# A generative model of the teachers' thinking on musical creativity

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**Abstract:** This article draws on and extends a four-year investigation of creativity in music education with particular reference to the perceptions of six secondary school teachers (Odena & Welch, 2007; Odena, Plummeridge, & Welch, 2005). A comprehensive review of recent literature in musical creativity is provided, which complements and reinforces the theoretical framework of the original study. A qualitative approach was used for data gathering, including a video elicitation interview technique and Musical Career Path questionnaires. Transcripts were subsequently categorized using NVivo. Taking into account other recent studies, previously unpublished data is examined and a generative model of how the teachers' thinking about creativity might develop over time is suggested: the teachers' past in-and out-of-school experiences and their daily classroom teaching shape their perceptions of musical creativity; this occurs as a continuing interaction that has the potential to modify the teachers' perceptions over time. Educational implications are considered in the conclusion.

**Key words:** creativity, secondary school, composing, perceptions, teachers' thinking, model, qualitative methods.

## Introduction

'Creativity' is a recurrent topic in English-speaking educational research and policy, as exemplified by the work of Special Interest Groups (see for instance the British Educational Research Association SIG 'Creativity in Education' at www.bera.ac.uk), government departments, and advisory committees (e.g. Department for Culture Media and Sport, 2006; National Advisory Committee on Cultural and Creative Education [NACCCE], 1999; Scottish Executive, 2006; Qualifications and Curriculum Authority [QCA], 2006a). Researchers' interest in 'creativity' produced a considerable amount of investigations in the 1960s and 1970s. While there was a subsequent decrease following this initial surge, interest in creativity has remained consistent, and has in fact peaked again in the last decade (e.g. Burnard, 2006a, 2006b; Craft, 2003, 2005; Craft and Jeffrey, 2008; Craft, Jeffrey and Leibling, 2001; Deliège and Wiggins, 2006; Sternberg, 1999; Sawyer, 2006a).

As observed elsewhere (Odena, 2001a), there are at least two generic concepts of creativity coexisting: the 'traditional' and the 'new'. The traditional is ascribed to people who contribute significantly to a field and whose contributions are recognised by the community, such as successful adult composers, painters or sculptors. The significance of this traditional perspective in a school context tends to focus more on the output (such as interpretation within the 'canon') rather than the creative process. This implies that although the work of 'the masters' is a source of inspiration and is often studied in educational institutions, such exceptional standards of quality are difficult to reproduce. Other authors have called it 'historical creativity' (Boden, 1990) or 'big C' creativity (Gardner, 1993; Craft 2001). In contrast, the 'new' concept (in the sense of being contrasted to the 'traditional') is related to a psychological notion of 'imaginative thinking' and has broad applications in the school context (NACCCE, 1990; Savage and Fautley, 2007). Within this latter concept, creativity is defined as imagination successfully manifested in any valued pursuit. Confusion arises when accounts of the new concept are presented as if they were characterisations of the traditional one, as for example when we try to assess young people's musical products using 'historical creativity' criteria. Taking this situation into account, there are issues that need further consideration. For instance, the term 'creativity' and how creativity might be identified in music classrooms are rarely examined in the literature. A few studies indicate that teachers of arts subjects usually interpret creativity and its teaching in personal terms (Fryer and Collings, 1991; Fryer, 1996), whilst the English National Curriculum devotes a fourth of its requirements for Music to developing 'creative skills' in the guise of composition and improvisation (QCA, 2006b). As such, having a statutory curriculum does not appear to guarantee a harmonised perception of these activities in their implementation in schools. Concerns have been raised about the standards of composition in generalist schools (Odam, 2000) and on the need for teachers to have more composition and improvisation knowledge if they are to engage fully with the students' composing processes (Berkley, 2001; Pilsbury and Alston, 1996). Other recent research has suggested that the musical value of improvisation is context and genre sensitive in the lives of music teachers and musicians. For example, an Economic and Social Research Council (ESRC) study of postgraduate musicians undertaking a one-year specialist full-time course to become secondary music teachers in England found that they rated the ability to improvise much more highly than final year undergraduate music students (Hargreaves and Welch, 2003; Welch, 2006). In another example, an ongoing investigation into the nature of teaching and learning in higher education music studies (the ESRC Teaching and Learning Research Programme 'IMP' Project[1]) is uncovering differences between classical and non-classical musicians in their attitudes to improvisation, with the latter (folk, jazz, rock musicians) rating the ability to improvise on their instrument significantly more highly (Papageorgi and Creech, 2006), not least because of differences in expected performance traditions.

In addition, the term 'creativity' is often used in music education statutory guidelines in two different ways: (a) describing composition/improvisation activities and (b) highlighting

the value of creativity as a desirable 'thinking style'. Examples of this duality are evident in the Curriculum for Northern Ireland (Department of Education Northern Ireland, 2006), the National Curriculum for England and Wales (Department for Education and Skills [DfES] and QCA, 1999a, 1999b), and the curriculum in Catalonia, Spain (Generalitat de Catalunya, 1992). In England, it is proposed in the *National Curriculum: Handbook for secondary teachers* (DfES and QCA, 1999a: 172) that the teaching of music 'increases self-discipline and creativity'. Consequently one of the strands of the curriculum's Programmes of Study within all Key Stages is 'Creating and developing musical ideas – composing skills'. Furthermore, the booklet *Music: The National Curriculum for England* (DfES and QCA, 1999b: 9) provides specific ways in which the teaching of music is believed to contribute to learning skills across the curriculum, through analysis and evaluation 'working creatively, reflectively and spontaneously'. Hence, the term creativity is sometimes conveyed to mean a thinking style and at other times to imply activities in composition and/or improvisation.

