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Investigating Talk in Year 9 Group Composing: A Case Study

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Abstract

This study investigates the co-constructed nature of collaborative composing, examining how two pairs of Year 9 students compose a film underscore. The findings indicate that the process of composing required experimentation, demonstration and use of technical vocabulary. While both groups created a similar volume and quality of musical material, there was a disparity in whether students took equal roles. I suggest that this was not due to lack of engagement, but to: (i) mismatched levels of experience using required technology, (ii) students' individual preference for working alone or with others and (iii) relationships between students. The study highlights the need to establish a better knowledge of students' preferences for working as individuals or in groups, as well as the extent of their informal learning. The findings also reinforce the importance of ensuring students learn how to use appropriate terminology, both through teacher modelling of vocabulary and demonstration of musical concepts.

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Background and Rationale

This investigation is situated in the intersecting fields of music and education. I recently completed Masters research (Bourne Swinton Hunter, 2018) investigating the “learning cultures,” that is, “the practices through which people learn” (James, Biesta & Colley, 2007), of aspiring and established professional adult musicians in two UK string quartets. The research considered the quartet as an educational site and used rehearsal practice as a unit of analysis, examining talk through sociocultural discourse analysis.

When I began the PGCE, my prior research experiences led me to question the transformative nature of collaborative learning in a secondary school music context. How do school-aged students successfully reconcile opposing opinions through talk in group projects? As a teacher, how can I facilitate my future students to do this more successfully? How might collaborative learning be used within the different (but related) contexts of performing, composing and appraising?

I decided to refine my research further to investigate collaborative composition. I had little knowledge of compositional processes prior to starting the PGCE. As I would be working with GCSE students on their composition coursework, in addition to helping small groups of students compose together at Key Stage 3, it was essential for me to understand how students compose.

In summary, I had a pedagogic rationale to research compositional processes further, so that I am better informed in teaching these students. My research was also intellectual, giving insight about the nature of students’ collaborative composition in secondary schools. Finally, there was a developmental purpose to completing this research, since an investigation of talk will make me more reflexive in my own musical collaborations and encounters with students, i.e. consider my own teaching practice.

Composing through Talk

Composing is an obligatory part of the English Key Stage 3 National Curriculum for Music (DfE, 2013) and a feature of exam syllabi due to Ofqual stipulations, including both the Edexcel and OCR courses. In this section, I examine key debates regarding whether composing is an individual or collaborative activity and introduce the conceptual lens of interthinking.

Collaborative Composing

This section presents the arguments for and against teaching composing as a group activity at Key Stage 3, identifying potential challenges. It outlines a model encapsulating the process of group composing, as well as noting the importance of technology.

There are many affirmative views of collaborative creativity, arguing that interdependence is necessary to human social life (John-Steiner, 2006) and the development of artistic thought and practice (Dissanayake, 2000). In his book examining cooperation in our civil society and modern politics, Sennett (2013) suggests that cooperation is “the foundation of human development, in that we learn how to be together before we learn how to stand apart” (p.13). Further to this, Barrett (2006) identifies key characteristics of collaborative work in her book examining collaborative creative practice through a psychological lens. These include: time and commitment to dialogue; extended time working together; mutual trust; shared ownership; ability to give and receive constructive critique; and complementarity (2006). For these authors, collaborative composing might be ideal for introducing students to GCSE music, which requires students to compose.

On the other hand, in a research project *Creative Dream* (Odam, 2000) examining the teaching of composing in secondary schools, Odam questions why students do not often compose individually until Key Stage 4, arguing that “composing is largely an individual activity” (p.109). Odam does not explain this statement or cite a source. The notion of the individual creator, a product in part of the Western romantic ‘genius’ ideal, is problematised by accounts of creativity as a social construct (Barrett, 2006). Collaborations may exist between the composer and the commissioner, or the composer and the performer. Dialogue can also take place between composers when creating a new work. The composer Robert Schumann’s *Impromptus on a Theme by Clara Wieck, Op 5* (1833) interweaves the composer’s own bass line with a theme of his wife Clara’s composition (Burton, 1988), and there are notable examples of popular music groups collaborating to write songs

(Biasutti, 2012). I therefore disagree with Odam's assertion that composition is primarily an 'individual' activity.

Odam (2000) also aims to identify some of the challenges associated with group work. Group-work is the dominant working method of composition in most secondary schools, but "much time is wasted" (p.109) and it contributes significantly to teacher and student stress. Odam identifies the key challenges as being inadequate resources (such as quiet practice rooms) and mixed-ability environments. For example, 68 per cent of pupils said they found it hard to concentrate with a lot of noise in the room. However, my current school has the resources in place for Year 9 students to have one computer or keyboard between two, and a splitter so they can each use a pair of headphones. If anything, collaborative composing reduces the need for so many resources. Furthermore, mixed-ability environments throw up challenges whether students are working together or separately.

No single method from whole-class, small group work, paired or individual work is recommended in Odam's research as most effective, although a large majority of pupils (86 per cent) said they liked to work with others when they were composing. Odam concludes that small-group activities are potentially very effective but need to be prepared in detail with a better understanding of the pupils' point of view. He suggests that (i) co-operative learning techniques need to be addressed by teachers, (ii) pupils need guidance and practice in using them and (iii) teachers need to be more willing to model, demonstrate and participate in composition activities (Odam, 2000, p.118). This provided a potential avenue for undertaking my teacher training research.

