

## Fostering musical creativity of students with intellectual disabilities

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*Published in:*  
Music Education Research

*DOI:*  
[10.1080/14613808.2020.1862777](https://doi.org/10.1080/14613808.2020.1862777)

Published: 01/01/2021

*Document Version:*  
Peer reviewed version

[Link to publication](#)

*Citation for published version (APA):*  
Wong, M. W. Y. (2021). Fostering musical creativity of students with intellectual disabilities: Strategies, gamification and re-framing creativity. *Music Education Research*, 23(1), 1-13.  
<https://doi.org/10.1080/14613808.2020.1862777>

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Title: Fostering musical creativity of students with intellectual disabilities: Strategies, gamification and re-framing creativity

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This work was supported by the General Research Fund of Hong Kong Research Grants Council, Grant no.: 12603817

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Fostering musical creativity of students with intellectual disabilities:  
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Abstract

In Hong Kong, the principle of ‘one curriculum framework for all’ applies to all students, including students with special educational needs (SEN) (EDB, 2020). Students with intellectual disabilities (ID) are expected to achieve the same learning targets as their counterparts in mainstream schools. Within this common curriculum framework, students (age 6 to 14) study Music with one of its overall aims “to develop creativity” (CDC, 2003. p. 11). This qualitative multiple case study reports a sample of nine music teachers fostering the musical creativity of students with ID. A discussion of the findings reveals that in this sampling: (1) instructional strategies focus on the process not product of musical creativity, (2) creative fostering strategies embody gamification and (3) these music teachers re-frame creativity as being innate and commonly held by their students with ID.

(134 words)

Key words: Music, Special Education, Intellectual Disabilities, Creativity, Gamification, Hong Kong.

Fostering musical creativity of students with intellectual disabilities:

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### Overview

This study to observe music teachers drawn from across Hong Kong's special schools for students with mild, moderate, and severe intellectual disabilities (ID), seeks to contribute to three areas of expertise: the nature of creativity, gamification pedagogy and third, classroom practice that fosters musical creativity. The Literature Review section follows the above sequencing: from theories about creativity, through pedagogy that fosters creativity to reported examples of creative music classroom practice. The Findings section, drawn from nine cases of special schools music teachers, comprises observations of and reflections by them. Given the practical-basis of these findings, the Discussion section begins with a consideration of the reported practice. This practice then informs a discussion of the underpinning pedagogy which in turn informs a discussion of creativity theory.

In Hong Kong education, one of the overall aims of the music curriculum is “to develop creativity” (CDC, 2003, p. 11). Accordingly, this study begins here by considering the nature of creativity.

### The nature of creativity

The field of creativity research, once exclusively sited in the discipline of psychology, is now multidisciplinary (Chan, 2014), and subject to multiple perspectives (Abdulla &

Cramond, 2017). Summarising this shift, Runco and Jaeger (2012) state:

“the standard definition of (judging) creativity only pinpoints which criteria must be used; it does not say anything about who is to judge each, and who is to judge the judges” (p. 95).

The agreement on ‘which criteria must be used’ remains in contention in the field of psychology. Guilford (1950) expresses his sense of its ambiguity: ‘creativity is the characteristic of creative people’ (p. 444). For Barron (1955), ‘creativity’ has two criteria: *uncommonness* and *adaptive to reality*. Rhodes (1961) proposed that the creative process formed a four-P framework, Person-Process-Press-Product. More recently, Runco & Jaeger (2012) proposed that creative products need display *originality* and *effectiveness*, contested by Simonton, (2012) who added *surprise*. Subsequently Runco and Simonton then argued for creativity having only one *originality* (Runco, 1988; Simonton 2012).

This uncertainty amongst academics is also reflected amongst music teachers, Kladder and Lee (2019) report:

‘define creativity as a novel or new idea resulting in a formalized product ... that creative students are risker-takers, persistent, and often think outside the box ... (that) the classroom environment was perceived as important to the creative processes ... providing space for collaboration enhanced creative thinking’ (p. 395).

The creativity criteria of Kladder and Lee (2019) suggest a four-point framework comprising: product, attitude, environment and collaboration. Although citing different criteria from the four-P framework posited by Rhodes (1961), both share an implicit recognition that creativity criteria are interactive.

