The Role of Perceived Self-Efficacy in the Development of Musical Ability: what can the study of successful musicians tell us about teaching music to able children?

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ABSTRACT The role of perceived self-efficacy is important to human social development and to learning in general, but how it relates to music talent development is not well understood. This article explores the concept of perceived self-efficacy as it relates to the development of musical talent by considering what is meant by the concepts of high ability in music and self-efficacy, and by discussing the results of interviews with successful professional musicians. The interview data suggest the need for four aspects of self-efficacy to be present in order to fully develop talent: individual judgement of capability; a belief that outcomes are tied to individual actions; self-regulation of activities related to learning; and persistence in the face of difficulties. The implications of this for music teaching are also discussed.

Introduction
This study explores the role of perceived self-efficacy in the development of musical talent. General theories of talent development exist, often aligning talent with the concept of giftedness - in particular, the models of Gagné (1995) and Renzulli (1986) are widely acknowledged. These models conceptualise the nature of high ability while detailing the importance of psychological and social aspects to talent development. In doing this, both models broadly position the role of human agency as important. However, the research discussed in this article suggests that while generalised models of talent development can be applied to the enhancement of musical ability, the role of human agency requires further understanding as it relates to individual musicianship. Within this area, the effects of perceived self-efficacy are important in terms of understanding how agency is shaped internally and in response to a range of contexts.

The role of perceived self-efficacy in the development of musical talent is under-researched, although its role in learning generally, and in cognitive development specifically, has been more fully analysed, most notably by Albert Bandura. By self-efficacy, Bandura means ‘people’s beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives’ (Bandura 1993, p. 118). It is important that self-efficacy is not confused with self-esteem (Linnenbrink & Pintrich, 2003, p. 121). Self-esteem is an emotional reaction, the existence of which need not be based on accurate appraisal of ability; self-efficacy rests on an accurate appraisal of individual skills, knowledge or understanding within a given learning or performance situation.

In general terms, perceived self-efficacy is believed to positively enhance learning by encouraging students to engage with learning and take an active role in learning processes (Bandura, 2006); set and achieve short- and long-term learning goals (Schunk, 1990); avoid learned helplessness (Linnenbrink & Pintrich, 2003, p. 121); and strengthen coping behaviours and...
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persistence in the face of learning challenges (Bandura, 1977, p. 193). However, with respect to the role of self-efficacy in enhancing learner attributes which promote musical development, research literature tends to mention the construct in passing rather than more fully exploring its possible effects (see e.g. Creech & Hallam, 2006; Silverman, 2008; McPherson, 2009). This article focuses on self-efficacy by considering the findings of a secondary analysis of data originally gathered during one strand of doctoral research into the development of musical ability. The study aims to add to understanding of the importance of individual responses to learning processes and the potential significance of this for teachers and teaching.

Methodology

The original research questions for the doctoral study centred on successful musicians’ perceptions of gift and talent and the ways in which they had developed their musical abilities. The empirical data gathered suggested that many of the participants highlighted the importance of characteristics relating to constructs of self-efficacy in the development of their talent. For the current study, a research question was framed to investigate the extent to which the perception of a link to self-efficacy was valid: to what extent do musicians’ statements about their talent development align with key characteristics of Bandura’s concept of perceived self-efficacy? From this question, the following two key themes were identified for the literature review: music talent development (models of/understandings of/factors affecting); and self-efficacy theory (in general and in terms of music talent development).

Within the literature review it was important to consider the extent to which it can be said that talent is capable of development and what factors can impact on talent development. It was also important to explore the extent to which self-efficacy is identified as important to musical talent development in research literature. To do this, a staged approach to the literature review was taken based on a recognised structured survey process (see Bridgelal Ram et al, 2008, p. 52). Following the identification of the research question and sub-themes, searches were carried out across chosen research databases. The key word searches were organised by Boolean search, with the parameters limited to peer-reviewed journal articles and e-books published between January 1990 and June 2010. A partly inductive approach was taken so that, as the reading was in progress, information which could be of importance was noted and investigated. These sources were then included within the review only if the content clearly related to the parameters of the investigative areas arising from the research questions.

