Chapter 1
Introduction

This book is about the construction of gendered identities in the music technology classroom. It explores how gendered discourses around music composition and technology are constructed and how young composers position themselves within these discursive frameworks. Since 1987, music composition has become a key element of the National Curriculum (which sets national standards for what students should learn) for music in England and Wales, and increasingly music technology has become central to this activity in primary and secondary schools. The contemporary music classroom is not only becoming increasingly technologized but, as some would argue (Finney and Burnard, 2007), ‘revolutionized’ by the use of Information and Communication Technology (ICT) with ever greater investment in computers and compositional software.

Ostensibly, the benefits of this increased technologization might appear unequivocal but, as Pitts (2000) points out, the level of debate within music education has been minimal in comparison to its level of use. Much of the current literature in music education focuses on pedagogical issues, educational outcomes and the role of ICT in raising standards (Busen-Smith, 1999; Mills and Murray, 2000; Savage and Challis, 2001; Pitts and Kwami, 2002). This literature appears to assume that, with sufficient access to both the computer and the requisite knowledge of music software, all pupils will benefit from engaging with music technologies when composing and will wish to do so. This deterministic trend in the literature ignores the socially constructed nature of computers and computer use, which renders the current rhetoric lauding the ‘democratizing’ potential of computers somewhat inadequate and naive. While there have been a number of studies exploring the gendered implications of music technology in the classroom (Comber et al., 1993; Caputo, 1994; Colley et al., 1997; Pegley, 2000; Armstrong, 2008), paradoxically, at a time when music technology courses1 are proliferating in schools and universities, the paucity of current academic studies in the field is surprising given that music technology is less likely to attract girls but is said to be of positive benefit for male pupils (Comber et al., 1993; Colley et al., 1997; Green, 1997; Byrne and MacDonald, 2002).

This uncritical rhetoric is encapsulated in the assertion that ‘the most significant implications for the application of the software in the secondary classroom lie

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1 Boehm (2007) charts the landscape of music technology in British Universities, examining the pedagogic and institutional differences between the 351 degrees that currently come under the category ‘music technology’, and some of the tensions inherent in the interdisciplinary model that typifies how music technology degrees are taught.
in its inclusivity’ (Mellor, 2008: 469), a claim which fails to acknowledge the ways in which technologies become gendered, in their material use, their symbolic meanings and their ideological function despite the well-documented differential in girls’ and boys’ computer use within other educational settings (Kiesler et al., 1985; Bromley and Apple, 1998; Clegg, 2001; Stepulevage, 2001; Colley and Comber, 2003) whereby males are often viewed as more ‘expert’ users than their female counterparts and as a result have greater influence in shaping the culture of computer use within the classroom:

The dominant discourse in computing is shaped by social practices which have institutionalized the power of experts, mostly male, to define what counts as computing in education … these ideologies in turn shape the climate which women have to negotiate. (Clegg, 2001: 308)

Clegg’s observation is an important one and yet is largely overlooked in the recent push for increased use of technology as a key remediation strategy in subjects where boys are perceived to be underachieving (Warren, 2003). The apparent appeal of technology is linked to boys’ out-of-school interests in computer-based activities and is believed to encourage their greater educational participation and increase motivation (Betts, 2008), the aim being to raise standards while making learning fun, invoking what Renold and Allan (2006) call the discourse of ‘enjoyment’. Of concern here is how little attention is paid to how this technological focus will affect girls’ performance, a situation increasingly common when developing pedagogical strategies to improve boys’ performance (Younger and Warrington, 2008; Skelton and Francis, 2009).

Within the music classroom similar arguments have been employed in an effort to encourage more boys to take up school music (Savage, 2007), making it more attractive for those who come from a rock and pop background (Byrne and Macdonald, 2002), as girls are more likely than boys to possess traditional instrument skills. A further imperative emanates from the argument that recent ‘gender research in music education has been increasingly dominated by feminist theory’, and has resulted in girls’ musical experiences and needs being privileged over their male counterparts (Harrison, 2010: 40). Studies show that such a rationale is indeed having the desired effect: increased use of music technology is encouraging more boys to take up general music Advanced (A) level, in 2008 slightly more boys than girls took the General Certificate of Secondary Education

\(^{2}\) For an overview of some of the key debates around gender and educational achievement see Epstein et al (1998) and Francis and Skelton (2005). Archer and Francis (2007) examine the intersections between gender, class and ‘race’ in their discussion of educational achievement while Skelton and Francis (2009) offer a critical feminist reading of the discourse of boys’ underachievement.
Introduction

Recent statistics also show that there is a significant gender differential in the number of UK university undergraduates studying music, with women making up only 41.5 per cent of music undergraduates (Farrar, 2007). As the technological focus has been increasing since the late 1990s, what we could be witnessing is a shift from a traditionally ‘feminine’ subject to a subject that has increasingly masculine connotations.