Fautley (2005), in a UK study examining lower secondary school students, notes that the national curriculum makes a statutory requirement for all students to undertake composing as part of their generalist music education up to the age of 14, but the focus of attention is on the composing process: "the activity rather than the product" (Bunting, as cited in Spruce, 2002). Fautley proposes a model of the group composition process, identifying a series of stages: (i) Initial confirmatory phase; (ii) Initial stage of music generation; (iii) Manipulation of musical material; (iv) Refinement work on piece; (v) Trial performance and refinement; (vi) Preparation for final performance; and (vii) Final performance. For this project, I planned to investigate the first four stages, both to refine further the scope of the investigation and since the final few 'performance' stages are less

applicable for composing using music technology (which was used by most students in my placement school).

The use of music technology in composing provides further dimensions to this research. Folkestad, Hargreaves and Lindström, (1998) identified the use of computers as integral for composing and it is likely that with recent technological advancements music technology has become even more pertinent. The authors identify an emerging pedagogical approach of computer-supported collaborative learning, theorising on the complex interplay of technology and collaborative learning. I hope to be able to add to the literature on this topic.

In summary, after reviewing the literature I would like to research further how to give students guidance in cooperative learning techniques, as well as investigating further the first four stages of Fautley's process of composition. I also need to consider the role of technology.

Interthinking and Co-Construction

My Masters research drew on Littleton and Mercer's (2013) seminal book *Interthinking: Putting talk to work*. The authors define the concept of interthinking as being how people are able "to think creatively and productively together" by using spoken language (p.1). This section explains how I will use interthinking as a conceptual lens for my research in the classroom.

The concept of interthinking draws on theory. As I discovered while completing my earlier research (Bourne Swinton Hunter, 2018), there is a need to consider the relational way that students negotiate their identity within the group. Theory use, like Vygotsky as applied by Littleton and Mercer (2013), can clarify these power relations and positionings. Littleton and Mercer describe how their work comes from Vygotsky's suggestion that development is shaped by the dynamic relationship between activities that are intermental (within people) and intramental (between people); and mediated by language – i.e. interthinking. As Littleton and Mercer make clear, for Vygotsky, talk is critical for students' development. I therefore intend to focus on student talk to understand how my Year 9 students can best work productively together.

Littleton and Mercer (2013) identify an Intermental Creativity Zone (ICZ), which they suggest is the product of an interthinking process. This is a continuing event of contextualised, co-regulated joint activity which is established on a "dynamic, developing basis of relevant common knowledge"

and which is “reconstituted constantly as the dialogue unfolds” (p.111). An ICZ describes a situation where people of equal status are working together to enable learning, which is likely to involve some common “goals, rules and ways of working (which may be challenged/revised over time).” It is possible that some of my Year 9 groups may enter an ICZ, based on common rules and ways of working.

Critically for my research exploring the construction of a collaborative composition, Littleton and Mercer introduce the concept of co-construction. This is defined as “the process whereby members of a group use a process of reasoned argument to examine, in a critical way, any ideas offered and compare options for how they should proceed to a successful conclusion” (p.114). As I discovered while doing my previous research, co-construction is a possible explanation for interthinking sometimes getting better results than individual thinking, or the assembly bonus effect (Laughlin, Hatch, Silver, & Boh, 2006). As mentioned above, I intend to analyse student talk when composing, but more specifically intend to focus on how students use ‘reasoned argument.’

Nevertheless, the process of co-construction creates a participation paradox, where the greater the complexity and emotionality of the material, the more dangerous it becomes to participate in discussions (Gayle, Cortez, & Preiss, 2013). Littleton and Mercer go on to consider the ways that social norms shape human behaviour, describing these norms as ground rules. During my earlier research (Bourne Swinton Hunter, 2018), I found that ground rules helped to promote a safer space for discussion. To facilitate a safer space for co-construction, I therefore intend to set ground rules at the start of the lesson.

In summary, when applying the lens of interthinking to student collaborative composing I will need to focus on dialogue and consider how students use ‘reasoned argument’. I hope to establish some of the goals, rules and ways of working at the start of the lesson that might contribute to creating an Intermental Creativity Zone and to ease the participation paradox of co-construction. This forms one aspect of my role as the teacher (see below).

The Role of the Teacher

This section examines further the role of the teacher in facilitating interthinking and co-construction.

In an article outlining the challenges of teaching composers, Winters describes how beginner music teachers at Oxford Brookes University are supported to develop opportunities for learner talk (Alexander, 2008) as part of the composing activity (Winters, 2012). Pupils are encouraged to explain and discuss along the way, firstly using informal expressions and then sometimes formal terms for musical ideas (Langer, 1955). Winters (2012) suggests that “as a young learner’s tool bag of musical ideas and understanding grows, the role of the teacher becomes that of a guide who allows room for the co-construction of learning to take place” (p.22). She identifies the need to refine composing pedagogy to “develop awareness of the language used by pupils and dialogic language skills with beginner teachers” (p.23). Similarly, Major (2008) explores how talk is used in appraising compositions in secondary school music lessons, and considers the role of the teacher. She suggests that the teacher helps with giving students vocabulary to enhance their shared understanding.

There is therefore a need for teachers to model and question using formal and informal music terminology. Philpott and Carden-Price (2000) argue that “the sounds and musical meanings come before written notations and technical analysis” (p.166), and that teachers should ensure that there has been significant exposure to a sound or musical concept before musical vocabulary is introduced. My Scheme of Work introduced Year 9 students to vocabulary relating to Logic Pro, film music and composing through a range of practical activities by the time they started composing for the project.

From my time-limited literature review, the pedagogy of creative collaboration in music classrooms seems unclear. Scotland-based academic Odena (2014) outlines a case study of a UK secondary school class and their teacher, which is helpful to consider. The teacher noted that there are many ways to song-write: working on the chords first, or the tune, the rhythm, the words or a combination. In Odena’s study, discussion of students’ assessment with the whole class provided them with an opportunity to develop constructive questioning skills and an understanding of the assessment criteria. I therefore discussed the assessment criteria with students prior to completing the project.