The data from interviews and questionnaires with individual musicians (n=62) were reanalysed to explore the extent to which the characteristics identified by musicians as being important to their talent development related to the concept of self-efficacy (see Bandura, 2005, p. 309). When re-analysing data, it is important that the original set is available in its entirety, otherwise a full secondary analysis is not possible (Weed, 2006, p. 127). In this case, full data were available from questionnaires and interviews with professional musicians. In order to explore the possible link to self-efficacy theory, the data set was re-analysed following the general inductive approach outlined by Thomas (2006). In so doing, it was important to guard against forcing the data to try to confirm a link with self-efficacy theory. Heath & Cowley (2004) note that ‘forcing will clearly result if verification involves looking for data rather than at it’ (p. 145). To avoid forcing, the general inductive approach was used to identify emergent categories through a line-by-line analysis of transcripts during which meaningful text segments were first identified and then coded after carefully considering the multiple meanings which could be assigned to the text (see Thomas, 2006, p. 240). This in vivo coding formed the basis for further readings of the data to refine and delimit the emergent themes. Only after these themes had been refined following multiple readings was there a comparison against Bandura’s self-efficacy theory. In particular, Bandura’s four categories were seen to mesh with the themes generated by the in vivo coding, these categories being: individual judgement of capability; a belief that outcomes are tied to individual action; self-regulation (including motivational aspects); and persistence (see Bandura, 2005, p. 309).

As with any study, there are limitations. First, the study centres on the analysis of data gathered for one purpose (identifying musicians’ perceptions of gift and talent within their own talent development) to investigate a construct which was not explored directly with participants.
To ensure more fully that characteristics of self-efficacy were apparent, a self-efficacy scale would need to have been administered to the musicians. In order to test the validity of the results, a domain-specific self-efficacy scale would have to be constructed and administered to individual musicians. The second main limitation relates to the nature of the primary data, given that participants were asked to discuss their talent development from childhood to adulthood. As with any retrospective element of a research study, there are issues of potential self-report bias and issues of reliability of memory (see Macnamara & Collins, 2009, p. 379). Given these limitations, it is acknowledged that further research needs to be conducted to verify the results of this study.

**Talent Development, Self-efficacy and Learning**

The view that talent is capable of development rather than simply being innate and biologically based has grown in popularity since the 1960s. Earlier views of giftedness rested on definitions of high intelligence as innate and capable of being rated on the basis of IQ tests, a measurement paradigm that had dominance for much of the twentieth century (Stoeger, 2009, p. 18). However, there is a difficulty with this tradition given, that ‘IQ scores without exception confound achievement and natural ability’ (Dai, 2004, p. 159). In addition to difficulties over what IQ tests actually measure, there has been a recent move away from elitist conceptions of gift towards a definition of ‘high ability’ within an overall construct that regards the term gifted as being culturally bound and value laden (see Dai, 2009, p. 40). Moreover, high measured IQ does not necessarily correlate with high achievement in a given field: the underachievement of talented students is a noted, if ‘perplexing’, phenomenon (Reis & McCoach, 2000, p. 152). The reasons for this can be many and complex, but ‘family, school and individual factors all seem to contribute to the emergence of underachievement behaviors’ (Reis & McCoach, 2000, p. 166).

**Understanding Talent Development**

Two of the best-known models for conceptualising talent development focus on the notion of giftedness: Gagné’s (1985) differentiated model of giftedness and talent (the DMGT); and Renzulli’s (1986) enrichment model. The key aspect of these models is an attempt to understand how latent talent or gift is translated into high-level performance. Gagné uses the terms gift and talent to describe different stages of human ability: giftedness as raw, untrained natural ability; talent as the resulting product of gift developed through structured learning (Gagné, 2004). While Gagné does not discount the role of contextual factors, he indicates that the key to individual differences in talent development lies in ‘natural’ ability (Gagné, 1999, p. 38).

In contrast, Renzulli’s conceptualisation has a developmental emphasis in which giftedness is seen as a ‘dynamic state’ capable of enrichment. His Contextual, Emergent and Dynamic (CED) model (developed with David Dai) rests on the assumption that ‘genetic predispositions... do not determine developmental outcomes’ (Dai & Renzulli, 2008, p. 116). Instead there is fluid interplay over time between an individual and his or her various environments within which ‘giftedness is made, not born’ (Dai & Renzulli, 2008, p. 118). There is a firm rejection of the notion of innate talent, then, and a suggestion that many individuals potentially could develop knowledge or skills to a state of excellence.

