



Bricolage and the Evolution of Giftedness and Talent in Taiwan

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Abstract

Discourse in Taiwan regarding talent development reflects anxiety, both from a government seeking to increase economic competitiveness and a populous striving for individual success amidst uncertainty. Identification and development of giftedness and talent within the mainstream education system has predominantly focussed on academic and intellectual giftedness and talent in select areas of the arts and sports, overlooking other potential. At the same time, efforts to reform Taiwan's education, which nominally aspire to move away from examination-based education and towards a more inclusive appreciation of diverse abilities, have been met with controversy and resulted, paradoxically, in increased pressure for students. To help understand this paradox and further illuminate processes for social change, a sociocultural understanding of how Taiwanese society defines success and identifies and develops giftedness and talent is developed in this chapter. We argue that education in Taiwan is influenced by both meritocracy and a preference for harmonising rather than strictly revolutionary creativity and further posit such harmonising creative work a bricolage. We then discuss how these characteristics have shaped the evolution of GATE in Taiwan, both in mainstream education reform and GATE development, and in informal bricolage work on the margins, focussing in part on the role of competitions and contests in GATE and research. Finally, we close with a discussion of the implications of these findings and conceptual approach for understanding the evolution of GATE in Taiwan and other Confucian-influenced societies, along with methodological implications. Responding to calls to employ diverse methods of inquiry and simultaneously think methodologically and philosophically in education research, this chapter is itself a bricolage and thus affords a novel perspective on processes relevant to the evolution of giftedness and talent in Taiwan, as well as on the work of educational research in general.

Keywords

Competitions · Bricolage · Meritocracy · Talent · Education reform

The aims in this chapter are to:

1. develop a sociocultural understanding of giftedness and talent in Taiwan, informed by preferences for meritocracy and harmonising creativity
2. demonstrate how these preferences have shaped the evolution of giftedness and talent education and education reform
3. employ the concept of bricolage to illuminate processes of change overlooked within mainstream academic research
4. explain the rise of educational competitions and contests as an example of bricolage that satisfies both the logic of meritocracy and an understanding of social change afforded by harmonising creativity

5. argue for both the importance of context-sensitive, culturally informed interpretations of educational phenomena and the adoption of diverse methodological practices in educational research

Introduction: Mapping Giftedness and Talent Education in Taiwan

Friction at the Margins

At age 15, Zhou Yi-xun is working in a paid internship position with an app development company in Taipei, where he moved on his own across the island from Kaohsiung. He obtained this position only after receiving attention for performance in competitions. In a news segment for the Public Television System's (2017) Youth News series on Makers, he is praised by his supervisor as a natural problem solver, more so than most recent university engineering graduates. Zhou regularly participates in international innovation competitions, relishing the chance to work with talented individuals from around the world; experiences, he says, offer global perspectives and new ways of thinking. He dreams of being an entrepreneur and wants to develop an international app platform that will benefit and connect would-be entrepreneurs. Fresh from a 2-month program in the 'Maker Kingdom' of Silicon Valley, he is sure of his talent and potential. Specifically, he would like to move to China, which he calls 'a new paradise for entrepreneurs'.

Zhou's parents worry for him. His early interest in coding and web design, pursued late into nights, caused his grades to slip. Both parents and teachers advised him to focus on his classes instead. His parents cite his intelligence and decent grades and express their wish that he would graduate from a good high school and study at National Taiwan University (NTU, Taiwan's top-ranked school). They worry about his future, viewing a university degree a necessity for work and a middle school education a significant detriment. They are concerned also for his safety as, young and alone, he plots a trajectory from Kaohsiung to Taipei and then China.

Presented in a news segment as a young, ambitious 'Maker' with great potential, Zhou ends the piece with an admonishment for other students: please, do not follow my footsteps. He says he has faced discrimination while walking this unconventional road and believes many judge him wasteful for not studying high school.

Anxiety and Talent Cultivation in Taiwan

Taiwanese today exhibit anxiety over a perceived talent crisis. Taiwan is burdened with a sluggish economy, stagnant wages, a declining birth rate and rising social inequality (Lee, 2008) in the face of the complex challenges of dynamic global industrial competition, longstanding geopolitical insecurity and pressing global issues, from climate change to technological development. Concerned government

policy discourse regarding a need to retain local talent and attract foreign talent (e.g. Executive Yuan, 2017), develop alternative education options (K–12 Education Administration, 2015) and cultivate creativity and entrepreneurship (Ministry of Education, 2003) all reflect this anxiety.

Not wholly unfounded, this shortage of talent is supported by international research. For example, the Oxford Economics (2012) ‘Global Talent 2021’ report (2012) predicts that, of 46 countries in the modelling exercise, Taiwan will face the most acute talent shortage by 2021. Expressing this concern at an Executive Yuan news conference in November 2017, Prime Minister William Lai identified talent as one of the nation’s ‘five industrial shortages’, proposing immigration of talented workers from New Southbound Policy nations as a key solution (Lee, 2017). To this end, the National Development Council (2016) announced a series of reforms to attract migrants, ranging from simplifying visa, employment and residency procedures to offering finance, tax and insurance incentives. These policies directly equate ‘high-level talent’ with the overall ‘competitiveness of a country’.

This issue is exacerbated by a trend that has emerged in recent years of young Taiwanese moving to China for work (Z.-L. Chen, 2017). Policies in China seek to exploit both a dearth of job opportunities and low wages, such as financial incentives for young Taiwanese entrepreneurs to develop in Fujian (Z.-L. Chen, 2017) and compensation from individual universities double those available to academics at domestic schools (Yang, 2016). Some academics and members of the public view targeted relaxation of employment rules and other financial incentives for Taiwanese as a nefarious effort to subvert Taiwanese politics and the local economy (Chung & Chin, 2017). Taiwan’s status is precarious. China maintains a constant military threat—as shown in military deployment planning (Easton, 2017) and a recent increase in air force encirclement drills (Reuters, 2017)—has increased efforts to persuade Taiwan’s diplomatic allies to switch recognition (Gao, 2018) and pursues economic and cultural integration as annexation strategies (Rowen, 2016). Within this context, anxiety about the perceived leveraging of promised youth job security for political aims is understandable.

Reflecting both this subtext of anxiety and the logic of human capital development, which seeks to translate education into productive capacity, the development of giftedness and talent has long been a core motivation of education reform. Both historical (Morris, 1996) and contemporary (K–12 Education Administration, 2015) reform efforts explicitly link education and national competitiveness. However, the evolution of giftedness and talent education (GATE) is marked by paradox. Efforts in the mainstream academic system predominantly focus on the development of intellectual and academic capacities in STEM areas or select subjects such as music, dance, theatre or fine arts (Wu, 2013) and occur within a meritocratic social and cultural context that over-emphasises ranking based on performance on standardised assessment (Chou & Ching, 2012). While ostensibly aspiring to accommodate all students’ needs and nurture a range of diverse abilities, a cultural predisposition for identifying and rewarding high achievers often overlooks and thus fails to develop giftedness and talent outside traditional academic areas.

Towards a Sociocultural Understanding of Giftedness and Talent in Taiwan

What are dominant understandings of giftedness and talent in Taiwan, how have these understandings changed over time, and how do the relevant drivers of such change influence the nurturing of giftedness and talent, both within formal and informal educational contexts? With this chapter, we argue that answering such questions requires socioculturally informed understandings of the local context.

We think with two salient cultural features, namely, (1) meritocracy (So, 2015) inherited from Confucian thought and practice and (2) a harmony model of creativity (Sundararajan & Raina, 2015), characterised by the conjunction of incremental, evolutionary creativity with potentially revolutionary alternative practices from the margins so that they mutually subsist within and co-constitute, rather than outright subvert, society. We further propose Levi-Strauss' (1967) concept of the bricolage as a metaphor to help illuminate our research journey and explain the paradoxical co-existence of a mainstream, meritocratic system that values achievement on standardised assessments of intellectual ability, and the stated goals of education reform to diversify recognition and development of talent and routes to success. In our conception, both education practitioners, desiring to identify and nurture giftedness and talent traditionally overlooked by the mainstream system and those overlooked are bricoleurs, working within and sometimes actively harnessing the limitations of a system dominated by meritocratic thinking to overcome sociocultural constraints and achieve their goals. To demonstrate an example of educational mechanisms both developed outside of, and yet in dialogue with, mainstream education, we present the educational competitions and contests as sites of bricolage. Still underrepresented in scholarship on GATE, competitions and contests simultaneously satisfy the logic of meritocratic achievement while inducing reconsiderations of success, potentially widening the scope of identification and development of giftedness and talent.