Consequently, this technicist framing of music education (Mansfield, 2005) raises important issues about gender and inclusion that much of the current music education literature fails to address. There appears to be an assumption that music technologies are unencumbered with the ‘old baggage’ of gendered social relations, but it is important to remember that these technologies are used and developed within existing social spaces that are always already delineated along gender lines (Green, 1997) and which are likely to reproduce and reinforce existing gender hierarchies. As Faulkner (2001: 79) has pointed out, nearly two decades of government initiatives to get more girls and women into the traditionally male dominated areas of science and technology have been unsuccessful because there has been a failure ‘to critically examine the ways in which technology … gets gendered in the eyes of would-be technologists’. This book is therefore fuelled by the concern that, by failing to engage with the sociocultural contexts of technological use, we will continue to present an unproblematic picture of technology in the music classroom, one which fails to accurately reflect the social reproductive effects of the classroom vis-à-vis gender relations.

The gender–technology relationship

Williams asserts that ‘[A] technology is always, in a full sense, social’. The take-up and use of technologies are shaped by the gendered social relations of the world into which they enter and, as such, are bound up with issues of power, authority and forms of control, a relationship that it is ‘necessarily in complex and variable connection with other social relations and institutions’ (Williams, 1981: 227). Questions about who developed the technology, for what purposes, in whose interests and with what consequences draw our attention to the powerful social structures at play in technological spheres. While it would be unwise to imply that technologies are inherently masculine, I would suggest that both the continuing material and symbolic associations of technology with men and masculinity contribute to the perception of women as less able and less interested in all things technological. As Turkle (1984) notes, it is not that computers contain an inherent

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3 The General Certificate of Secondary Education (GCSE) examination is taken in the final year of compulsory schooling at the age of 16. The two year Advanced (A) level provides a standard entry qualification into undergraduate study at University.
Gender bias but it is the culture surrounding them which produces socialized expectations of male and female behaviours and attitudes towards computers. This argument frames the position I have taken throughout the book, which is concerned with interrogating the continuing articulation between masculinity and technology as one of the ways that gendered social relations come to be embedded in the social processes of technology. This framework defies the kind of simplistic treatments in which technology is presented as either a product of male interests or as a ‘neutral tool’ because it obliges us ‘to view gender as an integral part of the social shaping of technology’ (Faulkner, 2001: 90).

Although individuals employ different strategies for ‘doing’ gender, Francis (2000: 16) asserts there is one ‘notional’ masculinity and one ‘notional’ femininity constructed as oppositional, leading her to interpret ‘the various “kinds” of masculinity and femininity … as the various ways in which men/boys attempt to achieve masculinity and femininity. In other words there are different strategies for constructing oneself as masculine or feminine, rather than different types of masculinity or femininity.’ This focus on strategies reflects my own conceptualization of identity as I am interested in how practices seek to define and map the production of the gendered subject. As Walkerdine (1998: 165) points out, ‘practices create subjectivities … those practices read materiality in a particular way: they tell stories which are profoundly oppressive’. As gender relations are a process in which ‘masculinity and femininity are descriptions of categories that are continually constructed, negotiated and renegotiated’ (Ormrod, 1994: 36) this allows us to ‘investigate the mundane processes by which these categories are constituted’ (Ormrod, 1994: 37). Consequently, I am interested in the ways in which boys and girls construct themselves as masculine and feminine in the music classroom within the discursive frameworks available to them.