In a paper responding to student compositions and developing pedagogies, Reese (2003) and Webster (2012) summarise a few foundations to pedagogies for creative collaboration. These include: (i) respond first to the overall intent and expressive nature of the composition (as opposed

to technical aspects); (ii) be receptive of the readiness of students to receive feedback; (iii) encourage improvisational thinking; (iv) listen, perform and discuss music; (v) establish a climate for revision early in the process; and (vi) ask students about their compositional process. Odena (2014) adds further suggestions, including: (i) build up rich and stimulating resources; (ii) build up a positive emotional environment; (iii) include various levels of structure; and (iv) facilitate the students' development by questioning, prompting and modelling. For my project I built up a range of stimulating resources – including a film clip – for students to use, and employed questioning and modelling.

Examining 'Reasoned Argument'

Littleton and Mercer analyse extracts of student musician talk using Sociocultural Discourse Analysis (see below). They identify three different types of talk, noting that some are more beneficial for learning outcomes than others (Littleton & Mercer, 2013). I previously employed this conceptualisation of talk (Bourne Swinton Hunter, 2018), and will draw on the same definitions here.

Cumulative Talk, as defined by Littleton and Mercer (2013), features acceptance and agreement of others' contributions to sharing knowledge. However, engagement is in an uncritical way. While ideas are repeated and elaborated, they are not evaluated carefully. *Disputational Talk* features a lot of disagreement, with a competitive rather than cooperative atmosphere. Everyone makes their own decisions and there are few attempts to pool resources or offer constructive criticism. *Exploratory Talk* features everyone engaging critically but constructively with each other's ideas (which are all treated as worthy of consideration) and offering all the relevant information they have. Partners ask each other questions, answer them and try to reach agreement at each stage before progressing. Littleton and Mercer identify Exploratory Talk as most beneficial for learning outcomes.

The use of talk for learning and teaching music composition has also been researched by Major and Cottle, but their case study reports on younger students aged six to seven in a socially advantaged area of London (Major & Cottle, 2010). The study evaluates the significance of teacher questioning in encouraging quality dialogue. Findings highlight both the significance of the role of the teacher in scaffolding and encouraging children's thinking and learning through dialogue, and the importance of talk and evaluation as a part of reflective music composing activities. The authors

suggest that future research might consider not only the dialogue, but the ‘unspoken’ language of the music composed. The importance of this aspect had been previously demonstrated, as string quartet performers frequently used musical demonstration to make their points clear (Bourne Swinton Hunter, 2018).

In summary, I therefore need to consider the use of different types of talk and consider when and why students might play music as an alternative to talking. Furthermore, several authors in this literature review (Reese, 2003, Major & Cottle, 2010, Webster, 2012, Odena 2014) note that questioning is a key component of compositional pedagogy. Consequently, in my project I aim both to be reflexive in my own teaching practice and to consider my use of questioning.

Summary of Research Gaps

Several lessons are taken forward into my project from this literature review. As advised by Odena (2014), it will be important to consider my own teaching and take a reflexive approach. I will need to share success criteria with students, in addition to using appropriate questioning (Reese, 2003, Major & Cottle, 2010, Webster, 2012, Odena 2014), stimulating resources (Odena, 2014), setting ground rules (Littleton & Mercer, 2013) and introducing them to formal and informal musical terms (Winters, 2012). When conducting analysis, I will focus on student talk (Littleton & Mercer, 2013) but also need to consider musical demonstration (Major & Cottle, 2010).

Several gaps are identified in the literature:

1. There is limited literature on the pedagogy of creative collaboration in music classrooms.
2. There is a need to refine composing pedagogy to develop awareness of the language used by pupils and dialogic language skills (Winters, 2012).
3. There is a need for teachers to address co-operative learning techniques and provide guidance and practice in using them (Odam, 2000).
4. There is a gap in the literature considering the musical and non-verbal aspects of collaborative composition (Major & Cottle, 2010).

To address these gaps, it is necessary to refine them into research questions. I would like to focus particularly on filling the second ‘gap’ above.

Research Questions

As in my previous research (Bourne Swinton Hunter, 2018), my line of questioning is inspired by that of Perkins (2013). Based on the gaps in the literature (see above), two overarching research questions guide my research project.

What is the co-constructed nature of collaborative composing using music technology in Year 9 student groups?

How do different students participate in, construct and learn from collaboration with other group members through verbal and non-verbal means?

The first question focuses on the nature of the process, whereas the second question allows for differentiation by considering students' individual responses and actions. The answers will contribute to existing research by applying the interthinking conceptual lens to the context of composition in secondary schools.

School Context

The school in which I was to conduct my research was a mixed-gender secondary school from ages eleven to eighteen. The school had a three-year GCSE program and so the students in this study had elected to continue with Music as a GCSE subject choice. I designed the research to fit with their GCSE syllabus, which included the topic of film music.

Epistemology

This research adopts a relativist ontology, assuming reality to be socially constructed by students and teachers. One student's perception of the composition process may be very different to another. A social constructivist epistemological stance is therefore fit-for-purpose, emerging from a larger postmodern epistemology recognising that no one true reality exists (Nath, 2014).

Methods and Methodology

Having established the use of constructivist epistemology, this section justifies the use of qualitative methodology. It goes on to provide the rationale for using a case study approach as opposed to action research, as well as outlining methods of data collection.

Qualitative Inquiry

For research based on constructive epistemology, a qualitative approach is appropriate, since the qualitative researcher attempts to preserve “the multiple realities, the different and even contradictory views of what is happening” (Stake, 1995, p.12). Creswell (2009) notes that qualitative research requires a natural setting in which researcher and participant interact face-to-face. In this case, the research setting is my placement school, where I naturally interact with students and they interact with each other as a matter of course.