With regard to musical ability, there is also a view which posits talent development as a continuum within which everyone can develop musical skills (see Stollery & McPhee, 2002; Sloboda et al, 2005). If everyone has the potential for developing musical ability, there will be optimum conditions within which ability is realised (Stollery & McPhee, 2002). These conditions for musical excellence build upon and develop the individual’s innate ability through interaction with the contexts which surround them (Stollery & McPhee, 2002). Indeed, Sloboda et al (2005, p. 46) argue that the idea of differential musical achievement being due to ‘inherent biological variability’ is nothing more than ‘folk psychology’.
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Self-efficacy, Talent Development and Learning

The importance of self-efficacy to individual learning has been argued most significantly in the work of Albert Bandura. Regarding mechanisms of human agency, Bandura (1993) argues that ‘none is more central or pervasive than people’s beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives’ (p. 118). He states that ‘people who have a high sense of perceived self-efficacy in a given domain think, feel, and act differently from those who perceive themselves as inefficacious’ (Bandura, 1989, p. 732). Individuals who perceive themselves as lacking efficacy in a given area may become anxious about their ability to succeed or attain a positive outcome, and anxiety may lead to situation and task avoidance (Bandura, 1983).

In terms of talent development, then, the nature-nurture continuum contains a key dimension: the role of the self in mediating any innate abilities and external influences. The development of musical ability to the level of capable or excellent performance requires an individual to set performance and learning goals and assiduously work towards those goals over many years. Commitment to attaining long-term goals and persistence of effort therefore become important in terms of self-regulatory behaviours. Judgement of capability (that is, perceived ability and capacity to act skillfully) is an important element of self-efficacy beliefs and informs how individuals engage with learning experiences (see Schunk, 1990, p. 72). Self-efficacy is, then, a key aspect of self-regulated learning and allows individuals to relate effort to successful learning and development of skills (Schunk, 1990, p. 79).

Research Findings

Sixty-two musicians participated in the original research strand from which the data for this study are drawn. The participants were grouped into three genres for the purposes of data analysis to compare responses across different fields of music: classical (n=32); traditional/folk (n=11); and pop/jazz (n=19). A total of 130 musicians were originally invited to participate based on predefined criteria: being consistently critically acclaimed for their music performance; having their musical ability recognised professionally by peers; and having a high national and international profile (including sustained levels of ticket and record sales). In addition, some participants had acknowledged expertise in their field as evidenced by their teaching links to conservatoires and universities. As stated earlier, the responses from interviews and questionnaires were analysed across the four characteristics of Bandura’s concept of self-efficacy: judgement of capability; a belief that outcomes are tied to individual actions; self-regulation; and persistence.

Individual Judgement of Capability

A wide range of descriptors was used by participants to identify elements of their individual musical capability. Some focused on specific aspects of musical ability, such as having perfect pitch, having excellent sight reading skills, being technically skilled, and being creative in vocal music delivery (interpreting words as well as musical phrasing). Others noted a more general set of skills, such as ability to listen, ability to learn and play pieces quickly, and interpretive insight. Some had recognised their own musical capability early - for example, through being able to ‘pick out’ tunes on the piano at age 4-5, as one classical musician and teacher could, or, as one pop musician told us, noticing that as a child other people stopped to listen when she sang. One traditional musician recognised his capability in terms of the relative ease with which he could play his chosen instrument: ‘I can do stuff other people can’t do or that it would take them weeks, months or even years to accomplish. To me this is like falling off a log.’ Most of the musicians could clearly judge their own capabilities and had confidence in their self-appraisal, although one classical musician noted that while he recognised that he ‘had an affinity and ability for music in [his] teenage years... many professional musicians still struggle with personal insecurities and in assessing their talents’.