In this chapter, we first elaborate on the sociocultural connections to meritocracy and the harmony model of creativity and further posit harmonising creative work as bricolage. We then engage these characteristics in discussing the evolution of GATE in Taiwan, both in mainstream education reform and GATE development and in informal bricolage work on the margins, focussing in part on the role of competitions and contests in GATE and research. Finally, we close with a discussion of practical and methodological implications of this exploration and conceptual approach for understanding the evolution of GATE in Taiwan and Confucian-influenced societies in general.

This work utilises data from popular discourse, such as online media and news, government-supported research and policy documents, academic publications and diverse first-hand experiences in relevant education arenas. In this way, this chapter is itself an example of research as bricolage (Kincheloe, 2005) and researcher as bricoleur (Steinberg, 2006) and thus a response to the call for both 'diverse inquiry methods' in the 'fragmented, porous, contested field' of giftedness and talent education (Ambrose, 2016, p. 133) and 'way[s] of thinking methodologically and philosophically together' (Jackson & Mazzei, 2012, p. vii).

Sociocultural Components of Giftedness and Talent in Taiwan

Confucianism, *Keju* and Meritocracy

Though employing diverse and oft-contested interpretations, public figures have evoked Confucianism in name as a guiding philosophy of bureaucratic governance and ideals for social relations for over two millennia (Li, 2012). Within various discourses, such as cross-cultural psychology (e.g. Kim, 2007), Confucian thought is regularly maligned for prescribing subjugation to authority, resulting in obedience and limited independent thought. This does not necessarily follow for all interpretations of Confucian teachings, and scholars have attributed misconceptions to cultural misunderstanding (e.g. Chan, 1999). This criticism, in part, arises from the hierarchical nature of the Confucian worldview. In terms of education, Confucius encouraged diligent, reflective practice as the path to learning (Hwang, 2012), yet at the same time valued ‘spontaneous interest’ (Hwang, 2012, p. 117) as the most efficient way to learn, saying ‘To prefer it is better than to only know it. To delight in it is better than merely to prefer it’ (from *The Analects*, quoted in Hwang, 2012, p. 117). Yet, one result of idealising ‘spontaneous interest’, according to Hung (2016, p. 94), is a ‘hierarchical view of knowledge’ and ‘belittlement of laborious knowledge’. Hung argues that in the hierarchical Chinese social structure, spontaneity belongs to the *junzi*, or superior person, who sits above those who toil.

The result is paradox: the conjunction of both a lofty ideal (the elite *junzi*) and universal effort. Effort is ‘the ultimate factor that differentiates ... achievement’ (Stevenson, Lee, Chen, Kato, & Londo, 1994, p. 128). The flip side of this effort focus is an inherent element of exclusion, particularly within contexts of structural inequality—if you do not succeed, it is because you did not expend the correct effort. While *junzi*, society’s elite recipients of recognition and honours may no doubt possess great talent, resources afforded by class and upbringing may also afford the privilege of idealised spontaneity. These Confucian values manifest in meritocratic mechanisms for educational and professional mobility in both contemporary Taiwan and China, universalising aspirations towards exclusive heights.

This paradox also helps explain the functional conflation of giftedness and talent in Taiwanese society. Formal definitions of giftedness employed within policy and research in Taiwan and other Confucian-influenced societies are largely western imports (Ibata-Arens, 2012), yet practice and discourse in Taiwan exhibit a degree of conceptual and functional overlap of giftedness and talent. In Mandarin, talent (*rencai*) has been used to describe individuals with superior domain-specific abilities, while someone with innate genius may be considered a heaven-endowed talent (*tiancai*). Yet, it is understood that even heaven-endowed talents wither without development, hence a Confucian emphasis on self-cultivation and deliberate practice (Zhang, 2017). The language of the Ministry of Education (MOE) K–12 Education Administration (2015) *Mid-term Plan for Gifted Education Quality Development* demonstrates an embrace of such paradox: exclusive and universal. Outlining gifted education goals and strategies, MOE evokes the need to cultivate young ‘sprouts’ as ‘future talent’ (p. 1) by expanding access to gifted education resources in a systematic, comprehensive and equitable manner and diversifying measurements

and indicators to look for and nurture creativity, leadership ability and civic care. The policy plan, an engagement between historical (holistic self-cultivation) and contemporary (education for national competitiveness) values, justifies expansion of gifted education with a universal proscription for talent cultivation.

Common to talent and giftedness is how they are identified, both historically and contemporarily. The *keju* (Imperial Examination) system is the most conspicuous marker of Confucian-influenced bureaucracy and served to both identify ability and cultivate talent, as aspirants prepared for the tests as the primary mechanism for upward social movement (Zhang, 2017). In the *keju* system, progress through the ranks of bureaucracy involved achieving top scores in a series of standardised examinations, and to have produced a *jinsshi*—advanced scholar or palace graduate—was a source of great pride for a locality. The entrenchment of elite power with ostensibly objective mechanisms for acquiring such power is demonstrative of what Elliot (2012) calls the ‘the real China Model’. The *keju* system did not provide equal access to social mobility (Elman, 2013; Liu, 2016). Rather, it was the purview of elites ‘as the linguistic and academic requirements were unattainable for the majority of peasants’ (Liu, 2016, p. 24). Ostensibly, one practical upshot of this meritocratic system was a refining of talent and knowledge upward through imperial bureaucracy. A strong emphasis on form and presentation in the *keju* established outstanding literary ability as a primary indicator of talent and potential future success, while continual success within society was contingent both upon novel practical applications of scientific and philosophical knowledge as well as the formal presentation of such knowledge. Elite education has thus been long associated with language and heaven-endowed, yet further cultivated talent with examinations.

Within contemporary education in both China and Taiwan, many parents, students and educators feel that ‘one exam determines your whole life’ (*yi shi ding zhongshen*). This may seem most true in China, where the *gaokao* examination system is still the sole gatekeeping mechanism for domestic university admission. Within Taiwan, even with the introduction of multiple paths to higher education in the 1990s, scores on standardised examinations still play a dominant role in admissions and placement in high schools and universities (Chou & Ching, 2012) and thus upward educational mobility. In professional spheres, an elaborate Civil Service Entrance Examination (CSEE) system, with tests primarily requiring reproduction of transmitted knowledge, is used to staff Taiwan’s bureaucracy (So, 2015), while competitive ranking through standardised assessment is at the core of some promotion schemes for local officials in China (Zhou, 2007).

Sociologist and British politician Michael Young (1958, 1994) proposed the concept of meritocracy to describe a political philosophy whereby power within the political structure is accessed by demonstrating intellectual talent and personal achievement. According to Kim and Choi (2017), many scholars ‘have reported evidence that the initial concept of meritocracy primarily emerged in Asia first’ and ‘argued that the concept of merit initially started in China and came to the West via Confucian texts’ (Kim & Choi, 2017, p. 112). So (2015) argues that meritocracy in Taiwan has evolved with the CSEE system and ‘has contributed to a top-down state-building approach’ (p. 312) and culture of ‘hiring-by-examination’.

Several other recent examples of meritocratic practice in Taiwan, here from academia, include the following: (a) the Ministry of Science and Technology Einstein and Columbus Program grants (Ministry of Science & Technology, 2017a, 2017b) for identifying and rewarding young scholars creating research sufficiently ground-breaking to garner international attention; (b) the recently announced Yushan Scholars program from the Executive Yuan (2017)—named after Taiwan's highest mountain peak—which, beginning in 2018, is intended to help retain and attract higher education talent with financial incentives and is a partial response to Taiwan's relatively low faculty salaries as compared to other places in Asia; and (c) the MOE Aim For the Top University Project, which distributed NT \$10 billion over 10 years to a dozen top-tier schools to increase their international rankings and scholastic excellence.

The preceding examples all fit within the logic of tournament theory (Connelly, Tihanyi, Crook, & Gangloff, 2014), as developed in the management literature, whereby motivation is understood as a partial function of 'reward structures ... based on relative rank rather than absolute levels of output' (Connelly et al., 2014, p. 16). The 500 domestic and 500 international Yushan Scholars would receive bonuses of up to NT \$5 million (roughly US\$170,000) each year based on salary and rank, far outpacing the average academic in Taiwan (W.-H. Chen, 2017). Within the Aim for the Top University Project, MOE distributed the awards unevenly even across this select group of 'top' schools (e.g. with a ratio of 15:1 for National Taiwan University and National Chengchi University). Policy-makers present accolades to top performers as efforts to cultivate, attract or retain talent. Ostensibly, in such a system the vast majority, forever only aspirants, may also strive harder with eyes upward.