**Research questions and theoretical framework**

This paper draws on and extends a four-year, case study-based investigation, which focused on creativity in music education with particular reference to the perceptions of six teachers in English secondary schools (Odena Caballol, 2003)[2]. The research questions were:

i)      What are these schoolteachers' perceptions of creativity?

ii)     What are the similarities and differences between the literature on creativity and these teachers' perceptions?

iii)    In what ways do these teachers' musical and professional experiences influence their perceptions of creativity?

In this paper the prime focus is on exploring how the answers to questions (i) and (iii) interact in the formulation of a generative model of the teachers' thinking on creativity in music education. Initial analyses of the first two questions as well as a description of the influence of the teachers' backgrounds on their viewpoints at the time of data collection are reported elsewhere (Odena, Plummeridge and Welch, 2005; Odena and Welch, 2007). This paper differs from previous ones in that it specifically explores the relationships between this data and a new generative model (see below) in the light of recent literature, and presents previously unpublished data (e.g. Figures 1, 2, 3, 4 and Appendix).

The initial investigation was divided into four stages and has been subsequently expanded to include other very recent research findings. The four stages were (a) examination of the meanings attached to the word 'creativity' and review of previous studies; (b) discussion of the methodological assumptions underpinning the research; (c) data collection and exploration using content analysis; and (d) the drawing of implications. The first stage literature review took a historical consideration of the variety of foci of previous research (Odena, 2001a). Depending on the field of knowledge (i.e. aesthetics, philosophy, musicology, psychology or education), several approaches to the study of creativity have

been used, focussing on (i) the characteristics of the creative person (e.g. Cropley, 1992; Runco et al., 1993; Torrance, 1963, 1975), (ii) the description of an appropriate environment for developing creativity (e.g. Beetlestone, 1998), (iii) the study of the creative process (e.g. Wallas, 1926; Bennett, 1975, 1976; De Souza Fleith et al., 2000), and (iv) the definition of the creative product (e.g. Hamlyn, 1972). In a few studies and meta-analyses of previous enquiries, up to three of these four approaches are evident (Csikszentmihalyi, 1996; Fryer, 1996; Hargreaves, 1986). In music education research a similar pattern of approaches appeared, with authors discussing the composing/improvising processes of the students (Brinkman, 1999; Burnard, 2000; Durrant and Welch, 1995; Kennedy, 1999), the environment most conducive to skills development (Byrne and Sheridan, 2001; Glover, 2000), the assessment of musical products (Green, 1990, 2000, 2001), and also some meta-analytical works considering up to three of the four areas in conjunction (Hickey, 2002; Reimer and Wright, 1992). Therefore, the subsequent fieldwork embraced an emergent four-fold framework that was used for researching case study teachers' perceptions of creativity in music education, focusing on Pupil-Environment-Process-Product (PEPP).

**Recent studies on the composing and improvising processes**
A subsequent literature review of publications up to April 2007, revealed an exponentially growing number of 'musical creativity' studies with several foci. These broadly support the four-fold framework. For example, a number of enquiries studied the composing and improvising processes of students and professional musicians, with an emphasis on collaborative processes, sometimes with the use of IT (Barrett, 2006; Barrett and Gromko, 2007; Berkley, 2004; Burnard, 2005; Burnard and Younker, 2002, 2004; Clarke, 2005; Collins, 2005; Fautley, 2004, 2005a; MacDonald, Byrne and Carlton, 2006; McCord, 2004; McGillen, 2004; Nilsson and Folkestad, 2005; Sawyer, 2006b; Seddon, 2005, 2006; Seddon and O'Neill, 2003; Soares, 2006; Söderman and Folkestad, 2004; Young, 2003).

While Burnard and Younker (2004) compared the individual composing pathways of students from Australia, Canada and the UK, Burnard (2005) used critical incident charting to explore the thinking of students ($N$=2), student teachers ($N$=2) and experienced school teachers ($N$=2) drawing from two previous datasets comprising interviews with children aged 12 (Burnard, 2000) and the same participants aged 16 (Burnard, 2004), as well as a new teachers' dataset. She asked students to recall their composing processes and other musical experiences following an undulating line drawn on a sheet. However, she did not collect any data on the teacher's perceptions of musical creativity. Fautley (2004, 2005a) examined individual teacher interventions in the composing processes of groups of school students aged 11-14 and suggested a model for the group composing process, but again, did not focus on the teachers' thinking. MacDonald, Byrne and Carlton (2006) studied the relationships between creativity, Csikszentmihalyi's concept of flow and the quality of the compositions by 45 university students undertaking a group composition task. Soares (2006) explored the computer-based composition processes of students aged 13-16 in two

music schools in Brazil. These investigations, nevertheless, did not explore the teachers' thinking processes. Collectively, these latest studies have principally focussed on the nature of the creative 'process' in a variety of contexts, from the students' and/or the researchers' perspective. The outcomes of such research will be explored later in the paper in relation to its own data.

**Recent enquiries on the assessment of musical products and the environment for creativity**

Some of the above studies considered other areas of the four-fold framework as well as the creative process, such as the assessment of the musical products, or the environment to nurture creativity (Barrett, 2006; Berkley, 2004; Fautley, 2004; MacDonald, Byrne and Carlton, 2006; McCord, 2004; Soares, 2006; Young, 2003). For instance, Barrett (2006), in her study of 'creative collaboration' between a composer and a student-composer, examined the social support received by the student, which she suggested can be seen as part of the 'emotional climate' conducive to creativity development (Beetlestone, 1998). Berkley (2004) also analysed the teachers' management of a 'positive learning environment', and MacDonald, Byrne and Carlton (2006), in their investigation of the relationships between creativity, flow and quality, examined how the students' explanations of their flow experiences related to the specialists' assessment ($N$=24) of quality in their compositions.

A considerable number of studies have taken as the focus of enquiry the assessment of 'musical creativity' in compositions by young people and adults, and in compositions and performances by recognised musicians (Kozbelt, 2005, 2007; Priest, 2006; Widmer, 2005). In some instances words such as 'imaginative', 'inventive' and 'composing competence' were used instead of 'creativity' (Fautley, 2005b; Seddon and O'Neill, 2004). Taken as a whole, these studies offer data to build two folds of the framework, i.e. the creative product and the environment for creativity, exemplifying the increasing researchers' interest in these issues.

