

# **Nurturing personal and collaborative creativity through group playing by ear from recordings in formal music education**

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## **Abstract (150 words)**

This chapter discusses research on informal learning (Green, 2002) with particular focus on playing by ear from recordings in groups and how it contributes to the development of music learners' personal and collaborative creativity. Keith Sawyer's work (2007) on collaborative creativity has been used as a lens through which to examine and discuss four music programmes in the secondary school classroom and one in Higher Education that have adopted the approach. These programmes illustrate how group playing by ear from recordings in formal music education can nurture personal and collaborative creativity, enabling lifelong creative artists, and advocating for arts centrality in educational policies globally. The chapter concludes with recommendations on the role of the music educator and the contribution of technology in facilitating music learners' development of personal and collaborative creativity through group playing by ear from recordings.

## **Introduction**

Creativity, along with confidence building, self-directed and collaborative learning has been recognised as a core skill of the twenty-first century global learner and a salient human attribute that allows individuals and groups to engage in risk taking and problem solving (Ho & Chua, 2013; Jeanneret, McLennan, & Stevens-Ballenger, 2011; Trilling & Fadel, 2009). These processes raise aspiration, improve achievements and skills, unlock the imagination, and bring about lasting improvements in the quality of the learners' lives (CCE, 2010). There is also a consensus amongst researchers who study creativity (Burnard, 2012; Csikszentmihalyi, 1996; Haddon & Burnard, 2016; Odena, 2012) that it is vital in all societies, it arises in all people and therefore, it is important to nurture and promote in formal, non-formal and

informal learning settings across the lifespan. Gibson (2010, p. 608) argues that creativity ‘involves the ability to create meaningful, new forms’ by combining and synthesising already existing ideas and skills and therefore it is inherent to varying degrees in everyone. This chapter embraces this definition of creativity as its emphasis on synthesising existing ideas and skills reflects the work that musicians engage in when they copy music by ear from recordings in groups.

Nationally and internationally arts education is supporting a variety of activities that unlock children and young people’s creativity. Arts curricula, including music, are the nurturers and promoters of creativity in a school environment par excellence, often highlighting the transferable skills (increased convergent and divergent thinking, collaborative skills, self-management skills, problem solving) acquired through regular engagement with creative tasks such as listening, arranging, improvising, composing or performing music alone and with others. Although creativity is not confined to arts subjects, it is these subjects that are regarded as more creative than others perhaps due to ‘a greater amount of agency over the product’ (Edwards, Whittle, & Wright, 2016, p. 24). Nurturing personal and group creativity in arts education means that we encourage learners’ risk-taking, independence and flexibility (Cropley, 2001; Gibson, 2010); their sense of competence, autonomy and relatedness (i.e. their ability to connect with others and their community) (Creech, Hallam, Varvarigou, & McQueen, 2014; Deci & Ryan, 2000) and their curiosity and enjoyment (Green, 2008).

Creativity has often been viewed as a mystical human trait with musical creativity, in particular, being an elusive and contested term. Burnard (2012, p. 321) and Merker (2006) acknowledge that creativity in music is ‘changing, complex and multifaceted’ and that the breadth and depth of musical practices create the conditions for multiple understandings and ways of experiencing creativity. Likewise, Gibbs (2011) stresses that invention, one of the two

dimensions of creativity in musical improvisation (the other being 'originality'), can be taught and assessed.

Collaborative creativity through peer learning is a salient skill for 21<sup>st</sup> century artists (Guillaumier, 2016); especially young musicians who engage in group music making as part of their compulsory education, a portfolio career in music or as a recreational activity. This chapter discusses research on informal learning (Green, 2002) with particular focus on playing by ear from recordings in groups and how it contributes to the development of music learners' personal and collaborative creativity. Four music programmes in the secondary school classroom and one in Higher Education that have adopted playing by ear from recordings in groups illustrate how Lucy Green's work on informal learning approaches in formal music education can nurture personal and collaborative creativity, enabling lifelong creative artists, and advocating for arts centrality in educational policies globally.

### **Collaborative creativity and informal learning – synthesising two approaches**

Keith Saywers' work (2007) on collaborative creativity provides the theoretical lens for this chapter. Saywer (2007, p. xii) underscored that collaboration is the key to breakthrough creativity and he argued (op cit., p. 7) that 'group genius generates breakthrough innovation'. He identified guided and planned improvisation by jazz and theatrical ensembles as the 'purest form of group genius' because the creative performances 'emerge from everyone's equal collaboration (2007, p. 9). Furthermore, Saywer (2007, pp. 14-17), identified seven attributes of effective collaborative teams. Firstly, innovative ideas emerge over time and through the process of deep *listening* followed by all the team members. Then, the team members build on their collaborators' ideas. Only after several elaborations, the meaning of each idea becomes clear. This leads to the idea in focus being developed generating new questions. After several rejected ideas innovation finally emerges

and from the bottom up (the team members) – not from the top down (a manager, teacher, leader).

Within a music education context, Green (2002) found that in the informal realm of music making, popular musicians develop skills and knowledge by working on music they like; copying and embellishing it by ear using audio recordings. Learning takes place alone and in friendship groups; working largely or entirely independent of a teacher or other expert; playing whole ‘real-world’ pieces of music rather than simplified pieces; and integrating listening, playing, singing, improvising and composing throughout the process. Learning in these ways, popular musicians experience high levels of enjoyment and motivation and can develop advanced musicianship emphasising aural, improvisatory and creative aspects. A key component of the proposed pedagogy is that learners initially engage in playing by ear from recordings. This is how popular and vernacular (jazz, folk, traditional) musicians learn new repertoire and how they create new material either as improvisations or as compositions (Berliner, 1994; Green, 2002; Nettle & Russell, 1998).