Where creativity is dependent on unpredictable interactions, attempts to define which criteria must be used when judging the product of the unpredictable interactions that form creativity, remain contentious. Agreement about ‘who is to judge’ and ‘who is to judge the judges’ remains in contention. James, Clark, and Cropanzano (1999) noted that people, including researchers, ways of judging creativity highlight the dilemma of perspective: in the West, an unengaged music classroom may be a site where a great deal of creative pupils’ effort; whereas the same classroom judged from an Asian-perspective, may be perceived as anti-social, undisciplined and hence the antithesis of creativity. More recently, Walia (2019) noted their concern that the dynamic process of creativity remains a contentious process to judge. Taking music-practice as an example from a Western-perspective, it may be judged as displaying the dynamic process of creativity; however, from an Asian-perspective, it may be judged in terms of demonstrating self-discipline and personal effort.

The contentious nature surrounding ‘who is to judge’ and ‘who is to judge the judges’ is highlighted not only by Western or Asian cultural perspectives, but also by the subtle impact of labeling, such as evoked by society’s expectations of special education and students with intellectual disabilities (Hardman, Drew, & Egan, 1999; Samkange, 2015). It is this milieu that frames one of this study’s research questions: *What can observations of the special school music classrooms add to our understanding of creativity?*

## The Pedagogy of Gamification

Gamification has been defined as the “use of game design elements in a non-game context” (Deterding, Dixon, Khaled, & Nacke, 2011, p. 9). Justifying this transfer of ‘game design elements’ into the non-game context of education, Kalinauskas (2014) makes the sociological observation that Generation Y, or the Millennials, are acculturated to being simultaneously stimulated, entertained and engaged. For education to remain effective and relevant to a generation of students acculturated to simultaneously being stimulated, entertained and engaged (Rock, 2004). Lee and Hammer (2011) argue that:

‘Gamification can change the rules, (thereby enhance) ... students’ emotional experiences, their sense of identity and their social positioning’ (p. 2)

Gamification in education has attracted a range of critiques (Caponetto, Earp, & Ott, 2014; de Sousa Borges, Durelli, Reis, & Isotani, 2014; Marti-Parreño, Méndez-Ibáñez, & Alonso-Arroyo, 2016). As an emerging trend, gamification in education requires more research to determine how the motivation of the learners can be influenced (Dicheva et al., 2015). It also requires more evidence to support the long-term benefits of gamification in educational contexts (Dicheva & Dicheva, 2017). However, the value of such critiques have been challenged either for their limited focus as compared with the focus of bibliometric analyses, terminology and constructs (Caponetto et al., 2014; Marti-Parreño et al., 2016); or the limited number of base-studies as compared with the work of other scholars (de Sousa Borges et al., 2014; Dicheva et al., 2015; Dicheva & Dicheva, 2017). Majuria and his

associates (2018) report that gamification in education motivates learners' sense of achievement after reviewing more than a hundred of research.

Applying gamification elements in education means to include

“(1) Self-elements which get students to focus on competing with themselves and recognizing self-achievement and (2) Social-elements stimulating interactive competition or cooperation that put the individual in a community with other students” (Hsin-Yuan & Soman, 2013, p. 3).

As the context of this paper is special schools for students with intellectual disabilities within an Asian milieu, this study addresses the following research question: *What is the contribution of gamification to fostering Asian students' creativity in special schools?*

#### Identifying a gap in our understanding of Musical creativity

In the field of music education, definitions of and approaches to research in musical creativity are diversified. Mazzola and his associates (2011) consider music as a performing art, a context that defines creativity significantly different from that of other disciplines.

Burnard (2012a) argues that it is more appropriate to view musical creativity from a practice-based perspective that recognizes multiple approaches to practice, each embedded in different social, cultural and activity systems. As music comprises both performance and practice, it is therefore to be expected that the research literature about musical creativity, will not present a consensus view of musical creativity but rather reflect multiple perspectives.

For example, some studies report that the process of music creativity is non-linear (Girdzijauskiene, 2015), individualized (Nevels, 2012), or related to non-musical factors,



such as interests and engagement (Crawford, 2013), as well as social interrelationship arising from collaboration (Dobson & Littleton, 2016).