In this way, meritocracy produces a feedback loop, what social psychologists call system justification (Jost & Banaji, 1994), whereby 'individuals are motivated to justify and rationalise existing social arrangements, defending and bolstering the status quo simply because it exists' (Godfrey, Santos, & Burson, 2017, p. 1). In Taiwan, the belief in the objectivity of standardised tests and the democratic ideals of equal access they represent—and thus the manoeuvring to justify the system despite contrary evidence in the form of increased inequality (Lee, 2008)—is still pervasive.

The meritocratic emphasis on ranking for social mobility has several implications for our understanding of GATE in Taiwan. Success within mainstream social institutions is tied to competition for top scores and positions within top institutions (Mao, 2018). Society, and thus parents and students, overvalue success on standardised tests and other forms of competition (Chou & Yuan, 2011). Education practitioners and policy-makers face pressure to accommodate demands to both (a) equitably develop diverse talents and (b) prepare students for standardised examinations and other competitions. Teacher-centred education is still common in most schools, with classes focussing on knowledge acquisition in preparation for tests in traditional academic subjects (Chou & Ching, 2012). Highly motivated and talented students overlooked in non-traditional academic areas are legion (Chou & Ching, 2012; Gao, 2010), while inexperienced graduates often lack desired workplace skills and initiative (Ministry of Education, 2010). While Taiwan has been the site of rapid social change in the past century (Morris, 2004), cultural change does not necessarily

follow the same pace (e.g. Moskowitz, 2008). Our sociocultural understanding of GATE in Taiwan considers how entrenched cultural forces perpetuate competition, both in standardised tests and novel focus areas for giftedness and talent cultivation.

Harmonising Creativity in Social Change

Is he not a man of complete virtue, who feels no discomposure though men may take no note of him? *The Confucian Analects*, Book 1, Chapter 1, Line 3 (Legge, 1893)

The preceding quote from Confucius reflects one aspect of the virtue of the learned person ('man [*sic*] of complete virtue'): equanimity when gifts go unrecognised. While entrenched meritocratic values may result in institutional bottlenecks and exclusionary practices, Taiwanese society does not stand still. Sundararajan and Raina (2015) argue from an indigenous psychology perspective that western conceptions of revolutionary creativity—with an emphasis on field-changing breakthroughs and crowd-defiance—are misfits for understanding creative practice and ideals in Chinese-influenced cultural contexts. To Sundararajan and Raina (2015), Gardner's (1996) attribution of 'revolutionary ideas' to a 'Western European culture' (p. 143) that is 'heroic and epoch-making' (p. 156) typifies a 'widely accepted view' (Sundararajan & Raina, 2015, p. 4) both dismissive of a lesser evolutionary creativity, which fosters incremental change and is seen as the purview of Chinese culture, and blind to conjunctive revolutionary creative forces of social change in non-western cultures, often located at the individual level. As 'creativity and conformity are not necessarily mutually exclusive terms' (p. 12), they offer a harmony model of creativity, whereby 'a both/and perspective . . . capitalizes on the dialectic interplay of the two opposing forces' (p. 11), both social evolution and personal revolution. This model is informed by the metaphysical belief that 'life itself . . . thrives on the preservation, rather than the dissolution, of the tension between old and new' (Sundararajan & Raina, 2015, p. 12).

While institutional novelty is typically incremental, and thus evolutionary, revolutionary breakthrough is possible at the individual level. Both Needham (1956) and Chang (1963) hold that Taoist handling of paradox, discovery and spontaneity foster conditions conducive to creativity, such that contributed to significant scientific discoveries in China historically outpacing the west. Taoism and Chan Buddhism both emphasise 'a combination of effortlessness, accuracy, and speed [in] spontaneity' (Sundararajan & Raina, 2015, p. 10) applicable to discovering novel recombination of features of present reality, replete with limits and potentials. The romanticised hermits of Chinese history, with their many 'lasting contributions in Chinese philosophy, scholarship, poetry, music, painting, the art of tea, medicine, geography, health sciences, and more' (p. 6), achieve personal creative breakthroughs in self-transcendence (i.e. 'development of consciousness'; p. 9) while remaining peripheral to, and thus distinct from, the mainstream. They are only then able to contribute something novel to the co-construction of an evolving totality of society. Truly creative (both novel *and* appropriate) contributions need not wholly

subvert mainstream systems but may instead co-exist distinct within a collective whole.

Conflict resolution, here between traditional academic emphases and educational values within the formal system and the growing awareness of and need for diverse forms of giftedness and talent, is marked by a strategy of ‘obey publicly and defy privately’ (Hwang, 2000, p. 172 cited in Sundararajan & Raina, 2015). Mainstream institutional authorities adopt policies that both delimit and facilitate change, especially when broadly worded. Enacting change, stakeholders on the outside adjust the presentation (language and logic) of their private, revolutionary discoveries to fit within these limits, aware the whole must adjust to their presence as they to other elements of the whole. In this way, a co-constructed harmonious social sphere endures, characterised not by subservience to convention but ideally ‘perpetuation of . . . tension between innovation and convention’ (Sundararajan & Raina, 2015, p. 13) as the elements continually reconstitute each other, their friction a perpetual harmonising.

The Evolutionary Creativity of the Marginal Bricoleur

Given this context, we propose that Levi-Strauss’ (1967) bricolage is an apt conceptual metaphor for understanding the harmonising creativity potential borne of the meeting between the mainstream and the margins. Bricolage refers to the work of a bricoleur, French for handyperson, who makes use of available tools at hand for task completion (Kincheloe, 2005).

Scholars have employed bricolage as a conceptual metaphor in diverse fields, including organisational and management theory (Boxenbaum & Rouleau, 2011; Duymedjian & Rüling, 2010; Miner, Bassoff, & Moorman, 2001), entrepreneurship (Davidsson, Baker, & Senyard, 2017; Phillips & Tracey, 2007), social enterprises (Molecke & Pinkse, 2016), gastronomy (Rao, Monin, & Duran, 2005), design thinking (Louridas, 1999) and financial innovation (Engelen, Erturk, Froud, Leaver, & Williams, 2010). Phillips and Tracey (2007) call for research on the role of bricolage at the institutional level as ‘there is little research on how actors creatively tinker with techniques from rival [institutional] categories infused with competing logics’ (Rao et al., 2005, p. 317). In addition, qualitative researchers have adopted and developed bricolage as a research methodology (Denzin & Lincoln, 1994; Kincheloe & Berry, 2004; Tobin & Steinberg, 2006), with implications for critical, self-reflexive knowledge production (Berry, 2006; Steinberg, 2006).

In this chapter, we follow Garud and Karnoe (2003, p. 278) in employing the connotations of ‘resourcefulness and improvisation on the part of the involved actors’ in the face of environmental constraints. In their study on technological entrepreneurship, a bricolage approach is contrasted to breakthrough strategies, mirroring Sundararajan and Raina’s (2015) contrasting views of western conceptions of revolutionary creativity marked by heroic, field-changing creations and the harmonious integration of revolutionary personal discoveries into evolutionary processes of social change. Faced with the constraints of an education system and

meritocratic society, creative education practitioners and individuals whose talents and potential remain unsupported by the mainstream system continue to cultivate themselves and leverage available resources to achieve their goals. Further, the GATE landscape may be conceived of as a bricolage, a work in progress reflecting an assemblage of stakeholders with diverse motivations and needs operating within and pushing the boundaries of past constraints.