Table 1 illustrates how the seven characteristics of creative teams articulated by Sawyer (2007) align with the process of playing by ear from recordings in groups as illustrated in Lucy Green’s work on informal learning approaches in formal music education (2008). Firstly, like in creative teams, music learners engage in playing by ear from recordings in groups. Over several weeks of this engagement, their creative musical ideas pass through different stages that allow their ideas to develop over time. These creative musical ideas emerge through *purposive listening* to the recordings as well as through listening to each other’s musical input and to fellow learners’ opinions on how to develop the performances of the pieces copied. In collaborative teams, the team members build on their collaborators’ ideas. In the same vein, in music groups the musical ideas develop through the process of imitation, invention and improvisation by building on the group members’ ideas. Progression is evident after a ‘cycle of success, deterioration, then improvement’ (Green, 2008, p. 52). Each

group's creative renditions of the pieces copied emerge after several weeks of trial and error and through the constant process of imitation, invention and improvisation. Creative teams follow a similar process by using a creative idea as a source for generating questions and rejecting ideas. The creative musical renditions are the result of collaborative team decisions, with the teacher acting as a guide and mentor used by the team as a resource rather than as an instructor. This is the equivalent of innovation being generated from the bottom up and not from the top down. Playing by ear from recordings in groups is therefore proposed here as an ideal activity for music programmes that aspire to nurture music learners' personal and collaborative creativity, two prominent twenty-first century attributes of global learners (Trilling & Fadel, 2009).

**Table 1: A relationship between the processes for effective collaborative creativity (Saywer, 2007) and the processes of playing by ear from recordings in groups (Green, 2002; 2008).**

<b>Processes for effective collaborative creativity</b>	<b>Processes of playing music by ear in groups</b>
1. Innovative ideas emerge over time	1. Playing by ear in groups takes place over several weeks and in different stages, which allowed music learners' creative ideas to develop over time
2. <i>Deep</i> listening followed by all team members	2. <i>Purposive listening</i> to the recordings and to fellow learners' musical contributions and expressed opinions is followed by all team members
3. The team members build on their collaborators' ideas	3. The musical ideas develop through the process of imitation, invention and improvisation at personal and group level
4. After several elaborations the meaning of each idea becomes clear	4. Progression is evident after a 'cycle of success, deterioration, then improvement'
5. As an idea is developed it generates new questions	5. Each group's creative performance emerges after several weeks of trial and error and through the constant process of imitation,
6. After several rejected ideas innovation finally emerges	

	invention and improvisation
7. Innovation emerges from the bottom up and not from the top down	6. The creative rendition of the pieces performed is a result of collaborative team decisions with minimal or no input from a teacher/ expert

### **Playing by Ear from recordings in groups in formal music education**

By ‘playing by ear’ this study refers to the process of playing music ‘without the aid of notation, without the visual stimulus of watching a live instrumental model, without verbal hints such as solfege’ (Musco, 2010, p. 49) and in particular through playing back from recordings (Green, 2012; Varvarigou, 2014; Varvarigou & Green, 2015). In the programmes discussed below playing by ear took place within groups of peers, through playing back from recordings. Therefore, it did not exclude the imitation of a model – seen and heard, as in the case of imitating peers’ practice, technique or interpretation of the music copied. Although Green’s work could be applied to learners across the lifespan, the programmes presented here include young music learners in secondary school education, and learners within Higher Education who aspire to a professional career in music.

The term ‘informal’ primarily indicates non-linear, cooperative learning, which is controlled by a social group rather than by an individual. There is ample evidence within music education literature that playing in groups enhances listening and technical skills; motivates learners to practise with direct links to increased achievement; and fosters an increased sense of belonging, autonomy, competence, and relatedness (Creech, Hallam, Varvarigou, McQueen, & Gaunt, 2013; Hallam & Kokotsaki, 2007). The significant role that the group plays in informal learning contexts contrasts with formal learning, where a teacher leads musical activities prescribed by a curriculum within an organised and structured context (Gullberg & Brandstrom, 2004). Nevertheless, Green’s informal learning pedagogy is not unstructured or unsystematic. On the contrary, it is ‘guided and planned’ (Sawyer, 2007,

p. xii) and it allows individual learners, music groups (and tutors) to engage in collaborative experimentation that supports the development of personal and collaborative creativity in music. The pedagogy provides a blueprint, which is not prescriptive, and the musical repertoire used covers a range of musical genres as well as invites the learners' input to choosing musical repertoire. These two salient features of the pedagogy rendered it popular internationally, influencing formal music education pedagogy across the UK, Canada and Australia<sup>1</sup>; Singapore<sup>2</sup>, Brazil<sup>3</sup> and recently Ireland<sup>4</sup>.

### **Nurturing personal and collaborative creativity through informal learning in the secondary school**

Musical Futures is a programme that started in 2003 with the aim of engaging secondary school learners aged 11-18 'in musical learning that is relevant to their everyday lives and that helps them connect in-school and out-of-school interests and experiences' (O'Neil & Bessflug, 2012, p. 25). Two key pedagogical approaches – informal learning (Green, 2002, 2008) and non-formal teaching are core components of the programme (Coombs, 1976; D' Amore, n.d.; Hallam, Creech, & McQueen, 2011; Ho & Chua, 2013; Mok, 2011). As mentioned earlier, informal learning refers to non-linear, cooperative learning where the learners control the learning process (Green, 2008). Ho and Chua (2013) and Rodriguez (2009) pointed out that informal learning does not mean unstructured learning. On the contrary, during informal learning, especially as scaffolded by Musical Futures, the learners collaboratively engage in a process of learning that takes them over different stages, and that

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<sup>1</sup> Musical Futures organisation:

<http://www.musicalfutures.org> (UK)

<http://musicalfuturescanada.org> (Canada)

<http://www.musicalfuturesaustralia.org> (Australia)

<sup>2</sup> An adaptation of the classroom project in Singapore:

<http://www.star.moe.edu.sg/resources/star-post-music-archive>

<sup>3</sup> <https://www.musicalfutures.org/musical-futures-international/informal-learning-brazil> (Brazil)

<sup>4</sup> <http://www.musicalfutures.org/musical-futures-international/musical-futures-ireland> (Ireland)

often 'happens to be material-, context- and learner-specific' (Rodriguez, 2009, p. 38). The teacher gives more autonomy to the learner and 'enters into a more flexible and dynamic relationship' (op cit. , p. 38) with them.