Creswell also notes that qualitative enquiry requires: multiple sources of data, inductive data analysis and emergent design, a focus on participants’ meanings, a guiding theoretical lens and a holistic account. I use two means of data collection (as detailed later), as well as analysing both inductively and deductively. I use the guiding conceptual lens of interthinking (see above) and, as a teacher, I aim to take a holistic account of my students’ realities.

Case Study – or Action Research?

This study employs a case study approach, aiming to investigate empirically and gain deep understanding of bounded phenomena (meeting the criteria of case study as defined by Smith, Alasuutari, Bickman, & Brannen, 2008). The bounded system in my project is that of a Year 9 class, with two pairs of students as units of analysis. Denscombe (2014) describes a case study as an inquiry into “something that already exists [...] not a situation that is artificially generated for the purposes of the research” (p.77). The class with which I am working existed prior to the project, and the topics of composition/music technology/film music are all covered under their exam syllabus, providing a pre-existing challenge.

It could be argued that there are elements of action research to this project. Since I am teaching this class myself, and not watching from the sidelines as an observer, I need “to focus on aspects of

[my] own practice as [I] engage in that practice,” which is a characteristic of action research (Denscombe, 2014, p.149). Furthermore, Elliott (1991) identifies the trialling of new curriculum content as a key feature of action research: “Curriculum development is not a process which occurs prior to teaching [but] through the reflective practice of teaching” (p.54). Although I am guided by the examination syllabus, I wrote my own scheme of work introducing the stimulus material of the James Bond film music themes. These themes included the Bond *leitmotif* (musical idea associated with a character, object or place, often used in film music).

However, while there may be elements of action research to this project, my research questions (as set out earlier) focus on developing awareness of the language used by pupils and dialogic language skills. Developments to my teaching practice are only a positive side-effect. For this reason, a case study is more fit-for-purpose. I have chosen to use case study to understand the learning of its participants intrinsically and instrumentally (Stake, 1995), and further illustrate the phenomenon of interthinking. It is simultaneously exploratory and descriptive (Yin, 1994).

Data Collection Methods

As demonstrated above, qualitative enquiry requires multiple methods. This study uses semi-structured interviews and observations of students’ dialogue.

Interviews

I initially hoped to use focus group discussion to understand how interthinking took place in each pair, using a group interaction as part of the method for understanding group interaction (Kitzinger, 1995). Unfortunately, in Pair 2 (see later) a student did not turn up at the requested time for a focus group interview. I therefore had to conduct interviews with this pair on an individual basis.

Interviews, whether in a focus group or on an individual basis, have the advantage of collecting data on things that would not otherwise be noticed during observation. However, one limitation of focus groups is that of dominant voices, where one or several group members dominate the discussion so that theirs is the only opinion clearly articulated (Smithson, 2000). Smithson identifies an approach to limiting dominant voices by aiming for focus groups to be homogenous in terms of sex, age, education and current occupational position. With the exception of sex, this was the case in my study - an inherent by-product of researching in the Year 9 classroom setting.

Semi-structured interviews were employed to probe and expand the interviewee's responses (Rubin & Rubin, 2011). Berg (2007) suggests that researchers use a basic checklist to help cover all relevant topics, allowing for in-depth probing while ensuring that the interview remained within the following study parameters (see also Appendix 1):

- Personal experience of composing
- Personal experience of using music technology
- Compositional process for the task
- Roles within the pairing

In summary, the project uses interviews to ensure that important aspects that might not be observable are included in the data. A checklist was used to ensure relevant topics were covered.

Observations

Observation is defined as the systematic description of events, behaviours and artefacts in the social setting chosen for study (Marshall & Rossman, 1989). It typically takes place in participants' normal environment (Munck & Sobo, 1998), allowing the researchers to (i) determine who interacts with whom, (ii) grasp the nature of communication between participants, and (iii) check how much time is spent on various activities (Schmuck, 2006).

Observations in this project took place during lesson time, when students were composing with their partner. It was chosen to illustrate further the nature of 'interthinking' between students. Observations focus on participant dialogue, taking place in students' normal environment: the social setting of the classroom. The conversation data was transcribed and analysed using sociocultural discourse analysis (see Findings).

Research Design

This section outlines the decisions made on sampling of participants and observed period, in addition to ethical considerations.

Sampling of participants

I sampled a Year 9 class as their curriculum mandated an introduction to Logic Pro. This provided an excellent opportunity to investigate collaborative composition (since students were required to share Macs in pairs anyway due to a shortage of resources).

When sampling pairs to analyse, to limit dominant voices I chose pairs where both students were of a similar ability level, as well as the same age and education (inherent to their class situation). Students could choose their own pairings, since this was what normally happened in my placement school and, as mentioned previously, this study is intended as a case study rather than true action research.

In summary, I selected two pairs as units of analysis, focusing on groups where all students were at a similar level. These students were described as ‘high-ability’ by the regular class teacher. Pair 1 comprised two students whom I refer to as Joe and Alice. Pair 2 comprised two students whom I refer to as Harry and Freddie.

Sampling of observed period

As previously discussed, I chose to refine my research to focus on the first four of Fautley’s phases of composition (2005): (i) Initial confirmatory phase; (ii) Initial stage of music generation; (iii) Manipulation of musical material; and (iv) Refinement work. I therefore observed students during the first lesson of composing their James Bond underscore. Semi-structured interviews took place after the final lesson, when students had had the chance to reflect on both the process and the outcome.

Ethical considerations

During this research working with students, efforts were taken to protect students’ identity in accordance with British Educational Research Association (BERA) ethical guidelines (BERA, 2011). Participants gave informed consent and were informed of their right to withdraw from the project at any time.

Students participated on a voluntary basis and did not receive an incentive or payment for involvement in the project. Research impact on participants’ workloads was considered, with

observations taking place during regular lesson time and interviews at lunchtimes convenient to them.