Evolution of GATE in Taiwan

Education Reform and Persistent Examination Focus

Widespread public education in Taiwan began during the Japanese period (1895–1945), with primary education a part of colonial assimilation efforts (e.g. the creation of a Japanese speaking population; Morris, 2004), later extending through universities—Japan established Taiwan’s first university, Taipei Imperial University, which later became National Taiwan University, Taiwan’s top university today. During Nationalist rule, marked by the establishment of martial law in 1949, public education continued to expand, constructing a ‘new national character’ through Sinicisation (Tu, 2007). Seeking political and economic stability in an emerging role as part of the global manufacturing chain, government education focussed on the development of human capital, eventually earning Taiwan status as one of ‘Asia’s four little tigers’ (Morris, 1996). The lifting of martial law (Wu, 1987) resulted in a process of relaxation of regulations and paved the way for a liberalisation of education for teachers, students and the system as a whole (Tu, 2007). Subsequent reform reflects further adoption of key features of capitalism: human capital, modernisation, increased privatisation and development of specialised workforce competencies (Chou & Ching, 2012). We can, thus, understand education reform as a series of ideological transitions—earlier focussed on constructing national identity and later promoting economic competitiveness—to realise modern individualistic ideals. Central to the logic of the latter ideology is broadening the reach of education to cultivate desired talent for mobilisation in a globalising economic system.

The government established a cabinet-level committee, the Council on Education Reform, in 1994, to carry out reform. As an idealised figure whose credentials afforded necessary political clout and public favour (Kwok, 2017), the Executive Yuan appointed Taiwan’s first Nobel Laureate (the 1986 Nobel Prize in Chemistry) and Academia Sinica academician Lee Yuan-Tseh to chair the committee, composed of many western trained academics. With the goals of improving the quality of and access to education for a wider range of society, the committee focussed on continuing deregulation and the empowering of education practitioners (Chou & Ching, 2012). During this reform era, MOE moved from a single examination system to a diversified entrance system, allowing students to enter university through a variety of means, including proficiency examinations, admissions applications and school recommendations (Chou & Ching, 2012; Ministry of Education, 2005). During this

period, the Basic Academic Competence Test was broadly implemented, and many colleges and universities began using a combination of examinations and alternative enrolment processes to recruit students.

These reform initiatives have been met with substantial controversy, marked by miscommunication between schools, parents and the government and the growing socioeconomic gaps between urban and rural areas (Chou & Ching, 2012). The transition to a diversified entrance system intended to increase educational access and decrease pressure on students brought new pressure to not only perform academically but also gain experience and present aptitude in a range of other areas, such as through volunteering, extra-curricular activities and participation in international competitions, now crucial to admission to better universities (Chou & Ching, 2012). The rapid rise of cram schools, discussed in detail below, attests to this phenomenon. Meanwhile, entrance examinations have still remained a near universal requirement for Taiwanese students, with the enrolment rate for the College Entrance Examination exceeding 90% among 18–21-year-olds not in junior colleges or graduate schools, an increase from 82.02% in 2006 and 40.90% in 1996 (Chang Chien, Lin, & Chen, 2013). While there is regular public discussion and even research on adjusting admissions criteria, such as the development of comprehensive creativity indicators for university admissions (Chan, Lin, & Hsieh, 2008), exam performance in traditional academic subjects is still a primary criterion.

Cram Schools and Reform Paradox

The nature of Taiwan's pervasive shadow education (Chou & Ching, 2012) is demonstrative of the limitations of reform in moving away from examination-oriented education. Cram schools (*buxiban* and *angqinban*) are ubiquitous in Taiwan. While the diversified entrance system was meant to release steam from the 'pressure cooker'—a common term for junior high school in Taiwan when 'one exam [really would] determine your whole life'—the demand for test-prep-focussed cram schools has risen. Nowadays, with some starting years before formal education begins, many Taiwanese students attend private classes after school, in some cases lining up on school grounds to be led by cram school teachers to one of the outlets for competing companies encircling public schools. The number of registered cram schools has risen from 5,891 in 2001 (Chou & Ching, 2012) to 18,022 in 2017 (Kaohsiung City Government Education Bureau, 2017), a majority of which are for elementary (45%) and junior high school (15%) students (Kaohsiung City Government Education Bureau, 2017).

Chou and Yuan (2011) attribute the paradoxical rise in demand for supplementary private education after moving away from a single entrance examination system to a predominant focus on entrance to 'star schools' (Xu, 2007). Many students report feeling that they must attend exam-focussed cram schools, as well as being obliged to complete regular classes, so they face increased stress while fast-paced rote learning strategies influence educational attitudes (Chou & Ching, 2012).

While reform efforts like diversifying entrance mechanisms theoretically provide greater access and choice, they are also open to co-option by meritocratic values that may perpetuate or even exacerbate inequality. According to Chou and Ching (2012, p. 164), costs for a month in any given subject averaged US\$80, with many children attending classes for multiple subjects. Given that as of 2015, the average monthly income per person was roughly NT \$51,000 (or US\$1,700; Directorate General of Budget, Accounting and Statistics, 2016), a hypothetical dual-working-parent family with two children each enrolled in three subjects would, based on the conservative 2012 rates, spend up to 14% of their monthly income on cram schools. In truth, wealth disparity means that many families earn much less than this, and so cram schools are either a greater burden or not an option. Despite the significant financial burden, parents feel obligated to send their children to cram schools, as they feel it is their responsibility to ensure their children ‘never lose at the starting line’ (*buyao shu zai qipao dian*).

As evidence of the demand for examination performance, it is telling that the vast majority of cram schools (80% in 2010, Chou & Ching, 2012) are focussed on traditional intellectual subjects found in standardised examinations: Chinese, English, math and science. At the same time, there has been a small increase in cram schools focussing on arts, crafts and other non-academic skills (2,197 in 2003 to 2,773 in 2017, Kaohsiung City Government Education Bureau, 2017), such as graphic design, coding or sports.

Upward academic mobility is still a selling point of cram schools regardless of subject, as students applying directly to particular colleges under the diversified entrance system may need to attend interviews, demonstrate efficacy in specific talents or present portfolios of work. Advertisements for cram schools often boast of top-score earners who have been through their programs and justify their costs in terms of tangible achievement gains in particular subjects or on specific tests (Chou & Yuan, 2011). Interestingly, there were only two registered cram schools devoted to preparing students to retake the College Entrance Examination (X.-Y. Chen, 2017), perhaps a function of the ballooning university numbers during the relatively recent and rapid expansion of higher education (Chan & Lin, 2015) and Taiwan’s declining birth rate (Chou, 2014).

Formal Giftedness and Talent Education in Taiwan

Seen as a strategy for translating human capital into economic growth, GATE in Taiwan preceded widespread education reform. Wu (2013) describes five stages of GATE in Taiwan over the past four decades: (a) dawning (before 1973); (b) experimentation (1973–1983); (c) promotion (1984–1994); (d) establishment (1995–2005); and (e) transformation (2006–2016).

The *dawning* stage began with the 1962 call for the development of gifted education at the 4th National Conference on Education. This resulted in MOE sponsored trial programs in several elementary and junior high schools in 1969 and 1970, which focussed on math, science and Chinese (Stevenson et al., 1994).

The first gifted education in fine arts began in 1968 in a private school, and it was another decade before public pilot programs began (Stevenson et al., 1994).

The *experimentation* stage (Wu, 2013) began with the formal adoption of categories of giftedness imported from the framework of The Marland Report (Marland, 1972), the first formal definition of giftedness as presented to the US Congress by the US Commissioner of Education in 1972. This definition included academic and intellectual talent, as well as leadership ability, visual and performing arts, creative or productive thinking, and psychomotor ability. Taiwan adopted similar language in 1973 but in practice retained emphasis on academic and intellectual skills. This period saw a 6-year experimental project in elementary schools, as well as the first program evaluations, elementary-level gifted summer camps, dance classes and creative education programs.

The *promotion* stage (Wu, 2013) began with the passing of the Special Education Act in 1984 (later amended in 1997, 2009 and 2013; Ministry of Justice, 2014) and included a section on gifted education, with categories of gifted education potentially eligible for resource assistance, including artistic, creative and leadership abilities, as well as ‘other special abilities’ (as opposed to psychomotor abilities in the Marland Report; 1972), and enshrined GATE in all levels of education (Wu & Kuo, 2016). Programs in junior and senior high schools also expanded during this period, and by 1994, mechanisms were established for providing International Mathematical Olympiad participants special enrolment opportunities. In 1994, the National Science Council also began a comprehensive 5-year research project on strategies for GATE development.

The *establishment* stage (Wu, 2013) is marked by the formation of the Taipei Gifted Education Development Association in 1995, Chinese Gifted Education Association in 1998, and the publication of the 1999 *White Paper on Taipei City Gifted Education*, the first *Gifted Education Research* journal in 2001 (2012 name changed to *Gifted Education Forum*), the *White Paper on Creativity* in 2003, and finally MOE’s establishment of the National University of Science and Technology Youth Class with six public high schools.