Coombs (1976, p. 282) emphasises that non-formal education encompasses 'greater flexibility, versatility, and adaptability than formal education' for meeting diverse learning needs of individuals and groups, 'and for changing as the needs change'. Within music education contexts, non-formal teaching often revolves around classroom workshopping, where the teacher responds to individuals' or groups' diverse needs through teaching strategies such as modelling and coaching. For instance, by questioning, providing help with finding pitches and making suggestions of holding instruments, posture and technique (Green, 2008). What is more, Mok (2011) and Hallam, et al. (2011) underscore that one of the core characteristics of non-formal music teaching is autonomy in the students' decision-making about the direction of the musical projects. For instance, at the heart of the informal learning strand of the Musical Futures programme is a 5- to 6-week module called 'Into the Deep End', in which students collaborate in friendship groups, decide upon their own music and instruments, engage in playing by ear from audio recordings and create new renditions of the music copied (Ho, 2013). This flexibility in music making allows the learners to 'focus much of their attention on testing and evaluating ways to communicate musical ideas' (Rodriguez, 2009, p. 44), which are exactly the processes recognised as supporting collaborative creativity (Sawyer, 2007) during copying recordings, improvising, composing and performing on an instrument.

Both informal learning and non-formal teaching can be facilitated through playing by ear from recordings in small groups. During playing by ear the emphasis is placed on 'the creative spirit rather than technical achievement', which nevertheless often motivates the learners to aspire to a higher level of technical attainment with confidence (Leong, Burnard, Jeanneret, Leung, & Waugh, 2012, p. 401). Findings from Green's work (2008), the Musical

Futures programmes in the different countries around the world, and programmes inspired by Green's informal learning approach in formal music education (Ho & Chua, 2013) acknowledged that listening to and copying recordings by ear within a classroom context is an effective way of developing high school students' listening skills – especially their ability to listen to the different layers of a musical piece. Furthermore, critical musicality (Costes-Onishi, 2016) and ensemble skills, particularly the students' sense of relatedness and collaboration (Ho, 2013; O'Neil & Bessflug, 2012) are also developed. **Finally, informal learning and non-formal teaching promote** collaborative creativity through students' understanding and appreciation of how music is put together, how their parts could match each other's (Hallam et al., 2011) and through creative problem solving that often occurred as a response to the students' technical limitations with the musical instruments they played (Ho, 2013).

The following sections discuss four music programmes within the context of secondary school all of which have been influenced by Green's (2002) seminal study on the ways that popular musicians learn. The first study is Green's (2008) application of informal learning strategies in 21 secondary schools in the UK. The second is Hallam et al. (2011) case study investigation of the Musical Futures programme in seven secondary schools in the UK. The third is Ho's study (2013) on informal learning with guitars with learners from two music classrooms in the same school in Singapore. Lastly, Chua's (2013) study is also located in Singapore and it examines how formal, non-formal and informal learning approaches can be integrated in a STOMP-inspired general music lesson module. These studies exemplify how informal learning and non-formal teaching within the secondary school context foster personal and collaborative creativity.

### ***Personal Creativity through informal learning***

Learners and tutors of the four music programmes talked about opportunities for personal creativity through playful experimentation with the instruments, the freedom to create ‘new’ renditions of the pieces copied and, at stages 4 and 5 of Green’s project (2008), music that they composed themselves. Throughout the stages of the programmes involving aurally copied music, the learners altered the music by omitting or inserting a few notes, changing the rhythm or duration of the notes, playing on different keys to the original (imitation); adding new phrases, such as introductory and concluding sections (invention); and by developing these alternations as improvisations or arrangements. This process happened both spontaneously and by design. Some responses from music learners participating in the four informal learning programmes appear in Table 2. Several teachers reported that as a result of the learners’ experimentation with musical material in small groups, their compositions (stage 4) and songs (stage 5) were more *‘musically interesting and sophisticated than usual’* (Green, 2008, p. 112); and that *‘the actual performance, the small group working, pushes them on farther, some kids have made tremendous progress in a year, playing drum kit in a concert, playing guitars or singing, it captures their interest and they go away and do extra work’* (A teacher cited in Hallam et al., 2011, p. 70) .

**Table 2: Supporting personal creativity through informal learning**

<p><b>Experimentation with musical instruments/body</b></p> <ul style="list-style-type: none"> <li>○ ‘Most of us like playing instruments [...] <i>Try out</i> things, <i>try out</i> new instruments. We get to learn what note is it like on different instruments’ (Ho, 2013a, p. 120)</li> <li>○ ‘Performing the claps. You can make like different clapping ways...is like you think about something new on your own...<i>create something new...yah...</i>’ (Ho, 2013a, p. 120)</li> </ul>
<p><b>Personal creativity through own music</b></p> <ul style="list-style-type: none"> <li>○ Justin: It’s really like easy when they leave you to do it by yourself, ‘cause you, like you think, you think of something, like <i>an idea springs to mind</i> and you just, <i>you go on the idea</i> instead of all the teachers going, ‘Oh no you got to, you got to do it this way’, and you can do it all by yourself, and it just sounds all good’ (Green, 2008, p. 111).</li> </ul>

- Marianne: It was, we had a lot of freedom and we could be very *creative*, and when you're in school you can't really be creative a lot of the time, so it was nice to just have an hour where we could just chill out and do your own things and *just experiment really*' (op cit, 112).
- 'We were able to *create our own music*. Learn to use different materials to make sounds' (Chua, 2013, p. 137)
- 'We learn a lot more music in terms to be able to "converse" using these terms during music lessons. We are given more *freedom to express our creativity*, for example, the teacher calls upon students to lead warm-ups, allow us to come up with our own STOMP performances and asks the students for *opinions* when deciding on the marking rubrics' (op cit., p. 137)

### ***Collaborative creativity through informal learning***

Collaborative creativity was evident when the learners supported each other during the process of creating their own renditions of the music and their own compositions. During the process of playful experimentation, new ideas emerged over time as a result of 'deep listening' to the music and other team members' opinions, and with no direct input from a tutor (see Table 3). Musicians listening to the learners' arrangements, improvisations or compositions often describe them as '*sparkling, creative gems*' (Green, 2008, p. 164).