Examining these discursive frameworks helps uncover ‘that what we take to be the “truth” is not an eternal and unchangeable fact, but a construction brought about in the dialectical interplay between the historical processes of society’s reproduction and the individual’s formation of identity’ (Green, 1997: 4). Discourse ‘constructs, defines and produces objects of knowledge in an intelligible way’ (Barker, 2000: 56) that appears to ‘make sense’ but serves to exclude other definitions thereby limiting the interpretive possibilities open to those positioned within these discourses. Discourses shape how we understand and act within the world and comes to represent ‘truths’ for those who have the power to construct such definitions and for those who are oppressed by them. As Francis observes:

gender difference is socially produced and often limiting to both sexes. Moreover, this social construction of gender difference holds important consequences in terms of power, because in the dichotomous construction of gender, power is located in the male, and the female is subjugated … The main point about discourses is that they carry power in their ability to position things and people as negative or positive, powerless or powerful. (Francis, 2000: 19)
However, the concept of discourse is not a passive construct, and it is this active construction that holds the possibility for change ever mindful that these subject positions may not be voluntary because of the political and social structures through which dominant femininities and masculinities are produced (Laurie, 1999 cited in Reay, 2001). Accordingly, when looking at the construction of identity we must take into account that the active processes in the production of individual and collective identities always occur within socially given conditions which include structures of power and social relations (Epstein and Johnson, 1998). Francis’s observation that ‘it does not necessarily follow that, just because people can choose which discourses to draw on, they do so in any completely consistent or coherent way’ (2001: 75) is particularly relevant. It helps to focus our attention on who has the power to construct gendered discourses in the music technology classroom and how the performance of gender by both teachers and pupils is enacted in ways that either comply with or resist these powerful discourses.

**Gendering composition, gendering technology**

In the following I aim to illustrate the connections between women’s musical compositions and their contributions to technology, both of which have been denigrated and positioned in opposition to the contributions of their male counterparts. Teasing out these parallels begins to highlight the theoretical perspective I have adopted throughout this book drawing on the fields of gender and music, and feminist science and technology studies (STS) to aid in my discussion. Both music composition and technology have been historically and socially constructed along similar lines, with their focus on technical knowledge, expertise, rationality and mental logic, attributes which supposedly characterize men and masculinity. A prolific period of feminist writing about music in the late 1980s and 1990s drew attention to some critical issues regarding the subordination and marginalization of women’s music (LePage, 1980; Neuls-Bates, 1982; Bowers and Tick, 1987; Shepherd, 1987; McClary, 1991; Pendle, 1991; Citron, 1993; Solie, 1993; Cook and Tsou, 1994; Dunn and Jones, 1994; Jezic, 1994; Halstead, 1997). Presenting powerful arguments about how gender ideologies are constructed and maintained through musical practices, these texts act as a long awaited corrective to the hitherto unchallenged supremacy of hegemonic masculinity that underpins discourses about music. As Green (1997: 5) notes, although some of the dominant discourses on music may be accepted as ‘common sense’ by many, ‘others are subservient, or articulate alternative perspectives’. As discourses jostle and compete for dominance, there will always be the possibility for resistance, and this offers the potential for new discourses and new meanings to be produced that challenge existing discourses about gender and music.

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4 Dibben (2002) offers a succinct overview of the key issues surrounding gender and music.
Within Western thought, the dualisms that construct the oppositional male/female, mind/body, reason/emotion, culture/nature splits reproduce a gendered discourse that polarizes masculinity and femininity, and we construct musical experiences and meanings through this gendered lens. Green (1997) argues that there are two distinct aspects of musical meaning, the first of which lies within the organization and conventional interrelationships of the musical materials. These inherent musical meanings are part of the listener’s learnt understandings of how musical materials relate to each other. In addition, the listener also brings other experiences to bear on the music, such as their own cultural and social position or perception of the performer (such as appropriate mode of dress or their gender, for example). These delineated meanings operate dialectically with music’s inherent meanings and, whether consciously or not, our listening experiences are never devoid of these meanings. Green argues that when we see a woman performing or listen to the work of a female composer her femininity becomes part of the music’s delineations. However, whereas the female singer affirms her femininity through the perceived alliance of her sound with her body, devoid of the need to control or employ external forms of technology, the female composer challenges patriarchal notions of femininity. In order to create the technical object (music), the composer must have technical knowledge of instruments and harmony in order to create the musical work, as well as an understanding of both technology and compositional technique, leading Green to suggest that composition becomes a ‘metaphorical display of the mind’ (1997: 84). Therefore, ‘part of the musical delineation includes the notion of the mind behind the music, and part of the notion of mind is that it is masculine’ (1997: 88). The woman composer’s ‘metaphorical, delineated display of mind conflicts with her natural submission to her body’ (1997: 88). A similar point is made by Citron (1993), who also argues that the male appropriation of creativity relies on this ideology that links creativity to the mental, although this may appear contrary to how we perceive the arts as they are understood as dealing with emotions; emotions grounded in the natural body and thus ‘feminized’. As such, ‘feminine emotion’ must be supplanted by the ‘rational’ masculine mind; rational knowledge that transcends and subordinates ‘feminine’ emotions. Even though the male creative genius is allowed to take on these ‘feminized’ attributes, when applied to females these attributes are not accorded the same status (Battersby, 1989).