Attempts to quantify music creativity include the Consensual Assessment Technique (CAT) which seeks to minimize deviation between judges' personal knowledge and thereby enhance assessment reliability (Hickey, 2001; Priest, 2001, 2006; Bangs 1992; Stefanic & Randles, 2015). Alternatively, there is the Musical Expression Test which employs a multi-method framework for measuring musical exploratory behaviors and products (Barbot & Lubart, 2012); or the Cantometrics which assesses and compares students' compositions (Hickey & Lipscomb, 2006), or the Experience Sampling Forms for assessing students' composing experience and their creative output (Byrne, MacDonald & Carlton, 2003). Common across all such tests is that their reliability remains defined by context.

Where context defines research results, reported findings will not be uniform but spasmodic. For example, whereas some studies report music's impact on child development (Swanwick & Tillman, 1986) or social development (MacDonald & Miell, 2000), other studies reverse the connection by positing that students' musical creativity is influenced by sociological or psychological factors (Kiehn, 2003), or formal and informal instructions and prior musical experiences (Burnard & Younker, 2002). Other studies broaden the research-context by reporting that students' musical creativity can be enhanced by teachers' feedback (Byrne et al., 2003), by reflective and collaborative practices (Gruenhagen, 2017);

by the opportunities for exploration (Kemple, Batey & Hartle, 2004) and the availability of music technology (Adkins, Summerville, Knox, Brown, & Dillon, 2013; Triantafyllaki, 2016).

Where the research context is special music education, reported findings reflect shifting perceptions of its extra-musical benefits. For example, musical creativity is reported as being therapeutic (Osmond & Miller, 1995; Eaglestone, 2008), enhancing cognitive processing (Portowitz & Klein, 2007) or fostering the cognitive development and social esteem of high risk children (Portowitz, Lichtenstein, Egorova & Brand, 2009). More recently, music is seen as improving the quality of lives of people with special needs (Miranda, 2010) or improving their social adaptation (Urazaliyeva, Kulmanova, Yerbolat, Zhusupova, Omirbayeva, Sultanova, & Akhmetzhanova, 2014).

Where reported research considers the musical creativity of students with special educational needs, findings are both sporadic and reflect low-expectations. For example, students with special educational needs improvise music with an organized structure (Orsmond & Miller, 1995); develop their social and music skills requires both opportunities and positive support (Bell, 2008); make music composition with the support of digital and technological devices (Adkins et al., 2013); and finally, students with special educational needs who create music do so at their pace of musical development (Ockelford, 2015). Given the acknowledged need for research on creativity in the ID music classroom and its complete

absence within the Hong Kong special education system (Fine, Danek, Friedlander, Hocking & Thompson, 2019), this study seeks to address this significant gap in the literature.

#### Musical creativity: Pedagogical practice in the mainstream classroom

Where research seeks to identify means to support musical creativity, consistent findings suggest the application of technology (Coss, 2019; Triantafllaki, 2016; Wise, 2016; Ferrari & Addressi, 2014; deLima Keller, Pimenta, Lazzarini & Miletto, 2012; Reynolds, 2002; Stauffer, 2001) and appropriate pedagogy (Burnard, 2012; Tafuri, 2006; Morin, 2002; Wiggins, 1999).

Common to these studies is the finding that the activation and the development of students' musical creativity are both dependent on the teachers' creative design and exploration of tasks. Crystalizing this commonality, Burnard (2010) states that fostering mainstream students' creativity means:

“allowing children choice and ownership of their learning, time for reflection, creating a stimulating environment; an enabling context within which posing questions and play, innovation and risk-taking, being imaginative, self-determined and intentional. The pedagogies which foreground flexibility of space and time and engage the imagination are more often those in which the teachers position themselves off-centre stage, ... and promoting learning through the children's self-chosen activities and interests (p. 10).

If these are the pedagogies that work for mainstream students, what instructional strategies would work for students with ID?

