportunity gaps between schools in urban versus rural settings and between schools with only special education versus schools with both gifted and special education. Most respondents reported that gifted education teachers must participate in developing students' talents, a clear process must be developed for identifying 2e students, and an effective support system with manpower and financial assistance provided by the government must be established to close the aforementioned opportunity gaps and meet the needs of both 2e students and teachers (Chen et al., 2023).

### **Multiple Advocacy Shifting Focus to Strengths of 2e Students**

In the policy promotion stage of this study, public briefings, booklets, books, and various types of meetings and workshops proved helpful in improving awareness of 2e students among administrators, teachers, and parents. They also led more counties, cities, and teachers to contribute to the effort toward improving identification of 2e students and cultivation of their talents. Responses from the participants of these meetings and workshops revealed that the teachers considered the workshops focused on dynamic assessment to be helpful; all teachers who attended reported that they benefited from these workshops and wished to share the information regarding identifying and planning to accommodate 2e students and regarding nurturing such students' talents with their colleagues. The participating teachers reported, "I am willing to try applying these concepts and skills in appraisal assessments or teaching guidance" and "In the future, I will actively participate in related studies to improve my self-knowledge." In addition, the participating educators offered the following feedback, "Is using the expanded and ancillary index scores of the WISC-V as a reference for identifying 2e students being considered?" and "Considering students' dynamic assessment performance in conjunction with the index scores of the WISC-V might help with identification of students with



different traits.”

Half of the teachers who participated in the seminars regarding the program for identifying 2e students and nurturing their talent reported, “I will apply for the Discover and Nurture Twice-Exceptionality (DNTE) program next academic year” (Table 4). Some of the teachers participating in the seminars shared suggestions and feedback regarding identification of 2e students, stating “The major obstacles to identifying 2e students in Taiwan are psychological assessment personnel having insufficient knowledge regarding these students and Taiwan having a dual-track system for identifying students with special learning needs”; “What are the criteria established by the DPCC for identifying 2e students? Is such identification solely based on individualized intelligence tests?”; and “I would like to understand whether implementation is consistent across counties and cities in terms of the methods, criteria, and implementation processes for assessing potential among students who have already been identified as having a disability.”

Of the attendees of the online seminar, 87%-97% reported that the seminars enhanced their knowledge of the implementation plan for identifying 2e students and nurturing their talent and enabled them to develop the skills and knowledge required to identify and teach such students.

Table 4

*Feedback from participants attending seminars regarding program for identifying and nurturing 2e students (N = 134)*

Area	Number Of attendants	I have 2e learners in my class		I knew the DNTE program before this seminar		I will apply for the DNTE program next academic year	
		N	Percentage	N	Percentage	N	Percentage
Northern	62	44	71.0	43	69.4	33	53.2
Central	40	21	52.5	24	60.0	18	45.0
Southern	32	20	62.5	22	68.8	19	59.4
Total	134	85	63.4	89	66.4	70	52.2

*Note.* DNTE: Discover and Nurture Twice-Exceptionality

After the online seminar, a workshop was organized for parents in which they were provided with information regarding 2e students and difficulties that may arise when nurturing their talent. Although the workshop was primarily designed for parents, regular teachers and special and gifted education teachers were also invited to participate; 52.1% of the participants in the workshop were parents. In addition, among the participating teachers, 16.2% taught 2e children. At the end of the workshop, the participants were asked to complete a feedback questionnaire. Nearly all of the teachers and parents reported they were very satisfied with the workshop, in which they were presented with a case example of nurturing 2e students; the mean satisfaction scores for the workshop were 4.5-4.9 (on a 5-point scale). The parents of 2e students who attended the workshop reported, “It is very important for teachers to proactively identify 2e students’ talents and disabilities”; “Because the masking effect can result in interactions between giftedness and disability, I hope that the Special Education Act will be amended so that a FSIQ score of 130 alone will not be considered the criterion for identifying gifted students”; “I believe that students with autism have their own strengths and talents. Preschool children should be provided with opportunities to receive gifted education services”; and “My child has talent but does not receive gifted education services because he does not meet the current rigid criteria for classification as gifted.” In summary, workshops can enable teachers and parents to understand the characteristics of 2e students and provide appropriate support for such students.