**Research on creative students and other studies that complement the four-fold framework**

Some recent music research enquiries have as a principal focus the characteristics of creative students (Goncy and Waehler, 2006) or the commonalities regarding some of the environment, process and product areas, such as learning strategies using IT, group processes and assessment (Folkestad, 2004). A number of other studies have complemented the four-fold framework with the analysis of 'creative teaching practices' in the context of a secondary music teacher education course in England (Alsina, 2006) and with philosophical considerations of the meaning of creativity in music education (Humphreys, 2006). In addition, Burnard (2006b) discussed the individual and social worlds of children's musical creativity, examining contextual influences that shape how a child's musical creativity develops from early childhood to adolescence.

Only two investigations were found to explore English primary school teachers' perceptions of composition (Dogani, 2004) and improvisation (Koutsoupidou, 2005) which reported the teachers' views and the use of these activities in the primary classroom. Further, whilst there is an expanding literature on musical composition and improvisation, in all of the above there are no accounts that focus on secondary school music teachers' perceptions of creativity and we hope that this article will offer insights that begin to address this gap. This will be achieved by using a qualitative approach for the following reasons: most previous studies focussing on the students' views, characteristics and processes, followed a variety of methodological approaches. For instance, older investigations that focussed on the perceptions of creativity by teachers of different subjects (Fryer and Collings, 1991; Runco, Johnson and Bear, 1993; Torrance, 1963, 1965) used quantitative methods, offering detailed descriptions of the participants' thinking but little analyses of the reasoning behind it. This approach essentially treated the attributes under scrutiny as fixed over time. However, a qualitative approach allows for an exploration of 'how individuals construct, maintain, and reinforce' their ideas (Elliott, 2007: 6), hence addressing this issue. Indeed, it is for this reason that a qualitative approach was deemed more appropriate for the original enquiry and for the present examination of data. Further, it allows for the development of a generative model of the music teachers' thinking illustrating how the teachers' perceptions develop over time.

**Methodology**
The participating teachers were deliberately selected following a 'maximum variation' approach (Lincoln and Guba, 1985) on the basis of the combined characteristics of their personal backgrounds and their schools' socio-geographical situation. Their classrooms were videotaped for between 3 to 5 hours during lessons involving composition and improvisation activities with students aged 11-14 years. Teachers were interviewed at the beginning (prior to the videotaping) and at the end of the study. In the final interviews, they watched extracts of their lessons and discussed these with the researcher. This video elicitation interview technique had been developed in an earlier pilot study involving 3 teachers from different schools, which were not included in the final group (Odena, 2001b). All final interviews were understood as in-depth 'conversations with a purpose' (Burgess, 1988) loosely structured around the videotaped extracts. Up to 30 minutes of short extracts were selected for each teacher, summarising their 3-5 hours of lessons. The aim of these extracts was to allow the teachers to reflect on what happened during the unit of work in terms of: the different students in the class, the classroom environment, and the students' processes, products and assessment. Due to confidentiality reasons the selection of extracts was not validated with external observers. Instead teachers were asked to comment on the selection at the end of the interviews and all participants agreed that the extracts contained a good summary of what happened during the unit of work. During the interview the interviewer stopped the video after each extract and gathered the teacher's views of what went on during the lesson, using open ended questions such as 'would you explain what

happened there?'. When appropriate, they were also asked to expand or clarify any comments they made relating to the four PEPP areas.

Interviews were fully transcribed and were analysed using the specialist software NVivo (Gahan and Hannibal, 1998; Gibbs, 2002; Odena, 2007a). The analysis embraced a thorough process of reading, categorising, testing and refining, which was repeated by the first author until all categories were compared against all the teachers' responses and the overall analysis was validated with a colleague researcher. The same process has been labelled as thematic/content analysis (e.g. Kvale, 1996) and 'recursive comparative analysis' (Cooper and McIntyre, 1993) and has successfully been used in other projects by the first author (e.g. Leitch et al., 2006, 2007a, 2007b)[3]. 87.2% of the transcripts were categorized in the analysis, i.e. 236,636 characters from a total of 271,438 that included the interviewer's questions and the teachers' responses. Two additional independent researchers who read randomly selected parts of the interviews further validated the categorisation. Participants were also invited to answer a Musical Career Path questionnaire, derived from a similar technique used by Burnard (2000, 2005) and Denicolo and Pope (1990). Employing an undulating line drawn on a single sheet, teachers were asked to write down, in each bend of the line, specific instances that they considered crucial in the direction of their musical and educational lives (see example in Figure 1).

[Insert Figure 1 here]

Participants were asked to complete the Musical Career Path response sheet answering the following question (after Burnard [2000] and Denicolo and Pope [1990]):
> Thinking back over your life experience, please reflect on specific instances, or critical incidents, which you consider have influenced the direction of your musical live. Brief annotations may be included about any experience that precipitated a change of direction or any influential incident. Please reflect upon your experiences of music studying, making and teaching, at school, with friends and family as well as within the community, and elicit particular incidents and experiences which influenced your career path.

By completing this exercise instead of asking a predetermined list of questions, we intended to gather illustrative examples, maintaining a qualitative-naturalistic research approach (Eisner, 1991; Guba and Lincoln, 1982; Lincoln and Guba, 1985). We guaranteed anonymity to participants by assuring them that the videotapes would not be disclosed in the future and that their names would be changed when reporting the study's results. Moreover, in the following sections, confidential information such as years, school and university names are omitted and the gender of one participant has been changed. The teachers' own words are incorporated in the main text in inverted commas.