### **Table 3: Collaborative creativity through informal learning**

- Tyler: Stop a minute. I've had a phat idea, yeah. I should come in first, yeah, I'll be on the drums, and I should go (plays a rhythm with the cymbal)
- Ian: Yeah, and you could have a steady beat. (Tyler plays the Dizzee Rascal drum rhythm)
- Chris: Oh, I wonder where you got that from!
- Ian: Yeah, but you could have Bob come in, and then we could come in on the guitars.
- Tyler: What do you mean, like walking in on the guitar?
- Ian: Yeah.
- Tyler: I could just be doing (plays a rhythm)...I could go (starts playing drum rhythm, Bob starts playing piano part). And then I will press play, and we can all go (starts playing fast rhythm drums). Did you hear that?! Shush listen! (plays fast rhythm again)
- Ian: That's wicked!
- Tyler: It kills your arms. I've had a phat idea. I could be going like that (plays rhythm) and then Bob just walks in, sits down at the piano, and when Bob sits down I could go (plays rhythm), and then

you come in, skid on your knees and go 'BOOOWWWEEEE!' And then I will be going (plays rhythm) (Green, 2008, p. 114)

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- 'I enjoy when we got to choose a song and re-sing it so we chose something from the charts and were allowed to sing and play background music to it, drums, basically like *recreating a band*. It's just like teamwork when it all comes together and you play it in front of the class and it actually sounds good.' (Hallam et al., 2011, p. 140)
- '... they [the learners] just keep going, they interrelate with the staff, suggest how work could be improved, have another go at it, and the resilience and the stamina to keep going has become an integral part of the teaching approach and so – the whole issue of *transferability*, resilience, *creativity*, *team-work*, judging when to be independent and when to be a member of the team is developing very nicely. I want to link across the school the *problem-solving approach*, and again the approach that the music team are using encapsulates that completely. So it's got everything we want as a teaching approach.' (Head teacher) (Hallam et al., 2011, p. 154)

In summary, the learners and teachers involved in the four informal learning programmes presented here underscored the contribution of informal learning (especially group playing by ear activities) and non-formal teaching to developing learners' musical skills, especially listening; personal and collaborative creativity, resilience, confidence building, problem-solving, and independent learning. These core 21<sup>st</sup> century skills are nurtured through engaging in exploratory and playful music making in groups. The following section presents original data from a programme that adopted informal learning and non-formal teaching in Higher Education and explores how this programme nurtured music learners' personal and collaborative creativity through the theoretical lens on effective collaborative creativity presented in Table 1 (Sawyer, 2007).

## Methodology

There has been little research to date on the ways that group playing by ear from recordings can be adopted in formal Higher Music Education contexts with music learners that have experienced a conventional Western classical musical education (Varvarigou, 2016,

2017a, 2017b). The original study in focus engaged forty-six, first-year undergraduate students in groups playing by ear from recordings, over the period of five weeks, for 40 minutes each week. This experience was part of a module called Practical Musicianship that aimed to allow students to establish a foundation of practical musicianship skills in a number of areas such as aural, harmonisation, keyboard, basic conducting and improvisation. Data were gathered through learners' weekly reflective logs (n=194), end-of-programme feedback forms (36) and learner interviews (n=4)(more information on the aims and methods of the programme can be found in Varvarigou, 2016, 2017b). The analysis focused on thematic discovery from the transcripts and was achieved through open, axial and selective coding (Creswell, 2007). During *open coding*, key words and key concepts emerged by a constant examination and comparison of the transcripts. Open coding was followed by *axial coding*, where blocks of categories grouped together to describe core phenomena related to the activity of playing by ear, in groups, in Higher Education. In the third step of the analysis, termed *selective coding*, key concepts emerged and validated the interrelationship of categories. The process of thematic discovery allowed the researcher to shift concepts around until relations of the categories with each other and with the collective dataset were achieved.

### **Nurturing personal and collaborative creativity through informal learning in the Higher Education**

This study adopted the same pedagogical approaches discussed earlier, namely informal learning and non-formal teaching: The music learners formed their own small groups, chose what instruments to play, and copied by ear some designated and free choice pieces. The role of the tutor was to explain the aim of the activity to the learners, which was to create 'their own versions' of the songs. The tutor encouraged group experimentation, but students were nonetheless free to aim for an exact copy or to aim for freer renditions rather

than accurate imitations of the original pieces copied, and to encourage them to engage in group experimentation. The experimentation with the musical material could include adding or omitting notes, or changing the dynamics, tempo, rhythm and harmony as long as they kept the flow of the music. Through working in small groups the musicians could practise leadership, demonstrate initiative and personal creativity, learn how to contribute to group decision-making and how to promote collaborative learning.

Given the high level of technical and musical competence of the Higher Education musicians, the tutor provided complete autonomy to the students by letting them 'work up' the music without interfering in their decision-making. On a couple of occasions the tutor was asked to offer an opinion on the creative renditions of the pieces performed by the musicians but this opinion did not necessarily influence the groups' final decisions on the performance of the pieces. This study placed particular emphasis on the music learners' perceptions of developing personal and collaborative creativity through informal learning and through playing by ear from recordings in groups.

The programme in focus aimed at developing the students' aural, creative musicianship and improvisation skills by encouraging them to play musical pieces from different musical genres (popular, classical and a piece of free choice) by ear. There were three stages to the programme: the musical material for the first stage was a pop/funk piece of music; and for the second stage a selection of classical pieces arranged for the purposes of the programme. The audio material used for the first two stages of the programme is available in the book 'Hear, Listen, Play' (Green, 2014). The third stage encouraged each group to copy by ear one piece of music of their own choice. The musicians were asked to create freer renditions rather than accurate imitations of the original pieces copied. Moreover, they were encouraged to experiment with the musical material by making changes in the dynamics, tempo, rhythm, harmony and even the melody, and to create and add new material to the pieces copied as long as they kept the basic features making the original piece readily

recognisable. The musicians played their principal or second instrument (detailed information on the aims, methods and other findings of this programme can be found in Varvarigou, 2016, 2017b). The musicians in this study had the technical facility with a musical instrument required for music studies at university level, which enabled all participants to play an instrument regardless of whether they were first study instrumentalists or vocalists.