Since audio recordings using a digital recorder were used to collect data for this project, I followed the advice of the school’s Data Protection Officer. I obtained verbal consent from the students and explained to them what I was going to do with the recordings. I also clarified that if a student did not give consent, I would not use their recording.

Anonymising qualitative research data can be challenging. Anonymity is a continuum (Scott, 2005), and researchers must balance protecting participants’ identities with maintaining data integrity. Saunders, Kitzinger, & Kitzinger (2015) also note the difficulty of guaranteeing complete anonymity, as anyone closely tied to the research setting will likely be able to recognise participants. They suggest choosing pseudonyms without revealing too much about participants’ ethnic and cultural background. I therefore used a random name generator to assign pseudonyms to my students.

Stages of Research

To answer my research questions, I designed a scheme of work to take place over eight lessons during 2019. Initially students learned how music is used in films, before being introduced to using Logic Pro and finally composing their own underscore to a James Bond trailer. This meant that they had developed a knowledge of relevant formal and informal musical terms prior to composing, through teacher modelling and demonstration of concepts through practical tasks.



Figure 1: Project Stages

Figure 1 outlines each project stage. After delivering four lessons of the scheme of work introducing the topics of film music and Logic Pro, two groups were selected to participate in the project. In Lesson 5 all groups started to compose. Each pair was initially observed from audio recordings and interviewed. This was followed by analysis to answer my research questions.

Analysis

This project used a hybrid analytical approach after fieldwork was complete. It incorporated sociocultural discourse analysis and thematic analysis, using both deductive and inductive processes at a latent level.

Thematic analysis

Inductive thematic analysis was prioritised within the scope of this project, in line with the description of qualitative studies (Creswell, 1998) and with a particular view to answering Research Question 2. Braun and Clarke (2006) note that “inductive analysis is a process of coding the data without trying to fit it into a pre-existing coding frame” (p.12), and this project follows the process they suggest. After transcribing interview material, I generated initial codes i.e. “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon” (Boyatzis, 1998, p.63). I then considered how different codes combined to create overarching themes, which were then defined and named.

Sociocultural discourse analysis

This project used the analytic method employed by Littleton and Mercer (2013, p.12) in their research on interthinking, known as sociocultural discourse analysis (SCDA). This was used with particular reference to Research Question 1. SCDA examines the content of language, rather than its organisational structure, and considers how it functions for the pursuit of joint intellectual activity. SCDA recognises three types of talk: disputational, cumulative and exploratory talk. These types of talk are not devised to be used as the basis for a coding scheme, but as a frame of reference. I have previous experience of using SCDA deductively.

In this project, I used SCDA qualitatively, i.e. I examined episodes of interaction between students when composing using Logic Pro, to understand how they invoke and create knowledge. After transcribing audio recordings of students composing, I then analysed deductively with a view to identifying types of conversation (as described above) that contributed toward learning outcomes, identifying conversation features such as direct elicitations, confirmations and reformulations.

Bias

Primary methods of acquiring data were through interviews and observation. Both methods can prove potential sources of bias, and this section addresses viable solutions.

Prior to this research I was already acquainted with individual students from teaching the Year 9 class a unit on samba. A rapport with participants can provide good quality data, as participants are more likely to cooperate in completing the research (Lavrakas, 2008). However, Hammersley and Atkinson (1986) identify potential bias arising from ‘over-rapport,’ where avenues of investigation in interview are closed due to the possibility of appearing antagonistic. Students might be reluctant to appear antagonistic due to the power imbalance between them and myself, a figure of authority. To minimise the chance of this affecting their answers, I informed students at the start of the interview that there were no ‘right or wrong’ answers and that I would not be grading them on their work.

Observation is a potential source of bias. My main concern was the Hawthorne or observer effect (Shipman, 1997, as quoted in McDonald, 2005), when a researcher unintentionally alters the very nature of the work they are trying to research. In particular, the observer has high salience during adolescence (Wolf, Bazargani, Kilford, Dumontheil, & Blakemore, 2015), which is pertinent since my students were in Year 9. Following the precedent set by Littleton and Mercer (2013), I therefore recorded students composing and have not analysed discussion from when I was present.

To ensure further validity and reliability, a range of design checks were put in place. The key terms of ‘co-construction’ and ‘interthinking’ were defined in relation to existing literature within the fields of music and education, and triangulation was employed between interviews and observations.

Findings

This section outlines the findings of thematic analysis of interview data and sociocultural discourse analysis of observation data.

Thematic Analysis

Themes emerging from the data include: the importance of informal learning, the different dynamics between the two pairings, and the use of the James Bond musical stimulus provided as a starting point for composition. The Zone of Proximal Development was also considered.

Informal learning: setting the scene

Students from both pairs described this collaboration composing activity as enjoyable. Alice said that ‘we worked well together and had fun doing it’ with relevance to this collaborative project, and Freddie said that ‘it is fun; I enjoy music.’ Harry explained that he found the project rewarding as ‘it helped me to understand how music technology works.’ Intriguingly, when asked about previous composing activity, students did not refer to school classes but their own informal learning – despite having composed in previous Key Stage 3 class lessons. Harry said that once a week ‘for fun I just sit at the piano and press random notes and see if they work’, and Alice described her prior composition activities as ‘mucking about’ at home. Joe and Freddie described a more structured approach, with Joe saying that he had been composing at home ‘writing it down and then editing it,’ and Freddie describing that he had ‘done some [composing] out of school mainly on the piano... I’ve written chord progressions that I like and melodies on top, jazz and Latin...’ Joe and Freddie had each had some prior experience using Logic Pro at home. Joe said that he had been experimenting with it about twice a week for the past six months, and Freddie said that ‘I’ve used it quite a few times at home. When I’m asleep, I have an idea and write it down.’ During classes, Freddie demonstrated an advanced awareness of Logic’s capabilities, noting that automation could change other musical aspects in addition to volume. In contrast, Alice said that she had had no experience with the program and Harry said he had done a bit in Year 8 classes. Each pair therefore had one student more experienced with Logic, and one less experienced person.