#### Contextual background of this study

In Hong Kong, the policy for special education states “students with special educational needs are to receive education in ordinary schools as far as possible or in special schools when necessary” (EDB, 2019a). Students identified as having intellectual disabilities [ID] are

commonly placed in special schools. All special schools in Hong Kong are funded by the government. There are altogether 41 special schools for students with ID (EDB, 2019b) – 10 schools for students with mild ID; 14 schools for students with moderate ID, 7 schools for students with mild or moderate ID, and 10 schools for students with severe ID (CHSC, 2020). Implementing the non-discriminatory principle of “one curriculum for all”, students with ID undertake the same curriculum and learning targets as their counterparts in mainstream schools (EDB, 2020).

Music is studied by all students (age 6 to 14) and has mandated, as one of its overall aims “to develop creativity, the ability to appreciate music and to effectively communicate through music”, and one of the four major learning targets for studying music is “developing creativity and imagination” (CDC, 2003, p. 11). Music teachers in both mainstream schools and special schools for children with ID are expected to implement school-based music curriculum that include performing, listening and creating activities. Although the curriculum and learning targets are centrally prescribed, school-based music curriculum design and adaptations for students with ID are the responsibility of music teachers (Wong, 2015).

As there has been no research into the instructional strategies that music teachers employ for fostering musical creativity in Hong Kong special schools, this study poses the research question: *What instructional strategies are employed by these music teachers to foster musical creativity in Hong Kong special schools?*

## Research Methodology

This is a qualitative multiple-case study employing purposeful sampling (Merriam and Tisdell, 2016; Stake, 2005). The research context is music teaching in Hong Kong's 41 special schools from which population is drawn a total of nine cases: three music teachers from special schools for children with mild ID, three from special schools for children with moderate ID and three from special schools for children with severe ID. Sampling criteria were:

- (1) The participant is an in-service teacher who teaches music in a Hong Kong special school for children with mild, moderate or severe ID.
- (2) The participant allows the researcher to observe and video record his/her teaching in one of his/her music classes for four consecutive lessons during the research period (AY 2017-2019). The choice of music class is left to the convenience of the participant.
- (3) The participant attends a face-to-face video-elicitation interview after every observed lesson to solicit his/her reflections on instructional strategies he/she believes to be useful for fostering musical creativity of students with ID.

After contacting all special schools for children with ID, nine music teachers volunteered to participate in this study. Pseudonyms are used in reporting to ensure the anonymity of the participating teachers. Personal profiles of these nine cases are shown in Table 1.

INSERT TABLE 1 HERE

The research tools comprise classroom observation and face-to-face video-elicitation interviews. Classroom observations comprised four consecutive music lessons of each participant's music class during the research period (AY 2017-2019). Interviews were conducted after each of the classroom observations, allowing participants ample time to reflect on their classroom decision making process, their interpretation and application of pedagogic choices and their students' behaviors and performances (VanBraak, DeGroot, Veen, Welink, & Girolodi, 2018; Nguyen, McFadden, Tangen, & Beutel, 2013). Each case-study interview was scheduled at the convenience of the participant and extended for more than an hour.

Using stop-start video recordings of their music lessons as an elicitation tool, each participant music teacher narrated and explained their individual pedagogic choices and instructional strategies they thought foster musical creativity of students with intellectual disabilities. To identify both the creative musical behavior of their students and the instructional strategy(ies) that stimulated those creative behaviors, each interview employed the consensual assessment technique (CAT) (Baer & McKool, 2009; Amabile, 1983). The CAT is considered to be an effective method for assessing the quality of creative products and processes independently by the observers who are knowledgeable and familiar with the domain of the creative products or processes. As the participants and the researcher of this study possess the knowledge of teaching music to students with ID, the researcher could use

prompt questions at appropriate moments of the video-elicitation interview to stimulate the participants to provide further explanation about their thoughts and interpretation about students' musical creativity.

The data collection procedure mentioned above was applied across all nine cases and standardized against both a pre-set observation guide and a set of semi-structured interview guide/prompt questions. All observations and interviews were conducted by this study's sole, non-participant researcher and interview transcriptions were verified by the participants. Music lessons, interviews, transcriptions and data analysis were conducted in Cantonese, the most commonly spoken Chinese language in Hong Kong and the medium of instruction in government-funded special schools. Translation of the data reported here in English was made by the researcher who is fluent in both languages.