Overall, the six teachers had fairly contrasting backgrounds. Patrick, the Head of Music in a well-resourced comprehensive school, studied classical performance (piano and viola) as well as a 'conventional' music degree, in which the only composition that he 'ever did' was 'a pastiche of nineteenth century harmony and counterpoint' (his Musical Career Path is included in Figure 2 later in the paper). Emma learned the piano and sang 'with parents from the age of six', but stopped her formal music training at thirteen. At College, she wrote songs, joined a rock band and toured Europe. She had worked as a singer and studio engineer and was currently teaching part-time in a comprehensive inner-city school, and conducting vocal workshops as a freelancer. The third teacher, Laura, remembered arranging songs as a teenager at the piano. She went to a Performing Arts College at sixteen, studied a Music and Drama degree at university, majoring in composition, and had experience playing and teaching abroad. She was the Head of a small department in an inner-city multicultural comprehensive in an economically deprived area. James, the fourth participant, learned to play the recorder and the cornet at school. At university he specialised in flute as part of his Music and Drama degree and undertook a teacher education course in which he became acquainted with 'world music', but was not taught 'how to go about composing'. He was teaching at a comprehensive school in a rural area. The fifth participant, Elaine, had classical piano training from an early age and studied a Music degree at university, which did not include 'original composition'. Elaine was the Head of a well-resourced department at a comprehensive school in a rural area. The sixth teacher, Sarah, played the recorder, clarinet and cello as a teenager and then went on to study a Music degree whilst being a clarinet instrumental teacher. Sarah was the Head of Music at a comprehensive school on the UK's South coast and was also playing regularly in an orchestra and with local jazz groups.

**The teachers' perceptions of creativity**
In the long conversations that followed the viewing of the videotaped lessons, teachers not only talked about the students' work but also about the Government's statutory music guidelines and the mixed feelings experienced when watching themselves on TV. For the purpose of this paper, we focus here on the participants' talk on the creativity of their students. Twenty-two categories and subcategories that referred to the four-fold framework (see below) emerged from the analysis of the interviews. These are listed in Table 1 and described in the Appendix. The participants' perceptions exemplified, although in different ways, the idea of creativity as a capacity of all students. They viewed creativity in terms of what Craft (2001) and Gardner (1993) described as 'little c' creativity and earlier Elliott (1971) characterised as the 'new concept', where creativity is imagination as successfully displayed in any valued pursuit. Although participants did not agree on how 'creativity' was to be defined, they expressed illuminating views about creative pupils, the environment for creativity, the creative process and creative musical products.


[Insert Table 1 here]

The similarities and differences between the literature on creativity and these teachers' perceptions (in relation to the second research question) have been explored elsewhere (Odena, Plummeridge and Welch, 2005). Major issues that emerged included "the pupils' learning styles, the music school culture and the positive group dynamics" (Odena et al., op. cit, 2005: 16). Four of the six teachers observed that pupils experienced music activities with different ways of learning. Borrowing Entwistle's (1981; 1991) terms, some pupils preferred to work following small steps in a 'serialist' style of learning, whilst others learned in a 'holist' way, taking the activity as a whole. The former can be compared with 'adaptor' pupils and the latter with 'innovator' pupils (Brinkman, 1999). For the 'adaptor' type of student, closed activities with a range of set instructions were perceived as more appropriate to develop their musical creativity. For instance as Elaine noted:

> For that [blues composition] unit, when they do their improvisation using the Blues scale…students…often get into a pattern, and they just repeat it over and over again. So, we have a checklist of things like 'have some short notes and some long notes', 'use different pitches', 'repeat little patterns by sequence' and things like that. (Elaine)

In addition, Elaine observed that some of the students who feel more confident working with closed composition activities would do exactly what she 'asked them, and do it really well', and she commented they would be 'creative as well'. Emma, Laura, Elaine and Sarah observed nevertheless that the majority of their pupils were happily engaged with activities with different degrees of 'open' composition. Emma, commenting on video extracts of her pop song composition unit, noted that most of the pupils were 'involved in some way or other' and that only 'about ten per cent' did not fully engage with these activities. The issue for music teachers, then, is how to cope with the different learning styles in any given classroom. As Elaine observed, some pupils 'enjoy the freedom of improvising and others think it's too hard, because they don't know what to do'. She commented that the latter group of pupils just needs 'a few ideas feeding in'.

Teachers' views on the most appropriate environment to enhance creativity were coded under two broad categories: 'Emotional environment' and 'Physical environment' (a description of these categories is included in the Appendix). Additional subcategories within these, such as 'Motivation' and 'Time requirements' (Emotional environment) illustrated practical issues in accordance with suggestions from previous studies. Three of the six teachers participating in the study observed that in composition projects, added time pressures brought by examinations and a short time to finish the units, affected the atmosphere for creativity. Therefore the overall quality of the pupils' work suffered:

> [Students] liked they were free to come up with their own ideas, but they wanted more time. (Laura)
> We had such a short amount of time…there was that added pressure of having to learn the songs for the concert AND do the song-writing… I had to push, push,

push, push the whole time….And now we've come back after half term, the concert is over…[and] they've stopped fighting me. You know, it is just really relaxed and it wasn't relaxed before. (Emma)

James explained this happened particularly at the end of Term:
Ideally if we had enough time we could then go through each group and give them an idea of what they could have done to improve it. So I try to do that, if I've got time… But the Year 7s seemed very rushed at the end of last term.

The strain suffered by pupils under time restrictions during music activities was perceived by these teachers as detrimental for their compositions. These time pressures could be brought by exams, preparation for school concerts, increasing workload at the end of term or poor weekly timetable for music that would limit the time allocated to composition projects.