***Personal Creativity through informal learning in Higher Education***

Personal creativity was identified through a variety of strategies that the musicians adopted whilst copying music by ear, including working out the key, guessing the first note, playing a scale or random notes in order to find the first note, working out the pitch and the rhythms together; experimenting with the music and with their instruments and improvising. Individual strategies for improvisation adopted by the young musicians included adding ornaments based on scales, changing the rhythm, incorporating other melodies and missing notes out. Listening to each other was a key mediator to improvising (see Table 4).

**Table 4: Supporting personal creativity *through informal learning in Higher Education***

<p><b>Experimentation with musical instruments</b></p> <ul style="list-style-type: none"> <li>○ ‘I figured out the very basic shape of my melody then was able to add in extra notes. It helped putting the melody an octave higher since my fingers weren’t then bound by a specific pattern’ (Lindsay – clarinet)</li> <li>○ ‘This week, my group managed to work through Bach’s Minuet...My thoughts are that I can pick the strings of my guitar to create a broken chord figure and as the song progresses I can begin to strum my guitar to create a fuller texture’ (Veronica – acoustic guitar)</li> </ul>
<p><b>Experimenting with the music</b></p> <ul style="list-style-type: none"> <li>○ ‘As others were working out the parts I <i>experimented</i> by playing the melody in a minor key, which sounded interesting!’ (Lucas - bass)</li> </ul>

- 'It has been really helpful to get some more dynamic...to combine classical music and contemporary repertoire...I did play on the cello some of the violin parts and I was able to identify the melody and to *recreate* it quite well. I think that being a string player has developed my pitch...I really enjoyed this session...I think it helps us *develop our musical creativity*'. (Heather - cello)
- 'When [the melody] was strong I added the ornamentation played by the original violinist. The piece has a delicate drawn-out nature which I captured with reverb and rubato' (Ross - electric guitar)

### **Improvising**

- 'I listened to the chords and worked out the key and therefore knew the scale so I attempted to improvise on that key and within the context of my fellow players' (Miriam - violin)
- 'I then played the notes of the chords, with different rhythms to create some variety. Sometimes in parts, I also played the melody as well, but only when the other parts were a bit overpowering and the melody couldn't be heard' (Ruth - sax)
- 'This week I learnt the melody which was slightly more challenging... The rhythm is differing so took some time to get it all together. This week I didn't add any improvisation, if anything I left some notes out and didn't play continually to allow the listener to hear the other parts' (Gina-flute).

The programme recognised and celebrated the diversity of abilities in playing by ear, in 'on the spot' musical arrangements and improvisations; and the musicians' familiarity with and interest in different musical genres. Therefore, personal creativity was nurtured by encouraging individual interpretations of the music copied, within the group context, and by endorsing musicians' individual processes when manipulating the musical elements of the pieces rehearsed. The last comment of Table 4 by a young flautist is quite telling: although she did not consider it an improvisation because she 'didn't play continually', this musician actually had the opportunity to create her own rendition of a melodic line by leaving 'some

notes out' allowing the listener to hear the other parts. Despite the fact that it might not be recognised as such by the musician herself, this was a form of creative improvisation.

### ***Collaborative creativity through informal learning in Higher Education***

Collaborative creativity was manifested through the different ways that the groups went about creating their own renditions of the music whilst 'messing around' with the pieces: through purposive listening; manipulating the musical elements as a group, arranging the pieces for unconventional ensembles, building on their fellow-musicians' ideas over time after rejecting ideas that the musicians felt did not represent the group's creative intentions; and without guidance or input from a tutor. A good example of group creativity was Lucy's account below of her playing 'dissonant music' that did not appear to 'fit together'; yet the group decided that 'it sounded good that way' and her version was adopted for the final performance of their piece. As the groups became comfortable with the music the members reported moving quickly into 'playing with music' within a group (See Table 4).

Group improvisation was instigated by the group members in order to 'make the pieces sound more interesting' and it was achieved by altering the pieces' structure (Cognitive route to improvisation) and by improvising through harmonising/ fitting in with others' parts (Auditory route to improvisation) (see Figure 1).

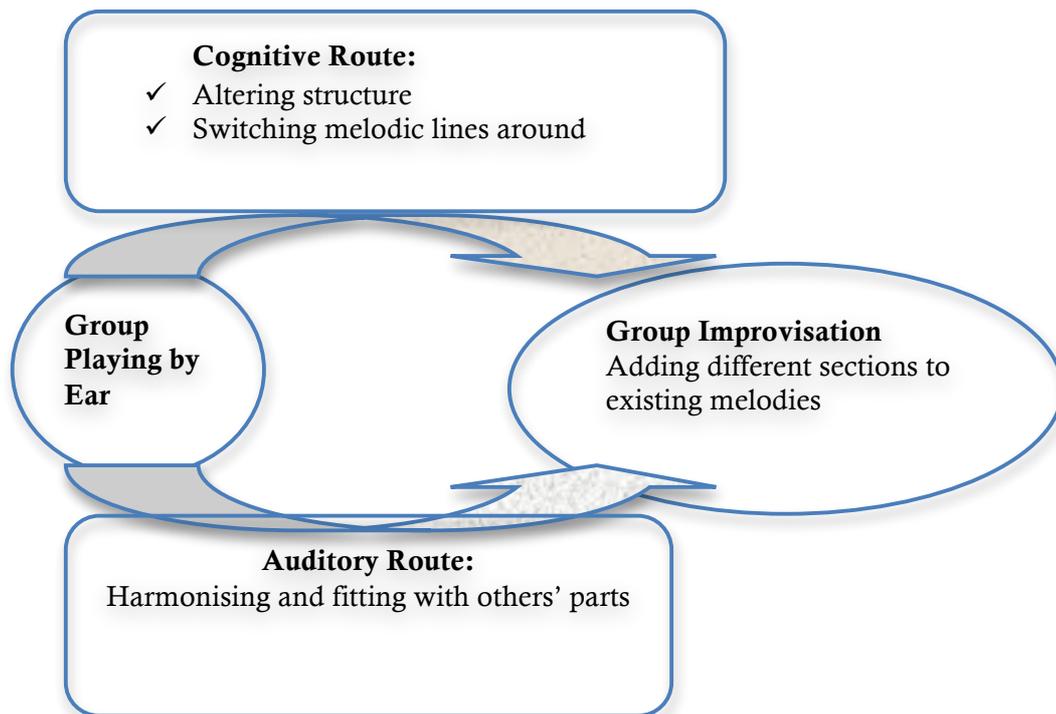
### **Table 4: Collaborative Creativity through informal learning in Higher Education**