### Findings

The nine cases studies are reported here in three groups reflecting the three categories of children's ID, i.e. mild, moderate and severe. Cited quotations are extracted from the data of the post-lesson video-elicitation interviews. For convenience a summary of these findings is provided in Table 2.

INSERT Table 2 HERE

Three cases from schools for children with mild ID.

Ada, Ben and Clara taught in special schools for children with mild ID. Ada selected a

music class of Key Stage 1 (age 6-8) with eight students, Ben selected a music class of Key Stage 3 (age 12-14) with five students, and Clara selected a class of Key Stage 3 (age 12-14) with 14 students. Reflecting different school and classroom contexts, Ada, Ben and Clara presented differing learning activities to develop their students' musical creativity. Ada used music-induced movement, singing games and playing call-and-response rhythm games with classroom percussion instruments; Ben guided students to use mobile apps for composing music sound tracks; Clara used music-induced movement, composing rhythm patterns for accompanying songs, and resetting lyrics for familiar songs.

Ada's use of music-induced movements for fostering students' musical creativity were:

- (1) "turn-taking" to encourage students to create movements that were different from others;
- (2) verbal feedback to encourage students to create more; and (3) repeating the same activity but with different movements.

Ada: "When I conduct listening activities, they will take turns to create movements and I would remind them to create movement that is different from each other. Then they will have to create some more new movements. Sometimes they just follow what I did or what their classmates did. I would ask them to try again and encourage them to do something different. ... After playing music-induced movements several times, some of them might have developed new movements when seeing their peers' creative movements. Repeating the same activity provides them with more opportunities to show their musical creativity."

Ada's strategies for fostering musical creativity in singing activities conflated students' repeated opportunities for experimentation with individual percussion instruments to accompany their singing.



Ada: “When I teach them to sing, I also let them choose a percussion instrument to play along with singing. I usually lead them to sing the song repeatedly. Every time we repeat singing the song, I would ask one of them to select an instrument to play along with our singing. I’ll let them explore the ways to play along with the songs.”

In composing rhythm for fostering musical creativity Ada used call-and-response strategy.

Ada: “I often play call-and-response rhythm games with my students, so they are very familiar with it. Some students are more ready to create new rhythm patterns, but some could only follow. I’ll continue to play call-and-response with them and hope that more students can create new rhythm patterns.”

Ben encouraged his students to creatively compose music using a mobile app. He adopted a step-by-step approach before letting students to explore sounds freely, and gave individual help whenever necessary.

Ben: “Before I let them use the App, I taught them some basics about melody writing. I set limits on the number of bars and compose a melody with them and sang the melody to them so that they know how their choices actually sound. This gives them some concrete experience of melody writing and example or a framework to start with. ... I asked them to work on only one sound track in every lesson. I prefer teaching them step-by-step before letting them explore the App freely. I teach them a new function in every lesson. I also guided them individually and help them to familiarize themselves with the App.”

To develop their imagination, Ben guided his students to analyze and compare sound effects.

Ben: “I taught them to analyze and compare the sound effects through listening because analytical listening can help them to develop imagination. Imagination is essential when they make sound effects or mix sound tracks or improve sound tracks.”

Clara highlighted praise as an effective strategy for fostering her students’ creativity in music-induced movements.

Clara: “Whenever I praise them, they’ll be more eager to create more alternatives in music-induced movement.”

To foster creativity in rhythm composing, Clara employed grouping, assessment strategies and giving more time for activities and show time.

Clara: “I had to spare more time for composing activities and show time. I assign them into small groups of two or three to compose rhythm patterns. The strong ones can lead and help the weaker ones to try different rhythm patterns. Show time is important for them to share their work with others and learn from others work. I used questions, verbal feedback and hints to help them to think about the directions for improvement. Whenever I give them some hints, they’ll be enthusiastic to try more creative alternatives in composing rhythm patterns. My questions and hints also help them to express themselves better in peer assessment and self-assessment. These assessment strategies can enhance their ownership of their work and their musical creativity.”

Three cases from schools for children with moderate ID

Diana, Ellen and Fanny taught in special schools for children with mild ID. Diana selected a music class of Key Stage 3 (age 12-14) with ten students, Ellen selected a music class of Key Stage 3 (age 12-14) with eight students, and Fanny selected a class of Key Stage 2 (age 9-11) with nine students. To develop their students’ musical creativity, Diana employed iPads to guide her students to record and edit sound tracks; Ellen used Chinese instruments to stimulate her students to explore different sounds and ways of playing, while Fanny taught her students to sing and rearrange melody using limited notes.