In similar ways, feminist STS has also highlighted the gendered discourse that underpins discussions about masculinity, science and technology, which Murray (1993) suggests is not surprising given masculinity’s attempt to define itself by its monopoly over the control of reason, logic and objectivity. He further argues that technology is the core domain of socially constructed masculinity and acts

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5 In her book, *Music, informal learning and the school: a new classroom pedagogy*, Green (2008) has replaced the term ‘inherent meaning’ with ‘inter-sonic meaning’. While theoretically the same, the latter apparently more clearly encapsulates the ways in which the sonic or musical properties of a piece of music are heard by the listener.
as a ‘boundary marker’; that is, if it is technological it must be masculine, and therefore plays an important role in constructing male identity. It has been argued that technology is never neutral but is always already actively imbued with power of one sort or another; an important consideration when we note that women are more traditionally users and consumers than designers or producers of technology (Berg, 1994). Thus, Game and Pringle (1984: 36) claim that men are able to ‘represent the power of the machine as theirs and experience themselves as having “technical” expertise … the machine symbolizes masculinity and enables them to live out fantasies about power and domination which in turn reproduce this connection’. They suggest that it is necessary for men to maintain the ‘mystification of machines’ in order to preserve not only male jobs but the symbolic association of men’s work with skill.

Traditionally, music, and particularly some realms of music performance, was viewed as a feminine domain, although composition is historically associated with masculinity. Consequently, with the introduction of technology, also traditionally perceived as a masculine domain, another layer of symbolic masculinity is added to an already gendered music classroom, where teachers perceive boys as having greater ‘natural’ ability for both technology (Comber et al., 1993; Caputo, 1994; Colley et al., 1997) and composition (Green, 1997). Gendered ideologies within Western art music continue to inform notions of what constitutes a composer, and this composer is invariably male. Consequently, just as technology and technological use are constructed around their symbolic associations with masculinity, so has composition maintained symbolic associations with masculinity through very similar processes. As such, the continued gendering of technology and composition presents a much more complicated picture of music technologies and their use in the classroom than is often acknowledged.

**Defining technology**

Definitions of ‘technology’ have shifted considerably over time and, as Street (1992) notes, defining a term depends on teasing out shared understandings of the way in which it is used. It is not my intention to provide an historical overview of its different meanings, but it is worth briefly setting out how the term is used throughout the book. Early conceptualizations of technology focused on hardware, a machine or tool developed to carry out a designated activity or achieve a particular purpose but contemporary understandings commonly employed in cultural studies and STS offer a broader definition. In addition to the concept of technology as a tool or artefact, it can also be viewed as a system requiring appropriate knowledge and skill but is also constituted in social processes affecting and reflecting types of social relations. This conceptualization includes cultural values and ideologies (Murphie and Potts, 2003) whereby technology is seen to depend ‘upon the way it