### **Adjustment to Inflexible Identification Process Assisted by Effective Communication**

The present authors collected perspectives from experts in the fields of gifted education and disabilities and from the constructor of the Taiwanese version of the WISC-V. All invited government officials, academics, and teachers agreed on the feasibility of using the expanded and ancillary index scores of the WISC-V to identify elementary students with twice-exceptionality. The special education representatives from the DPCCs of 22 cities and counties identified practical concerns related to using the expanded and ancillary index scores; their major concerns included the following:

*Students with disabilities may struggle to meet the criteria of the initial process for screening for giftedness; is it possible for students who have been identified as having a disability by a medical institution to complete the final session of the individual intelligence test?*

(20220518-consultation-Professor-H01)

*The QRI only includes two subscales. I suggest it not be used as the only tool for identifying mathematically and scientifically talented students.*

(20220518-communication-Professor-C01)

*Will the expanded and ancillary index scores of the WISC-V be used to identify verbally talented junior or senior high school 2e students?*

(20220818-consultation-Professor-C02)

*How can the expanded and ancillary index scores of the WISC-V be used to identify students with different disabilities? Should we provide teachers and psychometric administrators with a set of guidelines?*

(20220818-consultation-Professor-Y01; 20220818-consultation-Professor-C03)

*It is important to identify both the strengths and weaknesses of students with special needs. Therefore, all students should complete the first 10 subscales of the WISC-V, and they should then also complete the subtests required for giftedness selection.*

(20220818-consultation-Professor-C01)

*Suspected 2e students can get the most selectivity index scores by taking four additional tests. All students should be required to take 10+4 subtests to ensure effective assessment of their strengths and weaknesses. This [requiring all students to take these subtests] would make the test easier for test administrators to handle because they would not need to consider how many subtests to administer.*

(20220818-consultation-Professor-H01)

*I suggest using the expanded and ancillary index scores of the WISC-V to assess intelligence only for students with special needs and not to assess intelligence in regular students.*

(20220823-consultation-Professor-H01)

*There are too many subscales in the 10+4 test, which may lead students with disabilities to feel fatigue; the test should be administered in two parts.*

(20220823-consultation-test administrators-H02)

The major concerns of the attendees of the meetings regarding the use of the expanded and ancillary index scores of the WISC-V to measure the intelligence of elementary gifted students were considered, and the following guidelines were developed:

1. Students identified as having a disability by a medical institution will be allowed to complete final individual intelligence tests.
2. The QRI will not be the only tool used to identify mathematically and scientifically talented students.
3. The expanded and ancillary index scores of the WISC-V will be used to identify 2e students only at the elementary school level and not at other academic levels.
4. All students will complete the first 10 subtests of the WISC-V in order and will then complete four additional subtests. This will ensure that teachers obtain a comprehensive understanding of both the strengths and weaknesses of 2e students.
5. The expanded and ancillary index scores of the WISC-V will only be used to measure intelligence in students with special needs; they will not be used to measure intelligence in regular students.
6. To avoid the fatigue of completing 14 subtests, the test will be administered in two parts.
7. The research team will develop a set of guidelines for teachers and psychometric administrators that describe in detail how the expanded and ancillary index scores of the WISC-V can be used to identify gifted students with different disabilities.

8. The equivalent charts of six expanded and ancillary index scores and the detailed practice will be provided to schools through a research paper published in 2023.

### **Preliminary Findings Regarding Using WISC-V Indices for Identifying Giftedness in Elementary School Students**

In December 2022, the present authors developed a model for using six expanded and ancillary index scores to identify 2e students with different types of disability. The constructor of the Taiwanese version of the WISC-V assisted by establishing equivalent scores for the six indices for identifying 2e students. In Taipei City, the expanded and ancillary index scores of 87 students with disabilities or cultural differences and 87 regular students were assessed, with the four added tests being administered in January 2023. All administrators attended a test administration briefing, with 30 teachers (administrators of the WISC-V) administering the assessment.