Diana regarded the use of music technology as a very effective tool to foster her students’ musical creativity.

Diana: “The ‘record’ function is an easy function for them to record the sounds that they explored on the iPad. The music arrangement functions are easy for them to use too. They can explore how it sounds like when they move the sound track here and there and alter the sounds by pressing the buttons of different music arrangement functions.”

Ellen encouraged students to choose, explore and respond through call-and-response with Chinese percussion instruments.

Ellen: “I played call-and-response with Chinese percussion instruments while I sang

familiar greeting songs with them. This is a way to develop their musical creativity through choosing, exploring and responding with the Chinese percussion instruments.”

To engage her students better in the learning process, Ellen designed many small tasks along with more time for their completion. To develop their imagination, she prepared simulated playing of Chinese instruments, associated each with the timbre of Chinese instruments, and encouraged students’ responses through music-induced movements.

Ellen: “I planned many small tasks in every lesson and allow more time for them to familiarize with the music and activities. These were helpful to engage students in the learning activities. I prepared simulated Chinese instruments for them to play when listening to music of that instrument. Simulated instruments are toys in their eyes. Playing with the simulated instruments can help them to develop imagination of timbre and sound production. Some of them move with the simulated instruments along with the music they heard. Their movements illustrated their musical creativity.”

To build student confidence and ownership of creativity in performance, Fanny employed microphones and recorded performances which were then reviewed. ,

Fanny: “With the use of microphones, my students would be brave enough to participate in singing activities even though many of them had speech disabilities. They would make up the sounds as if they were singing. When they review their own performance, my feedback and their friends’ applause could strengthen their self-confidence to sing in their ways. It’s a feeling of ownership of their performance. Their ways of making the sounds with their voice showed their musical creativity.

To encourage music exploration, Fanny notated sound and the chime bars with color stickers, set individualized tasks and gave individual advice.

Fanny: “I showed them how to alter a selected phrase of the song. I set the number of notes by limiting their chime bars according to the harmony of the song as well as their ability. The more capable ones may have more chime bars and bigger task while the less capable ones may have less chime bars and smaller task. It’s for helping them to get the notes that can fit my piano accompaniment that give it a holistic feeling. They may explore the arrangement with the available notes/chime bars. The color stickers on the chime bars and the removable color stickers on the practice score helped them to notate

the sound that they preferred and show their work to us. I walked around to give individual advice and encouragement for exploration.”

Three cases from schools for children with severe ID

Grace, Helen and Ivan taught in special schools for children with severe ID Grace selected a music class of Key Stage 2 (age 9-11) with three students, Helen selected a music class of Key Stage 3 (age 12-14) with two students, and Ivan selected a class of Key Stage 2 (age 9-11) with eight students. To develop their students’ musical creativity Grace guided her students to listen to Chinese instrumental music and explore sounds with classroom percussion instruments; Helen selected marching music along with drum playing on iPads, while Ivan guided his students to explore sounds via a Makey Makey electronic system (Deck & Moyer, 2020), and iPads.

Grace’s students were visually impaired. To ensure that her students could play and be tactile with musical instruments Grace adapted and placed them within her students’ easy reach.

Grace: “In addition to severe intellectual disabilities, they have multiple disabilities. I adapted the instruments for them, and they had their own ways of playing instruments. They couldn’t see clearly, so I had to put the instruments near to their hands for them to touch and explore while listening to the festive Chinese instrumental music. I don’t know which instrument they may like because their ability of communication was so low, so I let them play with different instruments in every lesson and observe their ways of interacting with the instruments and guess their preferences.”

To ensure familiarity and allow their creativity to fully emerge, Grace repeated her students’ musical experience many times.

Grace: “I repeated the music many times so that they could have ample opportunities to

internalize the music and to show their creativity through reacting with music with their body movements, and their interactions with the percussion instruments. Their body movements may be slight, but they were using all their might to move and react with music. When they were more familiar with the music excerpt, I edited the sound track to leave blank at some points. When they noticed that my music had stopped, they would start to add in their music with the instruments in hand.”