Finally, the stage of *transformation* (Wu, 2013) is most notable for an emerging association of GATE with creative education, as seen in the preliminary research for the *White Paper on Creative Education* and subsequent action plans (Wu & Albanese, 2013), which emphasised a need for pedagogical change to harness universal creative potential. Further, the Special Education Act was amended in 2009, as arts education became the purview of the Arts Education Act rather than a part of gifted education (Wu, 2013). During this period, the *White Paper on Gifted Education* (Ministry of Education, 2009) called for a diversification of gifted education to both create more equitable access and cover a broader range of abilities, while ascribing the cultivation of social responsibility and service to the realm of gifted education.

Based on the overviews of formal giftedness education referenced above and found in policy papers, we identify several key features reflecting the sociocultural understanding of GATE in Taiwan developed in this chapter. These include (a) a persistent focus on merit (‘credentialism’; Wu & Kuo, 2016, p. 46) and traditional

intellectual and academic skills, despite adoption of policy language covering diverse areas (Wu & Kuo, 2016); (b) policy with broadly interpretable definitions of giftedness, with 'giftedness in other special abilities' evolving to include skills in sports, games and computers (Ministry of Education, 2009); (c) incremental implementation with pilot programs (Wu, 2013); (d) stated intention to leverage efforts in gifted education to reach everyone in the education system, such as with policies calling for promotion of flexible, student-centred learning (K–12 Education Administration, 2015) or expansion of creative education (Wu & Albanese, 2013); and (e) the conjunction of giftedness, creativity and talent in later policy and practice (Ministry of Education, 2009, 2013).

Reconceptualising Talent in the Mainstream System

As we have argued, understandings of giftedness and talent are historically and contemporarily entangled with meritocratic values. A predominant feature of relevant policy development is a deference to academic prestige in developing and justifying implementation of new policy. We see this reflected in the recent development of the *White Paper on Cultivation of Talent* (Ministry of Education, 2013), with plans reaching to 2023. With a public that considers economic security and social stability the purview of the government, education reform is historically highly politicised (Chou & Ching, 2012; Kwok, 2017). Faced with criticisms reflecting public anxieties surrounding economic insecurity (e.g. youth unemployment, shifting landscape for jobs, pension reform, general economic stagnation), the Executive Yuan established a reform committee to produce the white paper, again asking Lee Yuan-Tseh to chair a committee of academics. This paper (Ministry of Education, 2013) defined ideally talented individuals as (paraphrasing): possessing sufficient professional knowledge and skills, communicative and cooperative capabilities, and basic civic literacy, enabling engagement and co-creation of an open, civilised society in its various dimensions. Key focus competency areas include global mobility (including language and international vision), employability, innovation, interdisciplinary abilities, information competency and civic competence. The paper directly articulates urgent cultivation of talent for diverse industries as a key to bolstering national competitiveness and addressing challenges such as youth unemployment.

Two aspects of this policy are particularly noteworthy for this study: the process of development and definition. First, in terms of process, when faced with complex challenges and public pressure, the government utilised a committee of scholars to construct a definition with little input from current GATE scholars and practitioners. An Academia Sinica Academician and Nobel Prize Winner, Lee Yuan-tseh is a veteran in the education reform arena and typifies the meritocratic reverence for elite scholars. The policies put forth in such reform initiatives, while likely well-intended, are informed by perspectives of academicians themselves epitomising intellectual and academic achievement and accolades, such as Li's Nobel Prize. One implication of offering reform discretion to academicians is a potential

disconnect between intended ideals and practical applications and results. Uhlmann and Cohen (2007) show that higher rates of self-perceived objectivity can in fact result in greater bias, as self-scrutinising and self-monitoring behaviours are reduced. Valuing personal objectivity as academics, committee efforts appeal to meritocratic values of objectivity to continue to identify giftedness and talent with achievement indicators in traditional intellectual and academic realms, functionally reifying existing academic emphases and potentially overlooking possible limitations and unintended consequences of reform efforts, such as the rise of cram schools in the decades following the 1994 reform.

Second, the white paper definition covers a broad range of competencies. We argue this allows practitioners to tailor the language and intentions of their particular initiatives to fit within the framework and receive resources. Thus, the formal system sets new benchmarks that can be interpreted broadly, opening the doors to experimentation from enterprising bricoleurs, who may gain access to a wider set of concepts to integrate into their GATE bricolages.

This tendency of MOE to employ academic research to guide policy towards broad goals meant to increase inclusivity can also be seen in several other initiatives from the past two decades. These include: (a) the emergence of 6-action plans for creativity education implemented over 6 years from research in the *White Paper on Creative Education* (Ministry of Education, 2003; Wu & Albanese, 2013); (b) the subsequent *Creativity and Imagining the Future in Education* project (Ministry of Education, 2011); and (c) the three new acts governing experimental education of 2014 (Ministry of Education, 2015), which created mechanisms for publicly approved experimental education (T. Chen, 2017), such as with charter schools, alternative schools like Waldorf schools, and non-school organisations, like the Taipei City Government Department of Cultural Affairs run Taipei Media School. The language of relevant policy papers for each of these cases represents a broadly conceived policy effort from the central government. They outline initiatives intended to be implemented in part with collaborative academic pilot programs, in an incremental, evolutionary manner. At the same time, they also contain language encouraging the development of distinct local initiatives. We argue that administrators may view these initiatives as opportunities to increase their school reputations, in turn offering teachers the chance to exercise novel educational practice. Thus, the conditions are present for education practitioners and students to act as bricoleurs.

‘Naughty’ Bricoleurs: Redefining Talent from the Margins

In our sociocultural understanding of GATE in Taiwan, government policies, in part informed by eminent academics and motivated by political considerations and social concerns, articulate guidelines that delimit conceptions. These operate as both boundaries and guideposts, and the institutional weight and sociocultural heritage behind these structures often result in incremental, evolutionary change. The other element of Sundararajan and Raina’s (2015) harmony model of creativity often overlooked when examining only the mainstream social system is the concurrent

exploration and discovery, revolutionary at the individual level. We argue that given that understandings of heaven-endowed giftedness and talent require cultivation (Zhang, 2017), these smaller scale creative acts, themselves insufficient to revolutionise the system, can still affect change in the way giftedness and talent are conceived by society by serving as alternative models of success. Outside of the mainstream system, examples abound of individuals who forged their own paths to success, though often at significant sacrifice to the extent social relations and identities are constructed based on the wishes of parents. Like Mr. Zhou from our introduction (Public Television System, 2017), we conceive of these creative individuals who are forced to grapple with systemic constraints as bricoleurs.

One such bricoleur at the heart of an initiative to create a platform that fosters recognition of alternative learning experiences is Ozzie Su. Inspired to create art from a young age, Su was fortunate to grow up with a family who supported his pursuit of his interests even though aspiring artists are often considered ‘difficult’ children among Taiwanese parents (Su & Chen, 2016). Appreciating opportunities to pursue his own interests, he perceived mainstream education and social values as limiting and saw rampant neglect and ultimately replacement of individual interests with unquestioned social values. Su had a vision of gathering those who did not quite fit to encourage society to actively question what we mean by education and success (Su & Chen, 2016) with a learning ‘utopia’ for ‘ages 1–99’ (Za Share, 2018b). Moving from the life of an artist into the unknown as an event organiser, Su opened the doors to the Naughty Education Fest at the Huashan 1914 Creative Park in Taipei in May 2015. He gathered groups and organisations involved in alternative education, with Su, a mainstream educational outsider, spending NT \$7 million of his own funds (W. Chen, 2017). The term ‘naughty’ (*bu tai guai*, literally ‘not very well-behaved’) was chosen in an attempt to reappropriate and celebrate a commonly disparagingly used term for someone exhibiting any behaviour not adhering to mainstream academic or social values (Su & Chen, 2016)—for example, not completing homework, playing video games or even socialising with friends instead of studying.