Other subcategories were not found to be examined in the literature to the same extent. For instance, 'School culture' contained comments on the schools' music activities and the status of the Music Department within the school, which included a case where the relations between the department and the school senior management were not positive (i.e. Laura). This school had a lack of space and severe budget restrictions, but 'offered valuable insights on how to counterbalance this situation by making use of the pupils' instruments, getting bids from outside agencies and sharing resources with other schools' (Odena et al., op. cit, 2005: 15). Regarding the creative process, these teachers presented different views depending on the activities and the students, particularly Laura and Emma, who were more circumspect and were disinclined to describe a 'universal process' for all students. It seems from the variety of views found in the study, that having a compulsory curriculum does not necessarily unify the views of the practitioners regarding creative musical products. All teachers, nevertheless, had criteria to assess the pupils' work, which were largely negotiated. Indeed, they observed that discussing the assessment with the students was essential to make them aware of the qualities of good work, a view which resonates with the students' views gathered in recent music education investigations (Berkley, 2004; Fautley, 2004) and in an enquiry on the introduction of 'Assessment for Learning' approaches in Secondary schools (Leitch et al. 2006, 2007a).

**The influence of teachers' musical and professional experiences on their perceptions of creativity**
A detailed examination of the Musical Career Paths and interview transcripts revealed that participants' experiences could be summarised as falling within three strands: *Musical*, *Teacher education* and *Professional teaching* strands (Odena and Welch, 2007). Experiences in the *Musical* strand included their own music education at school and undergraduate level, as well as all their current and past musical activities out of school. The *Teacher education* strand comprised the teachers' explanations of their experiences

during music education postgraduate courses. Finally, the *Professional teaching* strand embodied all the anecdotes from their classrooms as well as the memories from previous schools. Participants' musical and professional experiences were summarised in strands for the purpose of making sense of the data; nevertheless the strands contain explanations of social activities that can not be completely isolated. The significance of the strands on the teachers' perceptions of creativity seemed to relate proportionally to the level of variety in their experiences. These appear to have influenced their views of creative pupils, an environment that fosters creativity, the creative process, and creative musical products. Both the *Music* and *Professional teaching* strands appear to have had a significant effect on the teachers' views of creative pupils. The importance of the *Professional teaching* strand is apparent in Patrick's and Laura's recollections from their current and previous schools: working in particular socio-economic school areas brought opposite perceptions of the importance of the students' home backgrounds on their potential. Patrick concluded that, from his teaching experiences, a musical family background was not necessarily a condition for creative students:

> I can think of students who are very musically able…who don't have musical backgrounds and others who do.

In contrast, Laura observed that:

> [The pupils' home] background does have a very large effect on what they bring, and what they come out with.

Interestingly, the schools and the day-to-day teaching experiences of Laura and Patrick were different too. Their comments regarding their school music culture underlined the differences between the two schools. Laura was teaching pupils with a wide range of family incomes and backgrounds from different cultures. Patrick was teaching pupils with more similar backgrounds in a relatively affluent city area, in a girl's school where the status of music was far removed from Laura's school. Whilst Patrick managed a well-resourced Music Department ('the instruments we have cost quite a lot of money'), Laura was the Head of a small department with a shortage of staff and resources:

> It's a battle to find space in this school… We [have] got a bid from an outside agency to promote the music from certain cultural groups [but] we have no money FROM the school.

As demonstrated above, Patrick did not have, at the time of data collection, the same perceptions as Laura regarding the home background influence on the pupils' creativity. In addition, he had not experienced a school like Laura's in his own education, as can be seen from his Musical Career Path:

[Insert Figure 2 here]

In contrast, Laura taught in a large multicultural comprehensive inner-city school in what is classified as an economically deprived area. Uniformed and undercover police could often be seen near the school gates, and she had to keep instruments locked in two large metal cages to prevent thefts. Before starting to teach at this school, she also had experience of working with hearing impaired children in another comprehensive urban school and at a children's camp in an Eastern country. Figure 3 below includes an extract of her Musical Career Path:

[Insert Figure 3 here]

The *Musical* strand also, had an effect on how teachers perceived the students. For instance, Emma felt that thanks to her musical experiences as an adolescent - finding school music restrictive and giving it up at 13, even though she continued to compose songs at home - she could now recognise and help the pupils more inclined to open composition activities and a dislike for rules (see categories 1 to 4 in the Appendix).

Regarding the teachers' views of an environment that fosters creativity, the *Musical* strand experiences emerged as the most influential. Laura, Emma and Sarah, who had experience with different musical activities, including composition, and different music styles, were more articulate at describing such an environment. Moreover, they were able to detect disturbing factors (e.g. 'anxiety', 'lack of time') and facilitating features (e.g. 'motivation') and improve the classroom conditions to maximise the musical development of all students. Other teachers with less contrasting experiences on the *Musical* strand were more inclined to give the class a predetermined activity and expect creativity to 'grow' (i.e. Patrick). The *Teacher education* experiences generally introduced participants to different music styles but did not go further into teaching them how to compose.

As mentioned earlier, Emma and Laura were more circumspect than other participants when describing the creative process. These two teachers, who had composing experience, acknowledged that although the creative process required time and effort for everybody, students would get to different composing stages in their own time, and that no general rule or rigid staging could be applied to all pupils.

Regarding the assessment of creative musical products, participants with contrasting experiences in their *Music* strand (different music styles) would consider from the outset as 'creative products' some compositions that did not follow the structure and instructions of the classroom activity. For instance, Sarah and Emma observed that they would discuss and agree an individual's assessment criteria with some students. Elaine acquired a similar broader approach from her *Professional teaching* experiences, and an example of her teaching is discussed in the following section. The participants' *Teacher education* experiences did not appear to affect their perceptions of creative products.

**Discussion: towards a generative model of the teachers' thinking on musical creativity**
The participating teachers acknowledged the effect of their musical expertise (e.g. when assessing the pupils' musical products) and the relative influence of their teacher education courses. In addition, their teaching experiences throughout their careers (*Professional teaching* strand) appeared to shape their perceptions of musical creativity in the classroom in what might be described as a continuing feedback system (see Figure 4). These findings support Dogani's (2004: 263) suggestion that the teachers' choices regarding practice 'are constrained by their circumstances and their perceptions of those circumstances' and that 'in order to affect the quality of children's learning positively, teachers need to draw their teaching from a range of their previous experiences' as musicians and teachers. Figure 4 outlines the interactions between the PEPP four-fold framework 'at work' and the three strands, and how the interactions have the potential to modify the teachers' perceptions over time.