Different dynamics?

There was a different dynamic in each of the pairs. In individual interviews both members of Pair 2 described an imbalance in their contributions to the project. When describing how Pair 2 dealt with the challenge of creating original material, Harry went on to say that:

Freddie was inspired and came up with something else – we went with that epiphany. We were struggling to find an original part to put on it, and in between the space of first period on Monday to break he came up with something in second period and we just chucked that on.

(Interview with Harry)

Furthermore, Harry said that ‘I haven’t worked with people composing before - I thought it was quite tough to get my ideas across. Sometimes Freddie overshadows me.’ Freddie’s account corroborated: ‘I think I took over a little bit too much, I think I should step back next time.’ This was apparently not due to a mismatch of engagement, with Harry saying that ‘I think Freddie had a general idea of where it was going in the first place, but I threw ideas at it like let’s have that idea on the flute or the brass to see how it would work.’

However, Freddie demonstrated an awareness of how his lack of collaborative experience might have affected this dynamic, when asked what he would do differently next time.

[I would improve] how productive or effective we’ve been – it’s been quite a slow process compared to on my own. I work on my own normally; I’m not used to composing with other people. I’m used to playing what I hear and to channelling my ideas, but working together is using other people’s ideas.

(Interview with Freddie)

In contrast, Pair 1 seemed to view their contributions as being more equal, albeit in different capacities from lesson to lesson. Joe said that ‘Alice was more hands-on with the piano. I was editing and recording what she was doing - although last lesson, Alice was on the computer.’ The two students seemed to have had a similar overall vision, with Joe saying that ‘We both wanted to go for the same kind of atmosphere for each scene, and we knew what we wanted to do from the beginning really.’ They noted that specific skills were required to collaborate, with Alice saying that ‘there are a lot of ideas that you have to know how to organise’ and Joe noting that ‘you have to listen to what other people want to do.’ Ingram and Hathorn (2004) suggest that there is a difference between cooperation (‘divide-and-conquer’ in which an assignment is split into equal pieces) and collaboration (students discuss all parts of the assignment in conjunction with each other). Pair 2’s work seems to fall more in the latter category.

The two pairs’ formations happened differently, which perhaps accounts for the different dynamics. Pair 1 said that they’d chosen to work together as they’d been ‘friends since the beginning of Year 7’ and had worked together in a group before. In contrast, the explanation for Pair 2’s formation from both students was that they were both involved in an extra-curricular activity that would mean

they would miss a lesson, so it was more ‘practical’ and ‘convenient’ to work together [Harry]. Both Pair 2 students also said that they had not worked with each other before.

Compositional process

Both groups took similar initial steps to composition, focusing on use of the Bond leitmotif as well as referring to the success criteria. In Pair 2, Freddie explained that ‘we watched the clip first and then we just talked about which leitmotifs we could use and looked at the criteria.’ Harry agreed, saying that ‘I think first off we started using the leitmotifs to get us started, and we played around with different things until we found one that worked. We did the same for finding instruments, and then composed our original material.’ This ‘playing around’ perhaps demonstrates a preoccupation with playfulness rather than following a rigid process. This triangulates with Freddie’s account that ‘we didn’t have much time to prepare so we didn’t think about an approach.’

Pair 2 said that similarly, the first thing was to ‘watch the whole thing through’ [Alice] and then ‘choose the leitmotif’ [Joe]. Joe also referred to the success criteria, and furthermore described explicitly how Pair 2 met requirements, saying that they ‘considered instrumentation, tempo, using the leitmotif but not making it too obvious by changing the chords underneath.’ The apparent consideration of elements in a structured manner contrasts with Pair 1’s approach and triangulates with findings from sociocultural discourse analysis. Joe also used the success criteria to explain how they might have improved the piece further with more time: ‘using layering, making it a thicker texture, that would give variety... We could add a drumbeat too.’

Joe and Freddie both cited ‘time management’ as being a challenge during the project, which was understandable given the limited lessons available in which to compose (although both pairs came in to work on the project in their free time). Harry also noted the difficulty of creating original music, saying that ‘Being original was hard. We started with the leitmotif and then it was hard to pull away from [it].’

Zone of Proximal Development

I was interested to hear Pair 2’s response to my questioning about rewarding aspects of working together on the project. Alice said that she liked that ‘it’s quite a vague task – you do what you want to do with it.’ Joe added that ‘it’s not so broad that no one knows what to do.’ Alice then

summarised her enjoyment as saying that it was ‘nice to have some freedom.’ This meets Littleton and Mercer’s (2013) interpretation of the Zone of Proximal Development, which “represents an area of extended understanding into which a teacher can draw the thinking of a student through sensitive, ‘scaffolded’ instruction” (p.110), and supports Major and Cottle’s (2010) findings that the teacher has an important role to play in scaffolding. The project seemed to have been appropriately pitched for these students.

Sociocultural Discourse Analysis

This section presents the Sociocultural Discourse Analysis of episodes of musical and verbal interaction between students, noted during observation of the composing process through audio recording. It aims to understand how students invoke and create knowledge.

Pair 1: ‘Are we in G minor?’

During this lesson, Pair 1 discussed the use of harmony (musical chords), tempo (musical speed), silence and instrumentation (use of instruments) for their underscore. The cue sheet was not used much. The following extract focuses on the students’ discussion of harmony: namely, the choice of chords to play with the leitmotif and the timing of the chords.