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6 For a brief overview of the historical shifts that have occurred around the definitions of technology see Street (1992) and Murphie and Potts (2003).
is integrated into the understanding individuals and groups have of themselves and the world they inhabit’ (Street, 1992: 12). As such, technology can be thought of as a ‘system’ or ‘network’ that involves people and organizations (Street, 1992), a system embedded in social relations created and enacted by people. This highlights the fundamental role of human agency: the piece of technological machinery does not work on its own; it may have been designed or programmed to carry out a particular task but that task has a human hand behind it. While much of the current literature refers to music information and communication technology (ICT), I would suggest this produces a tendency to only focus on the instrumental ‘tool-like’ aspects of technology. Unfortunately, this can result in ICT being problematically ‘considered merely as neutral tools for learning’ (Buckingham, 2007: viii) and yet this definition continues to be employed in educational policy documents where ICT is viewed as a tool for learning, reduced to a set of skills requiring appropriate knowledge and understanding. Consequently, the social nature of computer use is completely lost in this definition. By uncritically referring to educational technology as merely a tool (Bromley and Apple, 1998) we lose sight of the fact that not only are tools themselves never neutral, but technologies are systems which involve complex language structures and social structures (Hatfield, 2000). We surely cannot talk about educational technologies as mere ‘things’ devoid of any form of sociocultural context, because this fails to capture the complexity of the social ‘embeddedness’ of technology in which human choices are involved in producing the dynamics and direction of technological development (May, 2003). Ultimately, I hold on to Wajcman’s (2004: 34) notion that ‘technology is a socio-technical product, patterned by the conditions of its creation and use’. Therefore, throughout the book, I will adopt the term music technology rather than music ICT (and will refer to ICT only when other texts make explicit use of this term) as it better represents how the use of digital music technology (such as computers, minidisk players, and music notation software or sequencing packages) requires and produces knowledge, while also reflecting the cultures and values of the social context in which it is used.

**Introducing the research**

The findings presented in this book are based on an empirical study carried out in four secondary schools over a concentrated six-month period from January to June 2003. It explored the compositional experiences of pupils aged fifteen to eighteen, all of whom were studying for either GCSE or A level music, as music composition within this age group is normally carried out individually (rather than in groups) for examination purposes. The research is located within a qualitative paradigm in that it is concerned with observing forms of interaction and types of talk within the classroom, and understanding pupils’ expressed views on their compositional experiences.
It is important to highlight that the study examined the compositional process rather than the actual product. By exploring how the music is produced rather than what is produced allowed me to better understand how boys and girls work with music technology during the various stages of the process (from the initial musical idea through the developmental, exploratory stage). By observing them composing and interviewing them about their compositional strategies, I was able to incorporate their own perspectives, which are central to this book, into this account:

Studying the process focuses our attention on the creator’s perspective; his or her thoughts, acts and understanding of the activity become the basis of their description. In contrast, studying the product implies a shift in focus where the music is separated from its creator and is regarded as an independent object seen and analysed from the perspective of the observer … [F]ocusing upon the process instead of the completed product is to say that it is not the music itself that is the focus but the practice of musical creation. (Folkestad, 1998: 6)

Had I undertaken an analysis of the musical work it would have been necessary to develop an analytical framework that could take into account the fact that many of the pieces written by these young composers are often subject to teachers’ interventions. While teachers are expected to document their contribution in the selection of initial ideas (AQA, 2008), teachers can be significantly involved in this part of the process and may set the parameters of the work in terms of musical idea or style. They may also involve themselves in the development of pupils’ work to the point where the teacher’s idea has a tendency to overwhelm those of the pupils, as the following interview extract from an A level pupil in my study demonstrates:

_Carolyn:_ Um, I started with a very good idea for the song but then I hit a hard wall sort of thing. I hit a barrier and it’s quite hard for me to get over that and that was the point at which his [the teacher’s] influence on the piece came in because he was getting quite frustrated that I wasn’t getting on with this piece and I was finding it quite difficult getting on with the piece so he just went ‘Well, do this, do that, think about the instruments coming in there’ and giving me these ideas and I just went with them because I couldn’t think of anything else to do. Um, and I think that meant that it came out sort of with quite a lot of his ideas. (A Level girl, Crossways Independent)

My interest lies in understanding the gendered nature of teachers’ musical interventions in their pupils’ compositions because, as the research progressed, it became evident that these interventions were differently configured depending on whether the pupil was male or female (an issue explored further in Chapter 5). Ultimately, I am interested in the meanings adolescents attribute to the role
music technology plays in their compositional processes rather than developing a systematic framework for analysing the composition itself.