[Insert Figure 4 here]

Essentially, all the above elements are in constant interaction. When preparing the units of work and implementing them in the classroom, the teachers are drawing on their previous experiences (*Musical*, *Teacher Education* and *Professional Teaching*) while simultaneously carrying their preconceptions of creativity (*Pupil, Environment, Process, and Product*). Depending on the teacher, their preconceptions have varying degrees of consciousness. For instance, Sarah and Elaine observed that they were not sure to what extent they were imposing their ideas of creativity when assessing the students' work:

> [When marking] you are modifying pupils' work…taking away some of their creativity, because you are inherently working within norms. (Sarah)
> By saying to them something like, 'if you come back to this note your piece will sound finished off and more complete'…you are teaching a tradition…intervening in a way that makes the tune sound better, but at the same time you want them to be able to hear that it sounds better. So, in other words, I don't just accept their ideas, at face value…and I don't know if that's right or not.. (Elaine)

In contrast, Patrick did not see a direct influence of his views on the students' creativity: 'I give [them] the instruments and space…and then creativity will grow'.

The left arrow in Figure 4, from bottom to top, shows how teachers develop 'educational connoisseurship' (Eisner, 1991) through classroom teaching (e.g. observing the work of different pupils and their composing processes, and assessing musical outcomes). At the same time, their daily work slowly updates their preconceptions of creativity (right arrow), developing new PEPP perceptions. For instance, of the environment most appropriate to facilitate the development of musical creativity, or, as discussed in the previous section, the influence of the students' home backgrounds on their potential.

It is apparent that the teachers with more experience of different music styles and composing activities were more aware of the different ways students can approach a composition assignment. They had learned from their musical experiences as well as from their teaching experiences. Some teachers were further in their learning journey than others: '[when teaching] my musical skills are continually being developed and stretched' (Patrick, Musical Career Path).

This learning journey carries with it plenty of opportunities for what has been defined by Schön (1983) and Day (1999) as reflecting 'in' and 'on' practice. The first is the thinking and decision-making that goes on while teaching, in 'real time', whereas reflecting 'on' practice is the type of thinking undertaken after the teaching has finished (something that was facilitated in the present study by the use of the video eliciting technique). These reflecting processes, which have been represented as a cycle including planning, acting, observing and reflecting (e.g. Cain et al., 2007), require a fair amount of time and will from the teachers, but ultimately, they are beneficial for practice. The generative model of the teachers' thinking presented (Figure 4) embodies the spirit of the reflective practice cycle and incorporates additional elements that interact and appear to generate changes in the teachers' thinking on musical creativity.

An illustrative example of how these interactions have the potential to modify perceptions and teaching practices over time is the initial description of a student as 'conflictive' in Elaine's school, who towards the end of the school data collection was perceived more positively. This boy had some behavioural problems in the past. During a unit on 'blues' in which all students were asked to rehearse a blues melody at the keyboard and compose and record a solo part, he approached the activities in a different way. He adapted the original blues rhythm to a more contemporary 'techno' style and quoted a melody from a dance song in his solo:

> He would just do exactly what he wants in any lesson…and he loves playing the keyboard, so I'd rather have him in the class doing something, than out of the class – which he has been during some of the year. So I try not to get too cross if he is not doing exactly what I've asked them to do. And what he was doing I felt was quite valid. (Elaine)

She then gradually re-negotiated the tasks and the assessment criteria with the student, allowing him an increased level of freedom. Watching the videotaped lessons during the final interview, she changed her initial description of the student, observing that he was also 'very creative' in a way that was 'out of the ordinary'. Commenting on one of the taped extracts, Elaine stated:

> He is very creative in a kind of anarchic way in that he would do things like listen to the tunes on his mobile phone, and reproduce them on the keyboard…and that's quite a skill.

In fact, all the teachers had to adapt the composition/improvisation tasks to the different types of students, taking into account the limitations of the physical environment available (all participants wished they had more resources), and their own preferences (choosing a music style and activities they felt comfortable with). Their role in assessing all these factors, specially the unpredictable ones, and their role in acting upon them in 'real time' was crucial to the success of the units of work and highlights the importance of the pedagogical expertise of these teachers, or what Eisner (1991) calls 'educational connoisseurship'. This connoisseurship is gained through years of classroom practice, which would explain the relatively minimal influence of the *Teacher education* strand on the teachers' perceptions, when compared with the other two strands.

**Conclusion: educational implications and issues for further enquiry**
As we have shown in this paper and in previous discussions of these teachers' thinking (Odena et al., op. cit., 2005; Odena and Welch, 2007) the perceptions within the PEPP areas should not be generalised: teachers would develop their own slightly different versions depending on their past experiences, current working context and teaching, and potentially, any other musical activities undertaken outside school.

This study highlights the importance for music teachers of having *practical knowledge* of different music styles in order for the knowledge to impact on their teaching. It also supports suggestions that practitioners need appropriate composing experience if they are to both assess work from a range of styles (Pilsbury and Alston, 1996) and engage with the students' composing processes (Berkley, 2001). These processes are not homogenous and the results from this enquiry corroborate observations from other studies regarding the influence of the music style and the students' individual differences on the composing processes (Burnard and Younker, 2004; Folkestad, 2004; Green, 1990; Seddon and O'Neill, 2003; Soares, 2006). All these recent studies exemplify the complexity of creativity in music education, which is not always reflected in teaching manuals and statutory guidelines. The generative model illustrates how this complexity is dealt with in the thinking of the participating teachers.