Others had their ability confirmed through competitions: both classical and traditional musicians noted the role of competitions in affirming ability, although there were mixed views about the utility of this. The traditional musician quoted above stated that ‘competitions just show you have stronger nerve than the next person’. In contrast, a classical percussionist said that
competition had sharpened his self-critical abilities, which he saw as a positive contribution to his
talent development. Peer identification or recognition of ability rather than self-identification was
most significant in the pop/jazz participants, although recognition of talent in competition was
prevalent also in the classical and traditional musicians. Overall, there was a general recognition
from the musicians that they were talented, but there was a reluctance to speak of their own
musicianship in terms of giftedness. All were able to assess characteristics of their talent through a
mix of personal achievement and recognition of their abilities by others.

Belief that Outcomes are Tied to Individual Actions

In general, the musicians felt that their musical ability had some innate grounding, but that their
ability to perform at high levels was down to other aspects, such as luck, determination, or hard
work. The participants deemed their high ability to be the product of application and discipline in
addition to having access to enriching experiences and opportunities. Talent development was
largely ascribed to hard work:

Discipline and application have been more significant than any great talent in my development.
(Traditional musician)

It’s curious, some who are talented assume that you don’t have to do anything and therefore
don’t, but … [you] need to keep working at it … Talent will not survive on its own.
(Classical musician)

The overall view of the musicians is best summed up by another classical participant who stated
that ‘all the talent in the world does not ensure success or a career in music. Perseverance is
essential.’

While the concepts of determination and hard work recurred across the participants’
contributions, so too did a sense that individuals have to take opportunities presented to them and
respond with dedication and commitment. One classical musician stated that ‘there is no such thing
as chance’: individuals have to act in order to translate their aims into reality. There was a
recognition that individuals respond to life chances in different ways, but that ultimately ‘you make
a niche for yourself. This is what I’ve done’ (traditional musician). Most of the participants believed
that although access to opportunities for talent development may be available, it is how the
individual perceives and responds to these experiences which determines whether that
development takes place. This also applied to learning: some spoke of realising they needed to
learn more about specific areas of music at certain times during their careers, and so they sought
out people who could help them to learn. There was therefore strong recognition that through
their own hard work, dedication and resourcefulness they could attain particular outcomes,
whether this was simply to play an instrument more skilfully, or to earn a living as a professional
musician.

A consensus was evident across the three genres that it is difficult to separate the effects of
hard work from the legacy of innate talent. Talent requires the individual to possess ability, but
there also needs to be a strong work ethic and a commitment to developing and honing skills.
Developing talent takes commitment and within this, the musicians tended to take an incremental
view of their abilities: they recognised that it took time for them to develop to a point where they
could describe themselves as skilled, but they were in no doubt that a key factor in their high
attainment was the sustained effort that they had invested.

Self-regulation

Bandura mentions self-regulation as an important characteristic of perceived self-efficacy. The
musicians spoke of the need to maintain motivation and to persist during practice (which often
took place in isolation from others). It was therefore up to the individual whether to practise and
for how long. It also needs to be remembered that this self-regulation had to occur when most of
the musicians were young, and required long-term commitment to attempt to reach goals far in
the future. It was evident that some of the regulatory aspects the musicians spoke about related to
intrinsic as well as extrinsic motivation. For some there was a need to make music, for others there was enjoyment, while others set themselves challenges to keep their interest levels high:

I would come home from school and play the piano all afternoon... That’s how I would spend hours of unstructured free time. (Pop/jazz musician)

The first night I had the instrument I learned a tune and never looked back. (Traditional musician)

Although my first attempts at songwriting were naïve, I enjoyed practising writing chords and fitting them to the chords on my guitar. (Pop singer)

Another pop singer/songwriter noted the absorption she felt when writing songs, stating that she ‘still preferred to write alone’, while the traditional musician who ‘never looked back’ also said that he ‘started to love what he was learning’.

In many ways, then, emotional and psychological components, such as enjoyment, love, sense of challenge, focus and concentration, meant that these musicians self-regulated their music activities around something they basically loved or to which they felt drawn. They recognised that many hours of practice would be needed and were prepared to put in time and effort to improve. One classical musician mentioned being ‘absolutely concentrated’ on becoming an excellent player of their chosen instrument. Another (classical) musician said that he had been ‘extremely keen on becoming the best possible organist’, and he added that most of his musical development had been ‘self-motivated’, although it had been ‘guided and inflected by teachers’. This self-regulation was not just a factor in early learning: it continued in terms of the ongoing practice and development that the musicians have to maintain in order to remain at the top of their field. One classical musician said that there had been motivation in wanting ‘to play more and [learn] difficult pieces’, but that ‘[e]ven now it is about preparing for and succeeding’ in their profession.