Helen’s students had physical, visual and hearing impairments. To address these multiple disabilities, Helen magnified the sound by using a recorder pen; selected marching band music to stimulate her students’ motivation to move with music, and an iPad drum machine to facilitate her students to explore sounds.

Helen: “I put the recorder pen close to their ears so that they could listen to music more clearly. The music (marching band music) was so rhythmical and stimulated them to move with music. Their muscles were weak and could not play real drums. The use of iPad facilitated them to explore the use of drums to play along with the music and show their creativity.”

To free her students’ physical responses when listening to music, Helen had them lie on floor mats.

Helen: “I put them lying on the floor so that they could relax and move freely; allowing freedom to move on the floor mat, and more time for listening.”

Exploiting the electronic sound possibilities of Makey Makey, Ivan reported both enhanced students’ motivation and engagement with exploring a range of sound-possibilities.

Ivan: “I prepared Makey Makey for them to explore sounds. Some of them were so motivated to find out that they could make sounds with water, and spent more time to explore different ways of playing with water for making different sounds.”

Ivan also exploited the possibilities of the iPad for recording students’ work to enhance their sense of ownership and musical creativity.

Ivan: “I prepared iPad for my students to play with apps and recorded the sounds that they made. They were so happy to hear their own works when I share their works in

class. They were so motivated to explore music making with the apps. It's so important to allow them to choose the way they like when exploring sounds with the App.”

### Discussion

Given the nature of the research findings comprise classroom observations; the following discussion addresses three research questions of this study. The context of these findings is common to many music teachers of students with ID. Although the curriculum and learning targets are centrally prescribed, the school-based music curriculum design and implementation are the responsibility of the individual teacher (Wong, 2015). Given the absence in the literature on this area, one focus of these findings is therefore is to address the research question: *What instructional strategies are employed by these music teachers to foster musical creativity in Hong Kong special schools?*

An initial impression is that respondents chosen array of pedagogic instruments was limited. During the 36 classroom observations (9 teachers each observed over 4 lessons) and across the spectrum of (mild, moderate and severe) ID, the reported pedagogic instruments are few: percussion & Chinese musical instruments; mobile apps for music composition, iPad musical features and the Makey Makey electronic system. Yet, despite this limited array of instruments classroom observations did record evidence of teachers in Hong Kong special school classrooms attaining the learning target of fostering musical creativity. This observation suggests that although pedagogic instruments are helpful, what foster musical creativity are the teacher's implementation strategies.

Observed implementation strategies may be summarised as ‘giving students time to explore sounds’. For example, music-induced movement, marching music, singing games and playing call-and-response rhythm all have in common the strategy of exploring sounds. This exploration is student-based and given sufficient classroom time to facilitate individual, creative musical responses. Although reported instructional instruments appear limited, the findings suggest a key to fostering musical creativity in Hong Kong special schools is the implementation strategy of giving students ample time to explore sounds.

These findings resonate with the literature. The observed lessons were structured (Orsmond & Miller, 1995); the students with ID were provided with both learning opportunities and positive support (Bell, 2008); digital and technological devices did enhance music making (Adkins et al., 2013) and finally, students with ID proceeded at their own pace (Ockelford, 2015). However, these findings also strongly resonate with Burnard’s (2010) description that fostering mainstream students’ creativity means of allowing children to have time, space, opportunities and environment for exploration, making choice and developing ownership of learning.

To explain why pedagogies that serve mainstream students are also, as here, reported as serving students with mild, moderate and severe ID, the reported findings are now discussed in terms of gamification. Specifically the discussion now addresses the research question:

*What is the contribution of gamification to fostering Asian students’ creativity in special*

*schools?* Gamification has been defined as the “use of game design elements in a non-game context” (Deterding et al., 2011). The reported classroom observations display a transfer of technology, i.e. iPad and the Makey Makey electronic system. More significant is the finding of giving students a lot of time to explore and interact with sounds freely. Explaining the significance of allocating more time for individual student encouragement and response is the observation by Lee and Hammer (2011) that gamification “can change the rules”, and enhance “students’ emotional experiences” (p. 2). In these reported observations of students with mild, moderate, or severe ID, gamification can be identified in three significant areas. First, is the importance of being encouraged and given time to self-express. Second, is the conversion of the teacher-centered approach of teaching music into students’ self-exploring sounds. By relaxing the time-pressure combined with enabling self-exploration which introduces elements of gamification appropriate to students with severe ID. Third, the use of instructional aids that were toys in the eyes of the students with ID, such as the simulated musical instruments, iPads with mobile apps and Makey Makey electronic system which engaged and motivated students well in the process of music creating and music making.