Within 2 days, 25,000 visitors attended, free of charge, to learn about educational innovation efforts from 250 exhibitors (Za Share, 2016). Building on this success, in 2016, Su organised Za Share-Expo for Innovative Education, this time a ticketed event showcasing 160 organisations involved in educational innovation in Asia, including several from the mainstream education system in Taiwan (Za Share, 2018a). Over 17,000 visitors attended over 2 days (Za Share, 2016), including, as witnessed by the present authors, representatives from MOE. In October 2017, a third iteration, titled Za Share-Expo for Innovative Education in Asia, included 120 organisations with over 50 lectures and workshops over 3 days, notably drawing from education practitioners from all areas, not necessarily from the ranks of the “‘successful personages” as defined by traditional society’ (W. Chen, 2017). Su envisions this platform as a new mode of learning: Za Share. The name, literally ‘miscellaneous school’ or ‘miscellaneous learning’ in Chinese, but the Romanisation for miscellaneous, ZA, invokes everything from Z to A. Su’s encouragement to learn

from anything at hand and of interest (Za Share, 2018b) reflects the bricolage nature of these non-mainstream educational endeavours.

Adopting the lens of a harmony model of creativity (Sundararajan & Raina, 2015), we see how the tension between the limitations of extant formations and novel creations may drive social change. We believe that the success of initiatives like Su's has the potential to reconfigure social conceptions of talent by publicly identifying new markers of success. The understanding of the social landscape for GATE we propose here includes the conjunction of conservative approaches of mainstream educational authorities and the introduction of creative ideas from outside voices.

Competitions and Contests as Bricolage

Competitions and Contests Satisfying Meritocratic Logic

According to Wu and Kuo (2016), identification of giftedness is conceived of as a competition, with a 'winner-takes-all' effect, whereby those identified have access to better resources and more opportunities for academic and career success. This competition for resource access is governed by standardised tests as scores are presumed to be more objective. The practice, however, excludes 'culturally diverse and socioeconomically disadvantaged students' (Wu & Kuo, 2016, p. 37), as familiarity with mainstream culture and access to private resources, such as coaching through cram schools, is not distributed evenly in Taiwan.

Competition played a role in the earliest methods of identifying giftedness in contemporary Taiwanese education, as in addition to high scores in math or science (top 1% of the class), general intelligence (IQ) or creativity tests, performance in a national or international competition, such as a mathematics contest or science fair, was one way of fulfilling requirements of being identified as gifted early on in Taiwan (Stevenson et al., 1994). Only after drawing the attention of and receiving a recommendation from a teacher would a committee of teachers and administrators convene and notify the local education bureau, who in turn initiated further screening and placement. A national law delineated explicit requirements regarding GPA and IQ, which relied on comparative rank (e.g. IQ test scores two standard deviations above the mean). Overall, GATE in formal education is mainly for students with high general abilities, talents in traditional academic domains or students with fine arts, music, dance, drama or sports potential, while identification 'highly relies on...objective test scores' in conjunction with additional criteria, such as recommendations, documentation of learning characteristics and excellent academic performance (Wu & Kuo, 2016, p. 36). This reflects both local cultural beliefs in elitism and talent development and western emphases on creativity and multiple assessments (Wu & Kuo, 2016).

Competitions and contests have risen in popularity in Taiwan in recent years. In addition to international science and math Olympiads, competitions are used in a wide array of educational arenas, including nursing (Chiu et al., 2010), creativity and entrepreneurship (Feng, 2013), green energy (Wang, Chang, Huang, & Chu, 2010)

and the knowledge economy (Yang & Hsu, 2007). Innovation competitions have also recently become popular in many countries around the world as tools for education, particularly in the sciences and technology (Feng, 2013). For example, MOE recently hosted an applied computer systems competition for 128 teams from 27 schools, a majority of which were technology universities (Wu & Chung, 2017).

Mainstream institutional stakeholders, including MOE and the Ministry of Economic Affairs (MOEA), have also recently increased support for the use of competitions as criteria for identifying talent. For this study, we asked MOE for information regarding how Taiwan has performed in international competitions. MOE prepared and provided an unpublished 37-page report (Ministry of Education, 2017) entitled *International Achievements (International Rankings and International Competitions)*. The materials included indicate how MOE conceives of Taiwan's achievements in this area. While dominated by performance in international sports competitions, the document also lists Taiwan's scores participating in the Progress of International Reading Literacy Study (PIRLS; International Association for the Evaluation of Educational Achievement, 2018), OECD-run Programme for International Student Assessment (PISA; Organisation for Economic Co-operation and Development, 2018), Trends in International Mathematics and Science Study (TIMSS; International Association for the Evaluation of Educational Achievement, 2018) and International Civic and Citizenship Education Study (ICCS; International Association for the Evaluation of Educational Achievement, 2018).

The MOE report began by saying they started the 'Nurturing Talent in the Arts and Design Project' in 2005 in order to nurture talent in the arts and design through internationalisation. The project allocated budget to encourage students to participate in international competitions and contests or for MOE to sponsor competitions. As achievements, MOE notes that in the 12 years of hosting the Asia University administered 'Project to Encourage Students to Participate in International Arts and Design Competitions', 701 participants have received awards with a value of over NT\$480 million (roughly US\$16 million). Taiwan boasts 3 gold award recipients in international design contests, 2 silver awards and 18 bronze awards, while 68 have received awards of excellence or been nominated (Ministry of Education, 2017). Calling it an 'outstanding performance' (p. 1), the 91 award-winning products receiving a total of NT\$4.87 million. The report also cites Taiwanese students' performances in Germany's iF World Design Award and Red Dot Design Award, with 133 products on iF Design Top 100 lists between 2004 and 2016 (third behind South Korea with 188 and Germany with 168), and the presence of six Taiwanese universities in the top 15 performing universities in the Asia-Pacific region within the Red Dot Design Award. A breakdown of subsidies for participation in design competitions from 2012 to 2016 indicated 385 recipients received NT \$16.71 million for competing in product (224), graphic (51), craft (4), visual communications (56) and digital animation (13) design competitions. From this, we understand that MOE is concerned with Taiwan's international reputation and considers performance on international competitions as an indicator of general educational quality.

Conceptions of the role of international competitions in GATE from mainstream policy stakeholders reflect both an idealised stated goal of providing access to unique opportunities for students and underlying realities of motivations based on pursuit of economic competitiveness or international merit. In policy language, participation in international competitions is viewed as a learning mechanism for students to gain international perspective, a major competency area discussed in the *White Paper on Cultivation of Talent* (Ministry of Education, 2015). Locally hosting international competitions in order to increase exchange opportunities for gifted students is also a stated goal in the recent white paper regarding gifted education (K–12 Education Administration, 2015). It is clear that MOE is willing to spend significant public education funds on these activities in the name of cultivating giftedness and talent. However, success in these areas seems to be measured by securing placement in international competitions, while exposing only the premier performers to potential educational benefits, again reflecting meritocratic values. As we have seen above, MOE proudly notes achievements in international competitions that bolster an international reputation, with millions spent on select students. Besides reputation, economic gain is the other desired form of competitiveness. In 2014, the then R.O.C. Premier Jiang Yi-huah publicly lambasted the ‘leaking’ of NT\$15.7 billion in public funds over 6 years on strategies to capitalise on patents under the Executive Yuan’s Industrialisation of Inventions and Patents policy, a major thrust of which was to promote and subsidise participation in international competitions and contests. Premier Jiang lamented that no such returns had materialised (Wu, 2017). His criticism reveals a conception of performance on international competitions and contests, and education in general, as tools for economic growth and competitiveness.

Recently, various educational authorities have also integrated competitions and contests into enrolment criteria for high schools and universities. Under the Basic Education Act, all students are entitled to a high school education, yet schools and the counties with oversight discretion in the implementation of basic education utilise the legal flexibility in admissions criteria to differentiate their student populations. Many counties offer bonus points on non-exam-based admissions for performance in international competitions (Wu, 2017). Many private science and technology-based universities have also created mechanisms to subsidise faculty and student participation in international invention competitions in pursuit of reputation, finances (via patents) and high rankings. Thus, competitions and contests are seen as a part of a survival strategy within Taiwan’s competitive university landscape, particularly as they face declining student populations and imminent downsizing, either through university closures or mergers (X.-W. Chen, 2017). It remains to be seen how pervasive this practice becomes and to what degree it presents opportunities for talented individuals who may not have excelled in traditional academic areas or functions as another marker of elitism.

Academic Interest in Competitions and Contests

To ascertain research interest in the area of competitions and contests in education, we searched for keywords in local databases of (a) master's theses and doctoral dissertations, (b) Ministry of Science and Technology (MOST)-funded research projects and (c) Taiwan Social Sciences Citation Index (TSSCI) journals. Using Chinese, we searched for combinations of 'student(s)' and 'competition(s)' or 'contest(s)'. The reader should note that there is no ambiguity in Chinese between a competitive event (*jingsai*) and the activity or condition of competing (*jingzheng*). Further, Chinese does not pluralise nouns.