**Background and context of participating schools**

The study was carried out in four secondary schools: one was located in inner London, two in outer London boroughs and one in the south east of England. They were selected on the basis of the following criteria gleaned from reports from the Office for Standards in Education (Ofsted), which inspects and regulates educational provision in England, and the schools’ websites. The participating schools had to have access to and use music technology for composition teaching, and they had to be co-educational and offer both GCSE and A level music. Seven schools were initially identified as possibilities but, for the purposes of my study, it was also important that the participating schools represented a range of music technology provision and history rather than be schools with similar characteristics; the gendered make-up of the music department was also a consideration, as I wished to include one school with an all-male teaching staff and one with an all-female teaching staff. This resulted in four participating schools, hereafter referred to as Old Tech Grammar, New Tech Comprehensive, Crossways Independent and Arts College.

Below are brief vignettes of each school, which provide contextual information including the percentage of pupils taking formal instrumental lessons, the range of extracurricular music activities offered, levels of attainment at GCSE and the gender make-up of the music department. It should also be noted that, with the exception of Crossways Independent, the schools were predominantly white UK heritage and this is reflected in the music classes I observed. Furthermore, apart from Arts College, all heads of department were male. The school roll includes sixth formers (studying for their A levels) and numbers are rounded up to prevent ease of identification and ensure anonymity. Throughout the book pseudonyms are used for names of the schools, pupils and teachers who took part, matching cultural names where appropriate.

*Old Tech Grammar: school roll 1300*

This selective grammar school is situated in an outer London borough in an area characterized as well above average in terms of socioeconomic status. Eighty percent of pupils are of white heritage. The school consistently achieves significantly...
higher than average GCSE results.\footnote{The Government’s ‘floor target’ for 2011 is set at thirty per cent of pupils achieving at least 5 A*-C GCSEs including English and Mathematics in all secondary schools.} The music department consisted of two male teachers and one female teacher. Music technology provision and music resources were extremely high as the school had recently built a separate centre in which all music teaching took place. The main music room comprised sixteen electronic keyboards and headphones, and there was a small recording studio plus a modern dedicated music technology suite with twelve MIDI\footnote{MIDI stands for ‘Musical Instrument Digital Interface which ‘allows electronic instruments to communicate by using a standardised set of commands’ (Hugill, 2008: 84).} keyboards and computers, together with minidisk players and CD-writing facilities. In addition, there was a third teaching room with a piano and hi-fi, plus three practice rooms, one housing a drum-kit. Around 15 per cent of pupils received instrumental and singing tuition at school with additional tuition provided at the local borough music school. The numerous extracurricular music groups included an orchestra, madrigal group, jazz band and choir.

\textit{New Tech Comprehensive: school roll 1600}

This school is a non-selective comprehensive situated in the south east of England, with a large proportion of pupils coming from socially and economically advantaged homes. The pupils were predominantly of white heritage with a small number of pupils from other black and minority-ethnic backgrounds. It too has a higher than average pass rate at GCSE. The department consisted of two male teachers and one female teacher. There were two main teaching rooms. In the main room there were three music stations with MIDI keyboards and PCs, and there was a fourth MIDI keyboard and PC in a separate practice room next door (a computer–pupil ratio of 1:3). The second teaching room contained twelve electronic keyboards with headphones. There were also five practice rooms, one of which contained a drum kit. Some 9 per cent of the school population received formal instrumental tuition, and at A level 84 per cent of pupils had taken instrumental or singing exams. The school placed a strong emphasis on extracurricular music with a range of activities including a choir, orchestra, jazz band, guitar ensemble and woodwind ensemble. Over a third of pupils studying for GCSE and A level also played in orchestras and bands outside of school.

\textit{Crossways Independent: school roll 850}

This school is an academically selective independent school situated in inner London, with around 50 per cent of its intake coming from black and minority-ethnic backgrounds. Figures for the GCSE examinations indicate that it has far exceeded the government’s targets. The music department consisted of two male teachers. Numbers taking music in the school were exceptionally small. The
provision of a music technology room was a recent addition to the department, and consisted of three computers, two of which were connected to a keyboard (a computer–pupil ratio of 1:2). Music was very much a minority subject in this school, evidenced by the low numbers opting to take this subject at GCSE and A level. Around 20 per cent of pupils had formal instrumental and/or singing lessons and there were numerous extracurricular activities to which the large group of peripatetic teaching staff contributed, ranging from close harmony groups to rock bands.