Alice: Wait we can do that! Like this, wait [experiments].... No, it can’t be nice! Where are we? I’m confused.

Joe: Are we in G minor? [They experiment further]

Alice: No that annoys me... It doesn’t come in as it fades in.

Joe: No, it does because if it starts there it won’t play... [experiments]

Alice: Hm what have we done? [Plays]

Alice: I think it’s too quick [They experiment]

Joe: Play what you were playing... You changed something [They experiment with sustained chords]

Alice: That doesn’t work though does it! Cut that.

Joe: Was it C sharp minor? [They experiment]

Alice: Yeah that’s nice

Joe: Just play whatever, we’ll move it around.

Alice: That’s it.

Teacher: How’s it going? [coming in]

Alice: [Still focused on previous conversation] Yeah it goes in between that gap right there.

This extract demonstrates a huge amount of experimentation, demonstration and thinking aloud. Both Alice and Joe state unanswered questions that prompt experimentation: ‘Where are we [in the trailer]?’ and ‘Are we in G minor?’ After Joe experiments with the timing of one chord, Alice explains that she does not like it, but explains why: ‘It doesn’t come in as it fades in’. After some mutual confusion about the timings, Alice attempts to diagnose how to fix the issue with a qualifier, saying that ‘I think it’s too quick,’ which results in more experimentation. She continues with a strong assertion, saying that the change does not work. Joe reorientates to the past, saying that ‘Play what you were playing...you changed something.’ Both students use imperatives to each other, with Joe saying ‘play what you were playing’ and Alice saying ‘cut that.’ This is perhaps due to a sense of familiarity or to get the information across quickly, since one is on the keyboard and one is moving the mouse. The students are engaged in the conversation, barely responding to the teacher interruption and using technical vocabulary (e.g. ‘C sharp minor,’ ‘transpose it’), again to state what change they would like. Ingram and Hathorn (2004) identify a low incidence of interaction with the instructor as a characteristic of the most collaborative groups, which perhaps suggests that Pair 1 were wholly engaged in collaborating.

Pair 2: ‘I definitely think we should start with the leitmotif.’

In this lesson, Pair 2 discussed possible instrumentation, tempo, and use of the leitmotif, as shown in the extract below. However, Freddie seemed content to sit and play experimentally by himself, whereas Harry seemed more interested in asking questions and trying to stimulate discussion. The pair moved swiftly from point to point, unlike Pair 1 who seemed to stay longer on each musical aspect under discussion. Pair 2 also seemed to use more sardonic humour, making fun of each other.

[Unproductive talk about Spanish]

Harry: Right. Let’s see what this cue sheet has to offer [reads it out loud]. Man is driving a boat – what instrument can represent the boat?

Freddie No idea [sarcastic]

Harry: Shall we have it slower to build suspense?

Freddie Have it completely rubato, no time. [Freddie plays something]

Harry: Is that for the beginning? [Freddie ignores him and continues playing.] I definitely think we should start with the leitmotif. It’s iconic, isn’t it!

Freddie: [indistinguishable mumble about instrumentation]

Harry: One of these days we’re going to find an instrument that works better than that piano. The Steinway...

[Freddie continues to experiment]

Freddie I've no idea what I'm doing. Right let's not do this... So what happens here?

Harry: The same leitmotif... [sings it] I don't know. Or that one, but a lot slower. It's really slow, which represents the London buses! [he laughs at the joke]

Harry attempts to reorientate the discussion back on task after some discussion about Spanish homework and refers to the cue sheet to guide them. He asks a question to stimulate discussion, saying 'what instrument can represent the boat?' However, Freddie does not seem interested in discussing this aspect of composing. Harry then tries again, changing the topic to tempo and suggesting that they use a 'slower' tempo. He explains his reasoning, suggesting that it creates 'suspense'. However, Freddie makes the strong assertion that the music should in fact be completely *rubato* (using a changeable pulse to create a sense of strong emotion). This demonstrates good use of technical language, but Freddie does not explain why he thinks this or give a critique of Harry's suggestion, suggesting Disputational Talk. Instead, Freddie continues to experiment on the keyboard. Again, Harry tries to stimulate discussion by suggesting that 'I definitely think we should start with the leitmotif.' The slight qualifier of 'I think' perhaps seeks to invite an opinion from Freddie, and the use of the phrase is associated with children's increased use of Exploratory Talk (Littleton & Mercer, 2013). Freddie eventually seems to become conscious of the fact that they have not recorded anything into Logic yet. He seems to be thinking aloud, asking 'so what happens here?', and Harry repeats his suggestion of considering which leitmotif or theme to use at the start. He also uses humour by referring to slow London buses. Freddie again makes an assertion disagreeing with Harry, stating that he does not 'think' the piece should open with the leitmotif anyway, but this time provides an explanation – that they should wait until Bond is on screen.

Comparison of Pair 1 and 2

Both groups used strong assertions and did not always justify these assertions. The conversation of Pair 1 features more imperatives and demonstration, perhaps due to joint experimentation and 'thinking aloud'. In contrast, the conversation of Pair 1 does not use any imperatives, and the experimentation was done wholly by Freddie. During the observed lesson both groups used humour, but Pair 2 used it more frequently and often to make fun of each other's suggestions. Both groups used technical language to get their points across more effectively.

Conclusions and Implications

This section attempts to synthesise findings and connect to the literature. I discuss limitations arising from my chosen methods and methodology and consider implications.

The nature of collaborative composing

This section seeks to answer the research question: What is the co-constructed nature of collaborative composing using music technology in Year 9 student groups?