One educational implication that follows from this is the importance of newly qualified music teachers working alongside experienced practitioners to develop educational connoisseurship. The Teacher Training Agency (TTA, 2002a) (now renamed the Teacher Development Agency) has a programme for new teachers to facilitate work leave for Continuing Professional Development courses for up to a tenth of the weekly teaching load. However, the same arrangements are not available for experienced teachers to provide mentoring. Given that the generative model would work from the outset of each teacher's career and that participants presented different views that appear to be linked to different teaching and musical experiences, it would be advisable that newly qualified teachers benefit form a mentoring scheme in order to have a sound start in the assessment and reflection of their teaching.

Implications for teacher education courses are, as mentioned earlier, the need for practical work using a variety of different music styles and activities. In a survey of teachers' perceptions and practices of musical improvisation in English Primary classrooms, Koutsoupidou (2005) found that teachers were more likely to use improvisation if their higher education included this type of activity. Reflecting on the social worlds of children's musical creativity (Burnard, 2006a) could also be beneficial during development courses to allow teachers to go beyond collecting 'teaching recipes'[4]. Both practical and reflective skills are needed to facilitate the engagement of pupils in composing/improvising experiences with a sense of musical 'flow' (MacDonald, Byrne and Carlton, 2006). Finally, given the importance of the *Musical strand* on the generation of these participants' thinking, further research is needed on the value for classroom teaching of providing opportunities to full-time music teachers to enjoy music-making activities out of school with other musicians.

The purpose of this study was to offer insights on the issues under enquiry. The video eliciting interview technique and the Musical Career Paths helped to illustrate these teachers' cases with 'intense particularisations' rather than universal statements (Elliott, 2006). Further studies might include a longitudinal investigation, following a group of teachers from the beginning of their careers to a few years into their professional lives. A longitudinal design could reveal the progressive acquisition of the teachers' perceptions of creativity and their modification through interaction with their experiences, giving further support to the proposed generative model.

**Appendix: Description of categories and subcategories (in italics)**
PUPIL THEME
1 Personal characteristics: Teachers' descriptions of the most creative pupils.
2 Individual learning: Participants' observations about the different way of learning of different pupils and the need to adapt the teaching to them.
3 *Adaptor pupils:* Participants' comments on pupils that have difficulties to cope with openly defined composition activities.
4 *Innovator pupils:* Teachers' observations of pupils that cope easily with openly defined composition activities. Comments on pupils who dislike closely defined composition tasks.

It also includes comments on some situations where these pupils helped their peers (e.g. Laura and Sarah).

5 Home background: Participants' observations about the influence of the family background on the pupils' musical skills and creativity.

ENVIRONMENT THEME

6 Emotional environment: Teachers' general comments about the emotional environment, including the importance of having a 'nice atmosphere' and 'feeling comfortable' and not 'insecure' when playing one's own composition or improvising in front of peers.

7 *Motivation:* Comments on the pupils' motivation during composition and improvisation activities, including how these teachers try to motivate unmotivated pupils.

8 *School culture:* Participants' descriptions of their school's music activities and its aims (e.g. extra curricular activities); teachers' comments about their Music Department and the department within the school.

9 *Teachers' role:* Observations on the teacher's role in teaching composition and improvisation. This category emerged sometimes mixed with other categories. For example Emma's observations came together with the 'Teaching methods' category.

10 *Teaching methods:* Participants' comments on their methods during the lessons. Again this category emerged sometimes including other categories and subcategories like 'Classroom settings' and 'Teacher's role'. This particular category reflects on the comments about the use of all of these variables in order to support the development of the pupils' musical creativity, as well as observations on the participants' actions during the lessons videotaped.

11 *Time requirements:* Observations regarding the time needed by pupils to complete the composition projects properly, including the negative effects of 'lack of time' due to several factors (e.g. preparation of concerts and compartmentalisation of the school timetable).

12 Physical environment: General comments on availability of physical environment.

13 *Complaints and proposals for improvement:* Includes complaints raised by teachers about staff shortages, budget cuts and lack of space.

14 *Classroom settings:* Comments on classroom organisation and specific use of the physical environment during the videotaped activities (e.g. rooms, instruments, spatial organisation for group work).

PROCESS THEME

15 Different activities: Participants' descriptions of the activities videotaped and comments on its aims.

16 Group process: Teachers' observations of the pupils' group dynamics when using group work in composition activities. Includes descriptions of special moments when a 'happy idea' appears in this process.

17 Improvisation-Composition: Participants' comments on the relation between composition and improvisation.

18 Structured process: Comments about following a structured process when teaching composition and improvisation. Includes Patrick's observation of teaching improvisation

following 'three stages': setting up, playing and reflecting.

19 Unstructured process: Participants' comments about not following a structured way of teaching composition and improvisation. Including Patrick's observation on the shift in the level of different age groups without having explicitly taught them skills on improvisation; Emma's comments on the pupils' different ways of approaching the composition activities and different timings in reaching different stages in the composition process; and Laura's comments on her 'free composition' unit.

PRODUCT THEME

20 Assessment: Explanations of the criteria used to assess pupils' products and what teachers were looking for in a good composition or improvisation. Includes comments on pupils self-grading and difficulties experienced by participants when marking individual and group work.

21 Originality: Participants' explicit and implicit comments on originality.

22 Music style and conventions: This category includes comments on the style used in the music activities during the lessons and its effects on pupils, and the issue of teaching and learning within given traditions and conventions.