Arts College: school roll 1200

This school is a non-selective comprehensive located in an outer London borough which had been awarded specialist schools status in the performing arts. Parents are characterized as ‘below average’ in terms of socioeconomic status, with only around 6 per cent of pupils from black and ethnic minority backgrounds. Although the school did not achieve as high a percentage of GCSEs as the other schools in the study, the pass rate was still some 15 per cent above government targets. The music department consisted of three female teachers. The dedicated music technology room contained a hi-fi system and sixteen workstations consisting of a MIDI keyboard connected to a computer (a computer–pupil ratio of 1:1) arranged around the outside of the room facing the wall, with a square of tables and chairs in the centre of the room for general teaching. In addition, there were three practice rooms and two music teaching rooms. Out of the whole school population, 13 per cent of pupils were taking formal instrumental or singing lessons, with more girls than boys taking formal exams. More than 50 per cent of the male pupils taking GCSE music played either drums or guitar. There was little extracurricular music provision.

The study

As the book is concerned with the sociocultural context in which composition takes place I adopted a multi-method approach combining classroom observation, pupil questionnaires, and individual teacher and pupil interviews. This meant I was able to consider the gendered interactions around technological use and expertise through firsthand experience of the classroom, which could then be followed up in more detail during the interviews. Observation notes enabled me to check inferences made from one data source against others, as what people say they do and what they actually do is not always identical. This is not to suggest that they deliberately set out to mislead the researcher, but often different data sources will offer contrasting perspectives on the same phenomenon (Heath et al., 2009). However, where possible discrepancies arise, adopting multiple methods helps make sense of such anomalies, which I have tried to capture in the presentation of the data and discussion.
While adhering to what Heath et al. (2009) call ‘ethical absolutes’ regarding confidentiality and anonymity, carrying out gender research raised the issue of what to tell pupils and teachers regarding the focus of the study. Addressing similar concerns faced by Francis (2000) in her study of gender and ethnicity in the secondary classroom, I was concerned that if I provided too much detail about the gendered aspect of my work, this knowledge might affect the participants’ interactions, making them feeling self-conscious and lead to possible monitoring of their behaviours in the classroom. During the introductory presentation given to each class involved in the study, I informed the pupils that I was interested in their compositional processes using music technology, and that I would like to talk to them about their likes and dislikes and confidence levels with regard to music technology and composition, what they felt they were particularly good at, their preference for particular types of music software, and the amount of time they spent using music technology at home and at school. I concluded by outlining what taking part would entail, how long I planned to visit the school and that interviews would take place outside of lesson time. However, I did not make explicit reference to gender, although I mentioned to the teachers that questions about gender would be a key element of the interviews. This required the use of ‘situated ethics’ (Heath et al., 2009: 22) where researchers have to make ethical judgements based on the particular situation in which they find themselves. Ultimately, I had to balance this ethical concern against the aims of the study, and I believe my decision was appropriate under the circumstances as the integrity of the data might have been jeopardized had a full explication of the research been volunteered. This was not an easy decision to make, as one of the central aims of feminist approaches to research is that of ‘empowerment’, a term used to describe ‘an enabling power to do something rather than a power over someone’ (Humm, 1995: 78). I concluded that the types of questions I asked during the interviews were not harmful in any way to the participants’ well-being, and this ultimately informed my decision to proceed on this basis. I provided numerous opportunities to ‘opt out’, and reminded participants at the start of their interview that they could withdraw at any time or ‘pass’ on any questions they did not wish to answer (although none took up this offer).

Often young people may feel compelled to make themselves understood in adult-centred terms (although this is not to imply that adult respondents do not also monitor and filter their responses accordingly) and, because of this requirement to make sense for adults, the interview may not necessarily be an empowering occasion for young people (Allred, 1998). Nevertheless, follow-up comments made by pupils to their teachers and sometimes by the pupils themselves included remarks such as ‘it was really good to be able to talk about my work properly’ or ‘I really felt I was being listened to’, which were heartening. Participants’ willingness to engage in conversation formally and informally and the thoughtful responses they offered when discussing their composing suggest that their participation in the study was largely a positive experience and that none experienced any harm owing to my decision.
Before providing a more detailed account of my methods, Table 1.1 gives information about the gender breakdown and number of pupils and teachers participating in the study.