In 2022, Taipei City had a total of 4,869 regular students, 43 students from low-income families, 5 new resident students, 26 Aboriginal students, and 199 students with disabilities who registered for a general intelligence and giftedness assessment in elementary schools. Of these children, 567 regular students (0.116%), 8 students from low-income families (0.186%), 1 new resident student (0.200%), 2 Aboriginal students (0.076%), and 33 students with disabilities (0.165%) passed the preliminary selection. As indicated by the aforementioned data, the overall number of students recommended for assessment was small. The percentage of students with disabilities that passed the preliminary part of the assessment was higher than that of regular students. Therefore, the low occurrence rate of disadvantaged students might be due to few students being identified during the referral stage.

As detailed in Kuo et al. (2023), the students who passed the preliminary selection were divided into three groups: regular students (Group A,  $n = 83$ ); students with disabilities (Group B,  $n = 51$ ); and students with socioeconomic disadvantages or cultural differences (Group C,  $n = 28$ ), with Group C including low-income students, new resident students, and Aboriginal students. Group A was used as a comparison group. The present study's comparison of the three groups revealed the following.

1. For Group A, if only the main criterion of FSIQ score  $\geq 128$  were used, 45 (54%) regular students would be considered gifted; if the criterion of a score

of  $\geq 128$  on any of the six indices of the WISC-V were used, 64 (77%) regular students would be considered gifted.

2. For Group B, if only the main criterion of FSIQ score  $\geq 128$  were used, 26 (51%) students with disabilities would be considered gifted; if the criterion of a score of  $\geq 128$  on any of the six indices of the WISC-V were used, 37 (73%) students with disabilities would be considered gifted.
3. For Group C, if only the main criterion of FSIQ score  $\geq 128$  were used, 11 (39%) students with socioeconomic disadvantages or cultural differences would be considered gifted; if the criterion of a score of  $\geq 128$  on any of the six indices of the WISC-V were used, 17 (61%) students with socioeconomic disadvantages or cultural differences would be considered gifted.

When only the main criterion of FSIQ score  $\geq 128$  was used, the pass rates were 39%-54% in the three groups. When the criterion of a score of  $\geq 128$  on any of the six indices of the WISC-V was used, the pass rate was 22%-23% higher than it was when only the main criterion was applied, with the increase in the pass rate being approximately the same across the groups (Kuo et al., 2023). More detailed information regarding the implementation of and results for these criteria are provided in Kuo et al. (2023).

### **Evaluation of Effect**

The aforementioned test results were presented in two meetings: a meeting of special educators that was held on April 27, 2023, and a meeting of special education representatives from the DPCC from 22 cities and counties that was held on June 1, 2023. In these meetings, the special educators and representatives from the DPCC discussed whether the six index scores of the WISC-V should be used to identify 2e and gifted culturally disadvantaged students or should be used to identify all types of gifted students.

### ***The Special Educators Provided the Following Suggestions***

1. The criterion of achieving a score of  $\geq 128$  on any of the six expanded and ancillary indices is more appropriate for identifying giftedness than is the criterion of FSIQ score  $\geq 128$ . Culturally diverse and 2e students exhibit considerable within-group differences; therefore, they must be provided with assistance through special education to achieve their potential. The Special Education Act (2023) currently provides a clear legal basis for adjusting

assessment items of 2e students, and the model for promoting the use of the six indices for identifying gifted students is based on research. Although the pass rates when all six indices were considered were slightly higher than were those when only FSIQ score was considered, the number of students who can be considered gifted remains small. Therefore, there is an active and optimistic effort to promote adopting six indices in the identification of all the gifted.

2. To avoid excluding students with potential, the NAGC statement should be considered in policymaking. In addition, during the identification process of students with special needs, qualifications of the gifted should align with the regulations of the Special Education Act.
3. Members of the DPCC should comprehensively assess and implement the new criteria for identifying giftedness.
4. According to the Special Education Act, the additional test items should only be used to identify giftedness in students with disabilities and with socioeconomic disadvantages or cultural differences.
5. Using 14 rather than 10 subtests is likely to increase the burden on test administrators. Therefore, they should receive additional support. In addition, because increasing the number of subtests, and therefore extending the testing time, can increase student fatigue, administrators should consider administering the test in multiple parts. (20230427-consultation-meetingminutes)

### ***The DPCC Representatives Provided the Following Suggestions***

1. Guidelines must be developed for using the expanded and ancillary index scores of the WISC-V to identify 2e students or gifted students with socioeconomic disadvantages or cultural differences.
2. Other assessment tools in addition to the WISC-V should be used to develop guidelines for flexibly adjusting assessment items to adjust to changing needs related to identifying 2e students in the future.
3. Often, 2e students and gifted students with socioeconomic disadvantages or cultural differences do not meet the criteria of preliminary tests for giftedness. Methods for adjusting assessments during the initial selection stage of giftedness identification should be identified.