A sense of individual responsibility for their own learning and development came through strongly from the participants’ comments. While they acknowledge the role of teachers and mentors (either in formal or informal learning situations), many noted that they had self-motivated in various ways. For example, one participant noted that students ‘should be responsible for their own development and not wait for affirmation from others’. Another commented that, while enhancing opportunities had been available to him, ‘focus was a problem for me in the early days’. Another said that what he had missed in his education was ‘any guidance on self-discipline. This is an essential part of composing and I badly needed help with it.’

**Persistence**

At the core of self-efficacy is persistence and, allied to this, a sense of resilience in the face of difficulty. These features were evident in the responses from the musicians. For example, one classical musician noted the importance of self-belief to remain resilient: ‘You have to feel by yourself that this is the thing what you really want to do. Even when sometimes conditions are not best for you. You have to believe very deeply in yourself.’ Another’s confidence was dented early on: ‘I volunteered to play organ in church when I was about 16 – it was disastrous (or so I thought!), but I was determined to improve and taught myself to play.’ A pop singer also commented on having to move beyond early lack of skill: ‘In normal tuning I found guitar quite complicated and, although rhythmically I was true and solid, the chord changes felt clumsy and hindered my singing. But I kept practising.’

These views highlight the need for resilience and determination in the development of talent, but there is also implicit awareness of the potential role which self-doubt can play in stalling development. This is an interesting feature, as it would suggest that a potential limiting factor could come from within the individual, stemming from their personal appraisals of their own abilities. One classical musician went as far as to say that ‘failure was not an option’. Another traditional musician stated that their career took ‘[s]tamina, commitment, staying power, teaching, practice... at the highest level there is a huge commitment of hours of practice’. Persistence may therefore have to be a career-long factor, rather than something that is only required in times of...
challenge or in the early days of learning. As one musician commented, they simply ‘refused to be
daunted’.

Challenging situations were referred to by some of the musicians, and it was at these times in particular that their persistence and resilience was particularly important in helping them to gain the eventual outcomes they wanted (professional career or high level of skill). This persistence was evident through early rejections by peers or those in positions of influence: one (pop) singer said that most of his friends regarded his music as ‘a waste of time’. Another said that in the early days they would ‘send off demos to record companies, tv shows, radios dj’s, management companies – probably trying too hard. But it was all I wanted to do.’ For one traditional musician, initial reluctance came from his parents, who ‘needed a deal of convincing’ to buy an expensive instrument for him. He persisted: ‘They relented when I was 11.’ This musician had been brought up in a community where music featured in family and community events, so immersion in that tradition may have helped to convince him and his parents that he should learn the traditional music of his home community. Certainly some of the traditional and pop musicians spoke of the support they gained to develop their skills from community and social playing; indeed, one traditional singer felt that making music was so routine in her community that no one was singled out as particularly talented. Instead, anyone who demonstrated a keen interest was encouraged and nurtured by community elders or peers. In this way, social learning and encouragement can help to support self-belief and build capability, in turn supporting persistence when challenges are met.

Considering the Implications for Music Teaching

As McPherson & McCormick (2006, p. 332) argue, self-efficacy is not a panacea. However, it is an antecedent to learning success in that it shapes learner characteristics (such as perseverance) on which success is predicated. This is particularly important to music learning because of the amount of self-scheduled study that takes place. In addition, students only develop musical talent to high levels after many years; task commitment therefore has to persist, often in isolation from teaching situations and from collective activity. The musicians in our study spoke not just of task commitment but of setting themselves learning goals: early experiences of difficulty did not put them off learning, but rather they became determined to succeed despite the technical difficulties they initially experienced. Good & Dweck (2006, p. 46) point out that students who adopt learning goals to improve their skills and knowledge ultimately build a theory of self which rests on a view that their ability can be developed, rather than being a fixed entity on which they can have little impact. Students who take such an incremental view of intelligence, ability and skill tend to show more resilience to challenge and difficulty than do those who take an entity view of their abilities (see Good & Dweck, 2006, p. 47). It is therefore important for teachers to encourage students (of whatever age) to consider that developing musical ability lies as much (or more) in the effort they expend and commitment they show, than it does in any innate talents they may have.