Our search of doctoral dissertations and master's theses returned 43 doctoral dissertation abstracts with a combination of 'student(s)' and 'competition(s)', while 16 contained 'student(s)' and 'contest(s)', and only 1 title contained 'student(s)' and 'contest(s)'. For master's theses, we found 1,032 theses with 'student(s)' and 'competition(s)' in the abstracts (with 87 with the same in the titles) and 925 with 'student(s)' and 'contest(s)' in the abstracts (with 43 in titles).

MOST, which helps set research agendas through funding and whose research results often inform policy and action initiatives, has supported 153 projects with 'competition(s)' or 'contest(s)' in the title, but only 14 of those also included 'student(s)', indicating that while there have been a decent number of studies in other areas, the vast majority are not explicitly related to education. The link between competitions and contests and education has not thoroughly been established within MOST research discourse. Regarding journal publications, scholars have published 49 articles in TSSCI journals with 'students' and 'competitions' or 'contests' in either the title or abstracts.

This indicates to us that although competitions and contests are increasingly important educational activities for identifying talent, academics have yet to begin seriously investigating the phenomenon. The higher numbers of master's theses may be a reflection of the numbers of master's students overall. Taiwan has over 150 colleges and universities, almost all of which have master's programs, and each year over 24,000 students graduate from master's programs (Ministry of Education Department of Statistics, 2017). Further up the academic merit-ladder, however, there are still very few studies in this area.

Of note, however, is that the start of interest in this area, in both doctoral dissertations and master's theses, coincides with the 1994 education reform, which moved away from the single entrance examination system. This indicates a potential expansion of competitions and contests, and research on this novel phenomenon occurred at a time where the academic and intellectually focussed entrance examination no longer wholly monopolised the definition of talent and success and mainstream educational policy began aspiring to meet a more diverse set of needs and abilities.

Competitions Switching on the 'Lights of Taiwan'

While competitions and contests fulfil the logic of achieving merit and are employed to identify and assist highly talented individuals based on ranking, they can also serve as sites for individuals to develop and demonstrate talents not recognised within the mainstream educational system. In this section, we introduce several 'Lights of Taiwan', showing how the bestowing of such a title of success is related to award recognition.

The public lauding of an individual as a 'Light of Taiwan' (*Taiwan zhiguang*) typically follows international recognition in the context of contests, competitions or awards. These individuals, newly held in popular esteem and praised by the government, are often from among those whose talents went unrecognised and unsupported by schools and yet managed to develop their gifts independently or with support from informal educational mechanisms. For example, in 2017, at the age of 13, Chiang Ching-Liang became the youngest student ever admitted to the New York University and the first Taiwan-educated junior high student to become accepted to a top-tier school (You & Wu, 2017). Chiang, certified by Mensa International with an IQ of 160, was precocious from an early age. A voracious reader who, having won numerous piano and violin competitions, was autodidactic, with his mother citing negative feedback in schools as reasons for self-directed preparation for international English examinations and the Scholastic Assessment Tests and completion of advanced placement courses before gaining admittance, both to NYU and the world of public esteem as a 'Light of Taiwan'.

The case of another 'Light of Taiwan', Wu Pao-Chun, demonstrates talent in areas outside of formal education. Growing up the youngest of eight in an impoverished single-parent family, Wu's passion for baking garnered him the title of Master Baker at the 2010 Bakery Masters competition in Paris. Continually enhancing the commercial success of his brand and the development of his craft, Wu applied in 2014 to enrol in the National Chengchi University Executive MBA (EMBA) program in Taiwan, only to be rejected because of national regulations stipulating that a university degree was needed for enrolment. Wu had only completed junior high school. A case was made to either make an exception or adjust the rules. To keep this light in Taiwan, even the President at the time called for a rule change. MOE did end up changing the rule to open admissions to winners of major international competitions, but ultimately Wu chose to enrol in an EMBA program at the National University of Singapore, graduating in 2016. The policy, though, is now in place as an opportunity for others perhaps likewise overlooked by the formal education system.

This second case is an excellent example of how individual creative breakthroughs through self-cultivation from a marginal bricoleur can influence the mainstream system by appealing to its own meritocratic logic, demonstrating a harmonising creativity. Wu's case represents someone who achieved success by realising revolutionary personal potential, honed by self-cultivation, and all despite the mainstream educational system that did not acknowledge his area of talent. After achieving merit outside the formal system, reform-minded academics and policy-makers argued for a legal change. The government then enacted substantive legal

changes with the potential to shift the optics regarding progress in developing talent and giftedness. Given the anxiety to retain talent in Taiwan, change was introduced in the form of expanding mechanisms for enrolment, demonstrating not a deliberate, premeditated policy response informed by consideration of theory or best practices, but a circumstantial reaction to an encounter with a marginal element (i.e. a successful baker without a high school diploma ready to benefit from an EMBA program) able to satisfy mainstream meritocratic logic.

Diverse Talents Developed and Identified in Competitions

Wu's is a unique case. While not everyone can achieve a top rank in an international event, a growing number of competitions and contests are intentionally designed to provide opportunities to develop and display non-traditional talent and skills. One such example is the Intelligent Ironman Creativity Contest (IICC), which emerged initially as a Taiwanese contest from an MOE sponsored creative education project in 2004 where it was a highlight of a creative education exhibition (Wu, 2009). The first international IICC contest took place in 2005 and participation has continued to grow in the 13 iterations since then. The contest is immensely popular among high school and vocational high school students in Taiwan, as well as teams from abroad. In 2006, 1,138 teams with over 6,000 students participated, while in 2012, there were over 12,000 participants in 2,000 teams with international participants from over six countries (Wu & Fan, 2011). IICC staff indicated (personal communication, December 14, 2017) that in 2017, 8,124 students in 1,354 teams participated, with international teams from Vietnam, Indonesia, South Korea, Malaysia, Singapore, Hong Kong, Japan, Chile and Nigeria. The majority of students from Taiwan came from vocational high schools (119), yet the participation from regular high schools (25) indicates that IICC is attractive to students beyond STEM as well.

The contest was designed for team members to develop and exercise intelligence, endurance and creativity in collaborative, project-based team settings (Fan et al., 2016). The completion of a creative team project, done over a consecutive 72-hour period in a closed room, is preceded by the gathering of resources in earlier stages, acquired by answering questions in mathematics, science, technology and even the social sciences and arts. The better teams perform in earlier stages, with more resources acquired for the final push. Thus, the contest focusses on traditional academic talent, as well as teamwork, presentation, aesthetics and creativity skills (Fan et al., 2016).

The IICC is just one example of an increasing number of educational contests in Taiwan. Depending on the intentions of organisers and practices of facilitators, contests may be designed to necessitate exercising both traditional academic skills and demonstrating diverse talents. Fulfilling the logic of the meritocratic system, parents and educators may be inclined to see value in student participation. While only a select few may win these competitions—and thus as an educational mechanism they are open to similar critiques of perpetuating inequality—the evaluation of alternative talents and skills within these competitions may carve out more space for further formal and informal social validation.

Assembling Bricolage Understandings of Giftedness and Talent

In this chapter, we developed a sociocultural understanding of giftedness and talent that engaged concepts of meritocracy and harmonising creativity in assemblages of elements of the sociocultural context. This bricolage recognises *keju* heritage, rank-based comparisons, individual and national competitiveness, imported knowledge systems and economic imperatives in conjunction with desires for equitable flourishing and nurturing of diverse gifts and talents, individual creativity and self-cultivation. These elements find new purchase in society through their mutual tensions, and the educational landscape is continually reconstituted between incremental social evolutions and self-transcendent personal revolutions. We believe that this bricolage approach to inquiry offers insight into the present constraints and opportunities of the education system, while also drawing attention to relevant phenomena and stakeholders, facilitating unique encounters between elements of complex processes of social change.