- 'As we knew our parts we decided to improvise our piece to make it sound different. We improvised the structure making it into ternary form. We started with the bass on its own, then added piano chords. I then came in with the melody A, then we all dropped out and bass B and melody B played once they finished A came in again. In Link Up we came in one by one the split off into our groups in the form of ABA, we all then improvised on our parts.' (Jonathan - clarinet)
- 'This week we were playing Concerning Hobbits' with two new members to the group. In the short practice period we had to try and communicate the structure and individual parts. This was very hard to do in such a short time, which meant that when we went to record it, part of it was

improvised adding a whole new element of playing by ear'. (Ross – bass)

- 'After we played through the piece a few times, we then started to play around with our own parts, improvising our melodic lines, whilst still harmonising our parts and keeping in time with each other. This gave the piece a feeling of freedom and more of a swing to it...It was important to listen to each others' different parts, so we could keep time with each other and know when to come in with our own parts. And also to make sure every part could be heard individually during the piece, whilst keeping together and complementing each other'. (Lucy - recorder)
- 'After we played through the piece a few times, we then started to play around with our own part, improvising our melodic lines, whilst still harmonising our parts and keeping in time with each other. This gave the piece a feeling of freedom and more of a swing to it' (Freya– piano)

All groups successfully navigated through the process of purely imitating the musical phrases to inventing answering phrases, making up new phrases, improvising by embellishing the melodic lines to creating new melodic lines that were added as different sections to the pieces copied. The groups that adopted a Cognitive route initially focused more on the structure of the pieces and explored ways of moving the melodies around by encouraging the musicians to exchange melodic lines. The groups that adopted the Auditory route started straightaway to harmonise along the melodic lines played by the recording and to alter the material so that it complemented their fellow musicians' renditions. Each group's final performance after five weeks of the programme comprised variations of the pieces copied that were created on the spot and 'new' sections that were pre-composed but embellished on the spot. This suggests that collaborative creativity supported both spontaneous improvisation but also ways of composing their own sections to the music copied by ear. During the final performance of the pieces by each group, which also constituted an assessment point for the programme, the examiner, an expert in free improvisation and jazz performance, commended the students' improvised and pre-composed sections for their originality, especially with reference to melodic contour, rhythmic variations and orchestration.



**Figure 1. From Group Ear Playing to Group Improvisation**

### **Collaborative creativity and playing by ear in groups**

Studies on informal learning in the secondary school and the author's original investigation on informal learning within Higher Education highlight that group playing by ear from recordings holds unique potential in nurturing and promoting personal and collaborative creativity. Both forms of creativity are among the core skills of the twenty-first century global learner, for they advance self-directed and collaborative learning; confidence building through risk-taking and problem solving; and wellbeing through enhanced sense of competence, autonomy and relatedness.

Keith Saywers' work (2007) on collaborative creativity provided the theoretical lens for this chapter by illustrating how engaging in informal learning through playing by ear from recordings fosters the development of personal and collaborative creativity. Firstly, innovative ideas that emerged from the students' and young musicians' performances resulted from the music groups' playful experimentation with the musical material over the course of the programmes. Secondly, 'deep' purposive listening to the music and to the group

members' ideas allowed the groups to make joint decisions about how to manipulate the musical elements of the pieces copied in order to produce different renditions (and in the case of the young musicians, their own improvisations and compositions) of the pieces copied. Sawyer (2007, p. 35) underscores the 'importance of listening to each other with a degree of concentration and intensity, coordinate their voices and negotiate a musical synergy'. This was evident in the responses of the participants from all programmes in formal music education discussed. Thirdly, the team members regularly built on their collaborators' ideas in order to create successful renditions of the pieces and improvisation sections. It was often the case that peer learning supported the development of music learners' technical skills on musical instruments, their familiarity with different musical genres and the process of experimentation and improvisation. Fourthly, as the music groups navigated through the different stages of the programmes they acquired greater control of the processes of copying music by ear and of creating arrangements and improvisations of the musical material copied. In other words, the process through which copying music by ear can act as a scaffold for the creation of 'new' musical version of the pieces copied became clear the more the music learners engaged with it in their groups. Fifthly, as the musical ideas (and within the secondary school context the technical skills of the students) developed, the music groups explored a variety of exciting ways of organising, orchestrating and staging their performances as demonstrated in the students' and young musicians' comments. The final performances illustrated how musical creativity and innovative ideas emerged through collaborative processes. Finally, the creative outputs resulted from collaborative peer interactions with minimal or no input from a tutor.

Through collaborative music making the music learners not only developed their creativity but also a wealth of musical and social skills. To begin with, the music learners reported development in listening, musical appreciation or 'critical musicality' (Green, 2008), improvisation, composition, harmonising and technical instrumental skills. What is more,

peer learning, opportunities for learning to take others' opinions, communicating one's ideas clearly to others, appreciating and acknowledging others' contributions, and gaining confidence by playing with others were some of the core social skills nurtured through group interaction and music making.