4. The Indigenous Special Education Division of the MOE should formally notify the education authorities in all counties and cities and provide them with guidance for using the expanded and ancillary index scores of the WISC-V to identify 2e students and gifted students with socioeconomic disadvantages or cultural differences. Such action would ensure that all counties and cities employ a consistent approach to identification. (20230601-DPCC-meetingminutes)

The feedback and suggestions from the meeting attendees indicated that the special educators and DPCC representatives accepted the proposal to use the six expanded and ancillary index scores of the WISC-V for identifying 2e elementary school students in Taiwan.

## Conclusion

This study adopted the interactive policymaking model, which enabled the researchers to effectively communicate the concept of developing 2e students' strengths and talents to education administrators, special educators, school teachers, and parents and facilitated making adjustments to the identification process. Because the authors obtained the support of the MOE, the K-12 Education Administration was effectively persuaded to modify the rigid process used to identify giftedness. This reveals that legislation and support from education administrations at the national level for 2e students can lead to action that can enable teachers to accommodate and develop plans to meet the needs of students (O'Tuel, 1994; Roberts et al., 2015).

Research indicates that 2e students easily experience frustration, low self-esteem, and negative perfectionism and often experience poor social relationships and alienation when they fail to obtain affirmation from their teachers and peers (Moon & Reis, 2004). However, if their talents are appropriately developed, they develop self-confidence, experience greater learning motivation, and have more stable personality development. Therefore, researchers must explore 2e students' strengths and provide opportunities for talent development to ensure their subsequent success.

Using the expanded and ancillary index scores of the WISC-V can enable teachers to identify giftedness in 2e students, and the profiles obtained using the indices can be used to design individualized educational plans and guide



students' cognitive and emotional development, which can considerably improve 2e students' achievement and social adaptation. Using such scales can enable educators to provide students with equal educational opportunities and assist students in growing without the hinderances of obstacles or cultural factors. It brings hope to parents and motivates students to achieve self-realization. Providing equal educational opportunities through strong policy support and active application can provide 2e students in Taiwan with more opportunities that can improve their future.

### **Suggestions and Limitation**

In the present study regarding policymaking and policy implementation, the researchers discovered that the low amount of disadvantaged students might be related to limitations in the referral stage, during which students were often not recommended for assessment and therefore were not identified as gifted, which led to such students losing the opportunity to develop their talents. In the future, in the present authors' work related to constructing guidelines for using the expanded and ancillary index scores of the WISC-V to identify 2e students or gifted students with socioeconomic disadvantages or cultural differences, additional focus should be placed on the following:

1. Improving identification and counseling for disadvantaged students, which is crucial to increasing the likelihood of mainstream teachers referring 2e and culturally disadvantaged students for giftedness assessments;
2. Collaborating with other test developers to explore the possibility of providing more flexible assessment tools for identifying 2e and culturally disadvantaged students; and
3. Encouraging teachers to apply for grants from the K-12 Education Administration of the MOE to provide support for 2e students in the form of enriched instructional services to assist with developing the strengths and talents of these students.

Taipei City has been piloting the policy of using a flexible assessment tool for identifying 2e and culturally disadvantaged students to understand their pass rates with respect to giftedness identification. Based on the limited participation from cities and counties, the present study results should be interpreted and applied with caution. If additional counties and cities adopt the expanded

and ancillary index scores of the WISC-V for the identification of giftedness, additional data can be obtained on students of diverse socioeconomic and cultural backgrounds.

### **Acknowledgements**

We sincerely appreciate the financial support from the K-12 Education Administration of the Ministry of Education.

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