Implications and Orientations for Future Research and Practice

Harmonising Creativity Across the Region. Both Taiwan's case and this approach may have implications for other contexts as well, particularly several contemporary East Asian societies that present similar disjuncts between policy and practice. As shown already, official policy definitions of giftedness in Taiwan closely mirror the Marland Report (Marland, 1972), while assessment and practice adapt theory from western academia (e.g. Gardner, 1983; Sternberg, 1999). Hong Kong employs a similar definition for giftedness (Tommis, 2013), though hews even closer to the Marland Report, as does South Korea, where gifted education laws and policies from 2000 and 2002 established gifted programming throughout the education system (Kim, Shim, & Hull, 2009; Lee, Kang, & Lee, 2016). In China, the definition of 'supernormal' (*chaochang*) students dominates GATE discourse. The term emerged from the establishment of the Special Class for the Gifted Young at the University of Science and Technology in Hefei, Anhui Province, in 1978 by three Chinese-American Nobel Prize winners in physics, Yang Chen-Ning, Samuel C. C. Ting and Tsung-Dao (T.-D.) Lee (Shi, 2005). Supernormal is employed to describe children with superior performance or potential relative to normal children as determined by the statistical measurement of cognitive, non-cognitive, creativity and domain-specific talents (Zhang, 2017), with a predominant focus on IQ and academic performance, particularly in science and mathematics. Japan is an outlier among contemporary Confucian-influenced societies for its relatively less comprehensive gifted education programming and policy, in part due to a cultural aversion to perceived elitism (Ibata-Arens, 2012).

Throughout the region, giftedness and talent cultivation is associated with development of human capital as a key to international competitiveness, whether via scientific progress or economic prowess (Ibata-Arens, 2012). Further, though broad definitions adapted from western academia designate cultivation of diverse abilities as GATE objectives in theory, stakeholders in these systems consistently engage

with sociocultural heritage that emphasises competition and traditional, exam-based measures of intelligence and academic performance (Sriraman & Lee, 2016; Wu & Albanese, 2013; Zhang, 2017).

Future research may consider exploring how aspects of local sociocultural contexts in other Confucian-influenced societies interact with GATE efforts, particularly when such efforts involve the transfer and translation of GATE policy and knowledge across unique sociocultural contexts. Future research that strives to create socioculturally informed understandings of the evolution of GATE in various national and administrative contexts may help illuminate historical social change and offer insight into how to more effectively direct such change towards intended development goals. Practitioners and participants may benefit from reconsidering their position as essential co-constitutive parts of an evolving GATE landscape.

Researcher as Bricoleur. We also believe that this chapter serves as a case of employing bricolage in the process of discovering how things fit and creating knowledge about those connections. Discoveries were made by assembling and verifying data points from diverse areas, including news and popular media, government statistics and policy papers, academic publications and a wide range of first-hand experiences in both formal and informal education research and practice. For example, our third author has over 50 years in the field of educational psychology and has led numerous MOE and MOST commissioned research projects and advised and evaluated countless competitions and contests, while our other two authors have both conducted research on and served as judges for competitions. We hope that our exercise in bricolage and use of data marginalised in traditional academic discourse will help encourage others to broaden the search for authoritative voices and accept more diverse sources. The interrogation of authority is central to critical methodologies (Darian-Smith & McCarthy, 2017) and concerns of epistemic violence and oppression (Dotson, 2011) and epistemic marginalisation and inequality (Go, 2017). Steinberg (2006) presents a moving case for embracing the construction of knowledge as a bricoleur in such a way that it enables the illumination of previously unseen phenomenon and broadcasting of unheard voices.

We are aware our authority as researchers is derived in part from our merit, as is the authority of this publication, and recognise those most convinced of their objective authority may indeed be blind to their own biases (Uhlmann & Cohen, 2007). By exploring and referencing primarily academic sources, and from within the limited scope of top-tier journals (Chou, 2014), scholarship may perpetuate the limited concerns of previous authority, leaving unilluminated, whether by interest-serving intention or unintentional omission, phenomena beyond the light of established concepts and theory. We have shown in this chapter that academic discourse is regularly employed to promote political, economic and other ideological concerns within education in ways that affect students' growth and potential.

As long as mainstream academic discourse and educational practice in Taiwan remain blind to salient sociocultural features and marginal educational phenomena, it is little wonder that the answers for Taiwan's gifted education and talent development and education reform yield paradox, uncertainty and anxiety. Fortunately, the bricoleurs can feel their way over the boundaries, for recognising and manipulating such limits and constraints is the bricoleur's *modus operandi*.

Limitations

Naturally, there are limitations, both to the bricolage approach and this chapter. To overcome the focus on a singular subject or limitations of a single method or theory (Kincheloe & Berry, 2004), the use of bricolage is inherently multidisciplinary and multitheoretical (Kincheloe, 2005). Yet this subjects it to concerns of interdisciplinarity (e.g. Friedman, 1998) and epistemological relativism (e.g. McLaren, 2001). However, the continued use and development of bricolage as a methodology within various fields attests to its potential for making substantive knowledge contributions. Specific to this chapter, in presenting a novel perspective, we acknowledge that many aspects of the phenomena described have yet to be substantiated with extensive empirical support in academic literature. We acknowledge a need for further research on the roles of competitions and contests and the strength of the salience of the concepts employed in this sociocultural understanding of GATE in Taiwan.

Further, a critical reading of this chapter is warranted. For instance, we acknowledge a tenor of methodological nationalism (Darian-Smith & McCarthy, 2017) that treats the nation as a stable container for homogenous subjects. Taiwan has experienced waves of historical colonisation and immigration, and the creative results of rebalancing tensions have had painful, violent ends for many (Morris, 2004), far from the standard sense of harmonious. Changing demographics in Taiwan today are imbued with creative tension speaking to what it means to be Taiwanese and how the government and society may better acknowledge, reflect and accommodate a range of identities and experiences. The framing of this chapter is not intended to essentialise any particular form of Taiwanese identity nor over-ascribe the pervasiveness of any particular philosophical heritage (e.g. Confucian or Chinese), while the treatment of government, education system or society as cohesive wholes is not intended to negate the myriad disjunctions between assembled elements of the aggregated conceptual containers. We hope that the philosophical underpinnings of the harmony model of creativity, with its embrace of both/and logic, will enable readers to appreciate and utilise these tensions as necessary aspects of this co-creative meaning making process in which we are engaged. Despite these limitations, we believe we still offer contributions with the potential to stimulate further research and action.

Conclusion

We believe that interrogating the motivations and sociocultural attributes of GATE initiatives is essential for this moment as new technologies begin to disrupt educational and occupational landscapes. The perceived global reach of neoliberal capitalism proscribes the nurturance and deployment of talent for both collective economic competitiveness and cultivation of modern identity. Yet, at the same time, substantive changes to ways of life are imminent around the world and vulnerability is on the rise; reduced security and increased instability visit us unequally. According to McKinsey Global Institute (2017), with current technology,

nearly half of work activities worldwide can potentially be automated, while a third of tasks in 60% of jobs are potentially automatable (p. 21). Does this mean more diverse work tasks (Susskind in Mahdawi, 2017) or jobs characterised by creativity, unpredictability and complex relationships (Ford, 2015)? How will we respond to tomorrow?

Education is at the forefront of this response, whatever form it takes. Scholars, practitioners and policy-makers are indeed working hard to adapt to changing global and local challenges and opportunities. In Taiwan, rising socioeconomic inequality makes the need to reach diverse learners all the more imperative. Efforts to move away from exam-based achievement in traditional academic areas as primary criteria for the identification of ability and to open pathways to success and further development of gifts and talents must still reckon with meritocracy. As we argue in this chapter, policy intentions and the realities of practice are not yet, nor may they ever be, fully aligned. We offer an exploration of Taiwan as an example of how the engagement of educational reforms and initiatives with local sociocultural conditions is a crucial component of the outcomes of those efforts. The stakes are high, as it is children who bear the burden of our shortcomings. As part of the effort to create and think with new paradigms in GATE research and practice appropriate for the realities of the twenty-first century (Dai, 2016), we hold that much can be gained from moving towards and working with socioculturally informed understandings of complex phenomenon.

Cross-References

- ▶ [Attuned Pedagogy: The Artistry of Differentiated Instruction from a Taiwanese Cultural Perspective](#)
- ▶ [Gifted Education in the Asia-Pacific: Lessons from the Past for the Future](#)
- ▶ [In Search of an Explanation for an Approach-Avoidance Pattern in East Asia: The Role of Cultural Values in Gifted Education](#)
- ▶ [Identifying Underrepresented Gifted Students: A Developmental Process](#)
- ▶ [Socio-Cultural Perspectives on the Talent Development Mega Model](#)
- ▶ [Trends and Challenges of Creativity Development Among Selected Asian Countries and Regions: China, Hong Kong/Macau, Japan, Malaysia, and South Korea](#)

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