Johnston (2013, p. 392) emphasised that an improvisation pedagogy rooted in collective experimentation is likely to support individuals to 'make important personal creative breakthroughs' and to 'nurture in students a disposition that recognises that our situations – both musical and social – are mutable rather than fixed'. The instability in the educational landscape is acknowledged by numerous music scholars who advocate for creativity's central place in education not least because modern economies depend on creativity thinking and creative workers (Allsup, 2016; Baker, 2014; Burnard, 2012; Heuser, 2014; Odena, 2012). The programmes discussed here revolved around a pedagogical approach with foundations in informal learning that nurture learners' creativity by engaging the learners in experiences that are collaborative, exploratory and playful promoting divergent thinking and autonomy. These experiences can support creativity in tandem with a lifelong engagement in and enjoyment of music.

### **Nurturing creativity – Implications for practice**

The pedagogical approach to encouraging personal and collaborative creativity during group music activities outlined in this chapter has significant implications for music teaching in secondary and Higher Education. Firstly, it requires all music educators to examine our assumptions about musical creativity and to be 'reflective and critical' about our understanding of creativity, its purpose in music education and about our role in enabling music learners to experience creativity (Burnard, 2012, p. 326). All programmes recognised creativity as an attribute found in all learners and all music groups and fostered it by facilitating musical playful experimentation with musical material that they had freedom to

change. All tutors distanced themselves from the notion of 'right' and 'wrong' during the process of learning and reproducing the music. Secondly, both programmes encouraged the tutors to reconsider their roles during the process of their students' learning by stepping back, observing and assessing the learners' needs allowing learner autonomy and space for experimentation before mediating to provide musical help. Rodriguez (2009) was concerned that music teachers might need more guidance on how to do that: a concern which has seen responses in Green's own guide for practitioners, *Hear, Listen, Play (2014)* as well as in the growth of a range of teacher-development programmes (see e.g. those in Notes 1-4), and the programme in Higher Education presented here (also see Heuser, 2014). Recommended strategies include listening to the students' musical intentions before providing any technical/musical support; engaging the learners in discussions about their understanding of their performances allowing them time to reflect; analysing possible problems or limitations and thinking about solutions (Ho, 2013); connecting aurally-acquired information to existing knowledge about scales, keys, rhythms or other parameters; leading students by singing pitches rather than giving note-names straight away; juxtaposing traditional methods of teaching and learning music with a contrasting approach, for example string ensemble (written notation) with folk ensemble such as mariachi (aural tradition), jazz pedagogy (written notation with improvisation) and iPad Band (creativity, composition) (Heuser, 2014); and others. Thirdly, peer learning was acknowledged as a useful resource for developing the creative artist. As the tutor steps back the peers take up the role of the tutor and the motivator. Collaborative creativity is dependent on peer interactions and experimentations and should therefore be facilitated in all group music making settings and at all levels of education. Finally, technology provides new possibilities for personal and collaborative creativity. From CDs and Spotify, to YouTube, video games and apps on mobile phones, tablets and other gadgets, technology should be considered as a useful tool in

supporting creativity and collaboration whilst developing musical, interpersonal and communication skills in the learners who use it in groups and alone.

Moving from playing by ear to experimentation and improvisation encourages, on the one hand, young learners with limited technical facility to experience musical creativity as practical communal encounter that could motivate them to pursue music learning for further education or just as a recreational lifelong endeavour. On the other hand, learners aspiring to become professional musicians see creativity as an inseparable ingredient of group music making, as an activity of possibility for playfulness and connection with others and as a core feature of their portfolio practice in the many professional contexts that musicians nowadays operate.

## References

- Allsup, R. E. (2016). *Remixing the classroom Toward an Open Philosophy of Music Education*. Bloomington: Indiana University Press.
- Baker, G. (2014). *El sistema Orchestrating Venezuela's youth*. Oxford: Oxford University Press.
- Berliner, P. (1994). *Thinking in jazz: The infinite art of improvisation*. Chicago: University of Chicago Press.
- Burnard, P. (2012). Commentary: Musical Creativity as practice. In G. E. McPherson & G. W. Welch (Eds.), *The Oxford Handbook of Music Education* (Vol. 2, pp. 319-336). New York: Oxford University Press.
- CCE. (2010). Creativity, Culture and Education. Retrieved from <http://www.creativitycultureeducation.org>
- Chua, S. L. (2013). STOMPing up musical engagement the non-formal and informal ways. In S. L. Chua & H. P. Ho (Eds.), *Connecting the stars: Essays on student-centric music education* (pp. 127-142). Singapore: Singapore Teachers' Academy for the Arts, Ministry of Education.
- Coombs, P. H. (1976). Nonformal Education: myths, realities and opportunities. *Comparative Education Review*, 20(3), 281-293.
- Costes-Onishi, P. (2016). Negotiating the boundaries between the formal and the informal: an experienced teacher's reflective adaptations of informal learning in a keyboard class for at-risk students. *British Journal of Music Education*, 33(3), 309-326.
- Creech, A., Hallam, S., Varvarigou, M., & McQueen, H. (2014). *Active ageing with music: Supporting wellbeing in the Third and Fourth Ages*. London: Institute of Education, University of London.
- Creech, A., Hallam, S., Varvarigou, M., McQueen, H., & Gaunt, H. (2013). Active music making: a route to enhanced subjective well-being among older people. *Perspectives in Public Health*, 133(1), 36-43.
- Creswell, J. (2007). *Qualitative Inquiry & research Design - Choosing among five approaches* (Second ed.). Thousand Oaks: Sage Publications.