After listening to the group performances, both pairs had a similar amount of musical material and both met the success criteria. However, the process of co-construction differed between the pairs. For Pair 1, the composing process was characterised by joint experimentation and ‘thinking aloud,’ which was perhaps more indicative of Exploratory Talk (Littleton & Mercer, 2013). For Pair 2, the composing process was characterised by use of humour and swift transitions from point to point, and there were more elements of Disputational Talk. The act of composing in Pair 2 seemed to be dominated by one student. Both groups used strong assertions and technical vocabulary, linking back to the importance of ensuring students have the appropriate terminology discussed in the literature (Major, 2008).

In summary, the process of composing in both groups required experimentation, demonstration and use of technical vocabulary. The interactions in both groups were characterised by strong assertions and imperatives. However, Pair 1 followed a process that was more organised and step-by-step, whereas Pair 2 jumped from point to point in a less structured process. According to Pair 1, the chosen task allowed the students to enter a Zone of Proximal Development (see p.203 above). Pair 1 demonstrated more elements of Exploratory Talk, whereas Pair 2 had more elements of Disputational Talk.

Differentiating students

This section seeks to answer the question: How do different students participate in, construct and learn from collaboration with other group members through verbal and non-verbal means?

While both groups created a similar volume and quality of musical material, there was a disparity in whether students took equal roles in the partnership. I propose that this was not due to a lack of

engagement on the part of students, but to a combination of: (i) mismatched levels of experience using the technology required, (ii) students' individual preference for working alone or with others and (iii) the relationships between students in each pair.

Both pairs had a student that was more experienced with Logic through informal learning at home, and a student that had less experience (although there was potentially a greater disparity in Pair 2). However, in Pair 1 this manifested in the more experienced student Joe using the computer with his partner Alice on the MIDI keyboard, whereas in Pair 2 Freddie took a more dominant role on both the computer and the keyboard. This demonstrates the importance that informal learning can have on learning in the classroom context.

While relationships between all students were cordial, Pair 1 explicitly chose to work together due to their friendship, whereas Pair 2 chose to work together for practicality. Whilst it is hard to say whether this impacted on the quality of talk, it is possible that it had a beneficial effect. Previous research in a Scottish study (Macdonald, Miell, & Mitchell, 2002) demonstrates that when students work with a friend, the quality of their composition is rated higher than those who do not.

Finally, one of the students in Pair 2 (Freddie) explicitly stated an inclination toward composing by himself. Regardless of his relationship with his partner, it is possible that certain personality types create better quality work by themselves than with others (or vice versa).

Implications and Limitations

Since these results cannot be considered generalisable, implications for the wider field and my personal teaching practice are made tentatively. This section notes study recommendations, limitations, and topics for further research.

Recommendations

The findings indicate the possibility that some students might create better quality compositions when working with a friend. However, this may well depend on the personal preferences and experience levels of the student. I therefore take away the need to establish a better knowledge of students' preferences for working as individuals or in groups, as well as the extent of their informal learning. However, it is also important to advise students of the need to develop their skills in working both alone and collaboratively. During the interview, I reminded Freddie of his musical

aspirations for the future, and that he may well need to compose collaboratively if he is a member of a band. Freddie recognised the validity of this statement.

The findings also reinforce the importance of ensuring students know appropriate terminology. All students used specialised musical and technological vocabulary, including ‘looping,’ ‘pedal,’ ‘C sharp minor,’ ‘transpose’ and ‘leitmotif.’ This meant that they could access each other’s ideas and express their own ideas more efficiently. I therefore take away the need to model using keywords in conversation, as well as ensuring students fully understand key concepts through practical music experiences.

Limitations

Although issues of research validity were considered, the research still had limitations.

I had hoped to use focus group interviews with both pairs to provide more comparable data, but one Pair 2 student forgot to attend the interview. Due to time constraints and extra-curricular activities, it was not possible to re-arrange a focus group interview. Pair 2 interviews therefore were taken on an individual basis. Since Pair 1 were interviewed together as a focus group, the contrast in method may have negatively affected the validity of a comparison of interview data.

Furthermore, the work of both pairs was computer-based. The flow of students’ conversation was frequently interrupted by technical failures of the computers. Littleton and Mercer (2013) noted this during their own research, stating that technical failures by machines sometimes stopped children’s activity altogether, and this was the case for my project. This may have affected the validity of the data.

Further research

This project suggests that certain personality types may create better quality work by themselves than with others. Further research could establish the importance of personal preference for individual and group collaboration in composing and help to develop suitable interventions for a range of different individuals.

Concluding Thoughts

As stated in the introduction, my motivation for completing this project was pedagogic, intellectual and developmental. I take several lessons from this research.

First, if assigning groups for future composing tasks (as opposed to giving students free choice), I will consider the impact of existing friendships on collaborative dynamics and establish a better knowledge of students' preferences for working as individuals or in groups. To ensure that my gifted and talented students are appropriately stretched, it may sometimes be worth considering giving students individual composing tasks.

Second, this project has made me more reflexive about my interactions with students. I now aim to ensure that I give all my students access to the necessary technical vocabulary. I observe my own talk with students and aim to explain why I think something about their work. I also take away the need to consider the extent of students' informal learning, and how this might impact their understanding in the classroom.

Finally, I feel privileged to work with students who are so passionate about music, with one ill student Skyping into a lesson from home in order that she could contribute to her group composition. I look forward to seeing how their composing skills develop next term.

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Appendix 1

Interview Questions

Personal experience

- Please would you each confirm how much experience you have had in using Logic? Please would you each describe how much experience you have had in composing?

Compositional practice

- Can you talk me through the process of composing this project?
- What do you think you have done well?
- What do you think could have been better? Why?

Pairing

- How did you decide on this particular pairing to work on the project?
- What do you think you have learned while being in this pair?
- What have you found rewarding about working together on this project?
- What are some of the challenges that came up while working together on this project?
- Do you feel like you each brought similar strengths to the project, or have you taken on different roles?