However, Nielsen (2004, p. 418) points out that many music students perceive that they have not been taught how best to practise by their music teachers. She notes that while sustained effort is a necessary but not sufficient condition for success in music learning, it is an important element in moving towards excellent performance (Nielsen, 2004, p. 419). Nielsen’s results show the importance of self-efficacy beliefs on music practice, in that higher self-efficacy beliefs seem to lead to improved use of metacognitive and critical-thinking strategies, although these tended still to be developed in isolation from teachers and peers (Nielsen, 2004, p. 423). These aspects are important to talent development, since playing an instrument or singing to a high standard depends on more than the technical aspects of mastery (such as repetition or rehearsal). It would seem that music teachers should first encourage pupils to think about preferred ways to practise, and to discuss what will be gained as a result.

Arellado et al (1996) suggest that schools and teachers should place less emphasis on eventual academic outcomes as the most important aspect of learning, and more emphasis on helping children to engage with the processes of learning that will eventually lead to achievement in exams or tests. However, in order to accomplish process-focused learning, there needs to be a reconceptualisation of the role of the teacher away from didactic pedagogy (where the teacher decides on the content of learning and how the content will be taught) and towards a dialogue
model, where the teacher develops the content and teaching methods in response to student ability and need for challenge (bearing in mind that examination and curricular demands may also have to be met). A dialogue model should also contain discussions which encourage students to reflect on what they have learned and why this is important to their development of skills and understanding within a learning domain (Linnenbrink & Pintrich, 2003, p. 129). These discussions can take place one to one between student and teacher, or through group discussions which encourage students to explore their learning with each other.

As part of this refocusing, students need to be supported to understand how they learn: what helps them to learn, what their abilities are (self-appraisal), and how best they can develop their abilities through teacher support as well as through individual practice and further learning. The role of the teacher in assisting the development of the self-efficacy which underpins this mindset is therefore of real importance to talent development. Teachers should encourage students to regard their ability as capable of development rather than as innate and therefore fixed (see Dweck, 2007). Students who take a fixed view tend to be most concerned with whether or not they are perceived as clever within a subject area, and will tend to view failure as a challenge to their belief in their own ability (Dweck, 2007). In comparison, growth mindset learners will tend to see mistakes as part of learning, and will think of challenges as a way of developing their abilities (Dweck, 2007).

Teachers therefore need to set work regularly for pupils which challenges their abilities to some extent, based on their existing levels of skill and knowledge, but not so far in advance as to make it difficult for the student to succeed. They also need to set work which is within the student’s capabilities in order to consolidate existing skills and knowledge. In this way, mastery experiences will be built up, giving the students repeated instances of success, but not of success without effort. Mastery is a key factor in helping to develop self-efficacy because efficacy is enhanced by ‘experience of mastery arising from effective performance’ (Bandura, 1977, p. 191). But mastery alone does not lead to increased self-efficacy: it is how the student interprets the success that is important. For example, do they relate the success to their own effort and persistence (internal factors over which they have control), or do they link it to having a good teacher or luck (external factors over which they have no control) (see Margolis, 2005, p. 224)? There is a need, then, for teachers to encourage students to see mastery as arising from their own capabilities coupled with effort to develop those capabilities.

Conclusion

The participants in this study emphasised the role of their own drive to succeed in terms of their talent development, while also recognising the role of particular teachers who inspired them to learn. This research indicates that teachers have a key role to play in talent development in music as in other subjects, for the development of learner agency in general, and self-efficacy in particular. The responses from the musicians in this study suggest that successful development of musical talent depends on how individuals perceive and respond to the range of musical experiences they meet. The musicians were able to judge their own capabilities and act in ways which enabled desired outcomes to be attained. As has been seen in the responses from the participants in this article, many of the musicians believed that it was difficult to separate the effects of hard work from the effects of innate skill. There is therefore an important relationship between development of talent, concepts of agency and self-efficacy, and sustained effort. Learners should be supported to take the view that application is required to promote development over many years, and they should be encouraged by teachers to develop appropriate learning goals and associated learning behaviours in order to further develop their musical capabilities.

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