**End notes**

1. The ESRC Teaching and Learning Research Programme (TLRP) Project 'Investigating Musical Performance' (IMP) is a two-year (2006-2008) comparative study of advance musical performance. It has been devised to investigate how Western classical, jazz, popular and Scottish traditional musicians develop their learning about performance in undergraduate, postgraduate and wider music community contexts. For more information on this project see http://www.tlrp.org/proj/Welch.html

2. A selection of results of this investigation was presented at the 21st Research Commission Seminar of the International Society for Music Education (Price [ed], 2006). Other aspects have been considered from a Spanish and Catalan perspective in Odena (2005a, 2005b and 2006). Issues regarding the video techniques employed in the study and the dissemination of the research to different audiences have also been examined (Odena, 2002, 2004), as well as the application of some of the ideas into an action research project aimed at improving the students' learning and performing of music scores (Cabrera, Lluna and Odena, 2006; Odena and Cabrera, 2006; Odena, 2007b). Further ideas developed from the action research project have been applied to broaden the meaning of the term 'school instruments' and to facilitate the student teachers' understanding of music skills development (Odena, 2008).

3. The first author, amongst other methods, has employed the same process using NVivo to explore Secondary school students' (*N*=210) perceptions of assessment and learning in six schools in Northern Ireland. This study was part of a bigger research project called 'Consulting Pupils on the Assessment of their Learning (CPAL)', which was supported for eighteen months by the ESRC TLRP (www.tlrp.org). For further information on the CPAL methodology see the references by Leitch et al. (2006,

2007a, 2007b), the project's website at www.cpal.qub.ac.uk, or the TLRP website at www.tlrp.org/proj/leitch.html

4. In a study of statutory 'Standards' and creative teaching practices in an English music teacher education course, published in Spanish, Alsina (2006) found that trainees perceived the Standards as a 'sterile ticking box exercise'. Student teachers observed that the 'Professional Standards' (Teacher Training Agency, 2002b) studied in the course 'had little to do with their development of musical and pedagogical skills' (Alsina, 2006: 13).

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**Figure 1. Extract of Sarah's Musical Career Path response sheet**

*I was brought up in a musical environment in that there was an abundance of classical music played (recordings), along with folk music + Abba! Neither parent plays an instrument.*

*In Primary Education I took part in every event possible as singer. I took up recorder at the age of 5, clarinet at 9 and cello at 11. In Secondary Education I started to teach myself keyboard skills. I joined three orchestras – 2 youth and 1 adult, where I was asked to play Double Bass.*

*A major turning point was when I went to college at 16 on a Pre-Professional Music Course and studied Music for 28 hrs a week! I received piano lessons for the first time and played in many concerts (almost 1-2 a week). This experience cemented my commitment to music. I met some people who are still close friends and a source of inspiration. I decided on teaching as a career.*

*I studied for a BMus and continued to actively participate in as many concerts-ensembles as possible.* […]

**Figure 2. Extract of Patrick's Musical Career Path**

*When about 5-6 years old I used to play around on the piano at a neighbours' – eventually I persuaded my parents to buy a piano and I started lessons […] I started the violin when I went to secondary school and after a year changed to the viola. I played in the orchestra and the wind band and performed in the regular concerts.*

*At 15 I joined the* [County] *Youth Orchestra - went on a tour to New England, USA - some of my happiest musical memories; the conductor's teaching style had a great influence on me. Studied A-level music at a specialist music course - lots of playing (especially piano accompanying) and concerts.*

*I studied for a music degree at* [Oxbridge] *- very academic course but I had an outstanding tutor who again influenced me as a teacher; lots of orchestral playing and opportunities to conduct which I really enjoyed.*

*After graduating I went to* [an English university] *to do a PGCE - I have always wanted to teach ever since I was about 6 years old! The course was excellent - introduced to many different styles of music - and I had two very contrasting but stimulating teaching practice schools. Both heads of department were very influential on my own teaching.*

*Started teaching in an inner-city boy's school - learnt a lot, mainly about how not to run a music department! After 18 months I went to be a head of department at another school. After 4 years I came to* [this school] *where I am now Head of Department. I really enjoy working here and am very proud of what we have achieved over the last four years. I find my teaching very creative and stimulating and my musical skills are continually being developed and stretched*

**Figure 3. Extract of Laura's Musical Career Path**

*With a degree in Music and Drama, and composition being a strong interest, using music technology as an instrument was very exciting. Music making with youngsters at degree level led me to work with hearing impaired children in a* [city] *comprehensive school and at children's camp in* [an Eastern country].

*Living in* [a North African country] *was a strong link with teaching music at a school and playing Irish folk music at a regular venue.*

*Returning to get the PGCE at* [an English university] *and ending up running a secondary music department at a* [city borough] *comprehensive school (still there!!).*

*Travelling to South Africa on a music tour with youngsters has been an eye opener. Creativity in youngsters is alive and prospering* […]

**Table 1. List of categories and subcategories (in italics)**

| PUPIL | ENVIRONMENT | PROCESS | PRODUCT |
|---|---|---|---|
| 1 Personal characteristics | 6 Emotional environment | 15 Different activities | 20 Assessment |
| 2 Individual learning | *7 Motivation* | 16 Group processes | 21 Originality |
| *3 Adaptor students* | *8 School Culture* | 17 Improvisation-Composition | 22 Music style and conventions |
| *4 Innovator students* | *9 Teachers' role* | 18 Structured process | |
| 5 Home background | *10 Teaching methods* | 19 Unstructured process | |
| | *11 Time requirements* | | |
| | 12 Physical environment | | |
| | *13 Complaints and proposals for improvement* | | |
| | *14 Classroom settings* | | |

**Figure 4. A generative model of the teachers' thinking on creativity in music education: interactions between the teachers' experiences, perceptions and classroom teaching**

TEACHERS'
EXPERIENCES
1 *Musical*
2 *Teacher Education*
3 *Professional*

PERCEPTIONS OF
CREATIVITY

*Pupil, Environment, Process, Product*

CLASSROOM
TEACHING

PUPILS

DEVELOPMENT
OF
EDUCATIONAL
CONNOISSEURSHIP

COMPOSING
PROCESSES

DEVELOPMENT
OF
PERCEPTIONS
OF CREATIVITY

MUSICAL
OUTCOMES

EMOTIONAL AND PHYSICAL ENVIRONMENT