- Cropley, A. J. (2001). *Creativity in education & learning - a guide for teachers and educators*. Abingdon, Oxon: Routledge.
- Csilszentmihalyi, M. (1996). *Creativity - the psychology of discovery and invention* (2nd ed.). New York: Harper Collins Publishers.
- D' Amore, A. (n.d.). *Musical Futures: An approach to teaching and learning Resource Pack* (2nd ed.). London: Paul Hamlyn Foundation.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry*, 11(4), 227-268.
- Edwards, N., Whittle, J., & Wright, A. (2016). A student perspective on creativity in higher music education. In E. Haddon & P. Burnard (Eds.), *Creative Teaching for Creative Learning in Higher Music Education* (pp. 22-34). London: Routledge.
- Gibbs, L. (2011). *How Creative is improvisation?* Paper presented at the Performance Studies International Network Conference, CMPCP, Cambridge University.
- Gibson, R. (2010). The 'art' of creative teaching: implications for higher education. *Teaching in Higher Education*, 15(5), 607-613.
- Green, L. (2002). *How popular musicians learn*. Aldershot: Ashgate Publishers.
- Green, L. (2008). *Music, informal learning and the school: A new classroom pedagogy*. Aldershot: Ashgate Publishers.
- Green, L. (2012). Musical 'learning styles' and 'learning strategies' in the instrumental lesson: Some emergent findings from a pilot study. *Psychology of Music*, 40(1), 42-65. doi:10.1177/035735610385510
- Green, L. (2014). *Hear, Listen, Play! How to free your students' aural, improvisation and performance abilities*. Oxford: Oxford University Press.
- Guillaumier, C. (2016). Reflection as creative process: Perspectives, challenges and practice. *Arts & Humanities in Higher education*, 15(3-4), 353-363.
- Gullberg, A.-K., & Brandstrom, S. (2004). Formal and non-formal music learning among rock musicians. In J. Davidson (Ed.), *The music practitioner - Research for the music performer, teacher and listener* (pp. 161-174). Aldershot: Ashgate.
- Haddon, E., & Burnard, P. (Eds.). (2016). *Creative Teaching for Creative learning in Higher Education*. London: Routledge.
- Hallam, S., Creech, A., & McQueen, H. (2011). *Musical Futures: A case study investigation* (Paul Hamlyn Foundation Ed.). London: Institute of Education, University of London.
- Hallam, S., & Kokotsaki, D. (2007). Higher education music students' perception of the benefits of participative music making. *Music Education Research*, 9(1), 93-109.
- Heuser, F. (2014). Juxtapositional pedagogy as an organizing principle in University Music Education Programmes. In M. Kashub & J. Smith (Eds.), *Promising Practices in 21st Century Music teacher education* (pp. 107-124). New York: Oxford University Press.
- Ho, H. P. (2013). "Rollin' at the Deep End: Choice, Collaboration and Confidence through Informal learning with the guitar' In S. L. Chua & H. P. Ho (Eds.), *Connecting the Stars: Essays on student-centric music education* (pp. 66-86). Singapore: Singapore Teachers' Academy for the Arts, Ministry of Education.
- Ho, H. P., & Chua, S. L. (2013). Piloting Informal and non-formal Approaches for music teaching in Five secondary schools in Singapore: An introduction. In S. L. Chua & H. P. Ho (Eds.), *Connecting the Stars: Essays on student-centric music education* (pp. 52-65). Singapore: Singapore Teachers' Academy for the Arts, Ministry of Education.
- Jeanneret, N., McLennan, R., & Stevens-Ballenger, J. (2011). *Musical Futures: An Australian Perspective - Findings from a Victorian Pilot Study*. Melbourne: University of Melbourne.
- Johnston, P. (2013). Teaching improvisation and the pedagogical history of the Jimmy Giuffre 3. *International Journal of Music Education*, 31(4), 383-393.
- Leong, S., Burnard, P., Jeanneret, N., Leung, B. W., & Waugh, C. (2012). Assessing creativity in music: international perspectives and practices. In G. McPherson & G. Welch (Eds.), *The*

- Oxford Handbook of Music Education* (Vol. 2, pp. 389-407). Oxford: Oxford University Press.
- Merker, B. (2006). Layered constraints on the multiple creativities of music. In I. Deliege & G. Wiggins (Eds.), *Musical Creativity - Multidisciplinary research in theory and practice* (pp. 25-41). Hove and New York: Psychology Press.
- Mok, O. N. A. (2011). Non-formal learning: clarification of the concept and its application in music learning. *Australian Journal of Music Education*, 11(1), 11-15.
- Musco, A. M. (2010). Playing by Ear: Is Expert Opinion Supported by Research? *Bulletin of the Council for Research in Music Education*, 184, 49-63.
- Nettl, B., & Russell, M. (Eds.). (1998). *In the course of performance - Studies in the world of musical improvisation*. Chicago: The University of Chicago Press.
- O'Neil, S., & Bessflug, K. (2012). Musical Futures comes to Canada: Engaging students in Real-world music learning. *Canadian Music Educator*, 53(2), 25-34.
- Odena, O. (Ed.) (2012). *Musical creativity: Insights from music education research*. Farnham, UK: Ashgate.
- Rodriguez, C. X. (2009). Informal Learning in Music: Emerging roles of teacher and students. *Action, Criticism and Theory for Music Education*, 8(2), 36-45.
- Sawyer, K. (2007). *Group Genius - The creative power of collaboration*. New York: Basic Books.
- Trilling, B., & Fadel, C. (2009). *21st Century Skills - Learning for Life in Our Times*. San Francisco: John Wiley & Sons, Inc.
- Varvarigou, M. (2014). Play it by ear: teachers' responses to ear-playing tasks during one to one instrumental lessons. *Music Education Research*, 16(4), 471-484.
- Varvarigou, M. (2016). Collaborative playful experimentation in Higher Education: A Group Playing by ear study. *Arts & Humanities in Higher education*, <http://www.artsandhumanities.org/journal/collaborative-playful-experimentation-in-higher-education-a-group-ear-playing-study/> (Special Digital Issue).
- Varvarigou, M. (2017a). Group Playing by Ear in Higher Education: the processes that support imitation, invention and group improvisation. *British Journal of Music Education*, 1-23. doi:10.1017/S0265051717000109
- Varvarigou, M. (2017b). Promoting collaborative playful experimentation through group playing by ear in Higher Education. *Research studies in Music Education*, 39(2), 161-176.
- Varvarigou, M., & Green, L. (2015). Musical 'learning styles' and 'learning strategies' in the instrumental lesson: main-study findings. *Psychology of Music*, 43(5), 705-722.