While the evidence here disagrees with those who questioned the influence of gamification on learners’ motivation (Dicheva et al., 2015), the same evidence supports the view that gamification enhances learners’ affordances, signaling achievement and progression (Majuria et al., 2018). The observed nine teachers employed, yet in their reflections, never



mentioned the term gamification. This absence, arguably, supports the view that gamification need not involve advanced IT skills but instead a lesson-plan re-focused: a re-focus that encourages students to compete with themselves, to acknowledge self-achievement; a re-focus that stimulates both interactive competition and cooperation to place the individual within a community of explorers of sounds (Hsin-Yuan & Soman, 2013).

The discussion now seeks to address this study's research question: *What can observations of the special school music classroom add to our understanding of creativity?*

The findings report the judging of creativity as a process. First, by individual students and their peers, then by individual classroom teacher, and then as observed by the researcher. This process echoes both view that the definition of creativity does not specify whom to be the judge for creativity and whom to be the judge of the judges (Abdulla & Cramond, 2017; Runco & Jaeger, 2012). However, the validity of this process is dependent on seeking congruence from diverse perspectives, a congruence achieved by this study's participants but not in the literature (Runco, 2013; Simonton, 2013; Barron 1955; Guilford, 1950). Noting this disparity, suggests that definitions of creativity are products of perspective located in context and as such, destined to be contentious.

To illustrate how perspective and context defines creativity, the following compares a recent study of Western music teachers with the findings of this Hong Kong study. Kladder and Lee (2019) define 'creativity as a novel or new idea resulting in a formalized product' (p.

395) whereas the findings here display creativity in students' informal individual expressions.

Rather than being considered as polar opposites, creativity as product or individual expression has been seen as a dynamic process (Walia, 2019). It is perhaps this interactive, dynamic process that Guilford (1967) had in mind when observing that creativity is the characteristic of creative people.

Reporting a dynamic process that fosters creative characteristics, the findings here reverses the view of Kladder and Lee (2019), that “creative students are risk-takers ... often think outside the box” (p. 395). Instead, the findings here are that students with ID, when encouraged both to take risks and expand their comfort zones, then display creative characteristics. This reversal views creativity not as elitist, but rather as innate – a characteristic that responds to nurture.

The findings here suggest a need to revise the notion of Kladder and Lee (2019) that “important to the creative processes (is) providing space for collaboration and enhanced creative thinking” (p. 395). Rather, the findings here suggest more specific classroom requirements than simply providing space and time. First, time is required for students to move from novelty to familiarity to musical ownership; then a gamification pedagogy that encourages students' risk-free experimentation, competition and self-development.

In summary, this study adds to our understanding of creativity by illustrating why attempts to define creativity are inherently contentious, and how it is helpful to re-frame

creativity as an innate characteristic, responsive to nurture.

### Conclusion

This study of music teachers that has drawn from across Hong Kong's special schools for students with mild, moderate, and severe ID addresses three areas of expertise. First, it identifies instructional strategies that foster musical creativity. Reported pedagogic instruments were few, highlighting the importance of teacher's implementation strategies, summarised as giving students time to explore sounds. Moving from considering classroom practice to pedagogic modeling, this study then reported the contribution of gamification to fostering creativity in special school music classrooms. The findings illustrate that gamification fosters classroom creativity by re-focusing a lesson-plan to encourage students with ID to compete with themselves, to acknowledge self-achievement; to stimulate interactive competition and cooperation and thereby placing the individual within a community of music explorers. Thirdly, the study sought to add to our understanding of creativity by illustrating why attempts to define creativity are inherently contentious, and the benefits that accrue by re-framing creativity as an innate, commonly held characteristic, that is responsive to nurture.

(6106 words)

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