Table 1.1 Gender and number of pupils and teachers in each class observed

<table>
<thead>
<tr>
<th>School</th>
<th>GCSE pupils</th>
<th>A level pupils</th>
<th>Teachers</th>
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<tbody>
<tr>
<td>Old Tech Grammar</td>
<td>11 (7 boys, 4 girls)</td>
<td>8 (5 boys, 3 girls)</td>
<td>3 (2 male, 1 female)</td>
</tr>
<tr>
<td>New Tech Comprehensive</td>
<td>21 (15 boys, 6 girls)</td>
<td>13 (3 boys, 10 girls)</td>
<td>3 (2 male, 1 female)</td>
</tr>
<tr>
<td>Crossways Independent</td>
<td>6 (4 boys, 2 girls)</td>
<td>4 (2 boys, 2 girls)</td>
<td>2 (2 male)</td>
</tr>
<tr>
<td>Arts College</td>
<td>14 (5 boys, 9 girls)</td>
<td>7 (2 boys, 5 girls)</td>
<td>3 (3 female)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>52 (31 boys, 21 girls)</td>
<td>32 (12 boys, 20 girls)</td>
<td>11 (6 male, 5 female)</td>
</tr>
</tbody>
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Methods

At the beginning of the project, questionnaires were administered to all the pupils in the GCSE and A level classes observed. In comparison to the problem of administering questionnaires when the researcher is absent, which is likely to minimize the number of completed returns, having pupils complete the questionnaires during my first visit (and any pupils not in attendance during the first visit were asked to complete it on a subsequent visit) resulted in 81 completed forms.10 The questionnaire was used to build up a picture of each school’s musical culture and elicited information about the pupil’s gender, age and level of study. It comprised four sections: sections A and B provided information regarding age, gender and course of study, the instruments they played and to what level, section C asked about their musical activities both at school and outside of school, and section D focused on music technology such as the types of software and hardware they use and how much time they spent using it. In addition, pupils were asked to nominate a ‘technological expert’: the person they felt was most competent at using music technology in their class. A final section asked pupils to indicate if they were happy to be interviewed (all but three agreed), which necessitated including their names on the form. However, as teachers were never given access to the completed forms, because they were administered and collected by me during lessons, this was not an issue with regards to pupil confidentiality. The questionnaire also aided in the purposive sampling of pupils, and, to ensure balance, selection was based on a pupil’s typicality or atypicality: for example,

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10 Three (from New Tech Comprehensive) were discounted as two of the respondents replicated each other’s answers verbatim, and one was defaced.
where a pupil appeared to be representative of the class (based on the music department’s profile) or seemed unusual for some reason (for example, a pupil who had been unanimously nominated as the ‘technological expert’).

The aim of the classroom observations was two-fold: firstly, they were used to develop an understanding of how and in what ways social interactions produce gendered classroom cultures around music technology, and secondly to observe the pupils composing. I undertook three lesson observations of one GCSE and one A level class in each school (six in each school, making twenty-four observations in total) each lasting from fifty minutes to one hour and forty minutes. Field notes were taken throughout each lesson unless I was in a situation where it seemed inappropriate to do so, such as sitting in a practice room observing a pupil composing; such close proximity would have made note-taking rather intrusive, but these were written up as soon as possible after the event, usually in the following break time or lunch hour.

Even when the researcher is not supposedly part of the interaction, knowledge of her presence may have a significant effect (Hammersley and Atkinson, 1983). Therefore, while carrying out the observations, I was aware that my presence might cause some sense of disruption to the setting. While recognizing that it is never possible to measure the extent to which my presence was impacting on the pupils and teachers, I would suggest that, by my attending lunch-time and after-school concerts and rehearsals, and often organizing my observations so that I could spend a half day or even whole day in the department, participants gradually got used to my presence, occasionally coming over to chat if I was milling around in the music room or technology suite during a lunch break. The extremely generous level of freedom afforded me during my visits also led to numerous spontaneous conversations with teachers; therefore, when content was appropriate to the study, this is noted.

Given the mobile nature of the music classroom, I also had to adopt a reflexive approach that acknowledged my part in classroom interactions when it occurred. The mobility of the music classroom often means that researchers have to make choices about exactly what to observe; this impacts on what the observer sees and the role the researcher is compelled to adopt in these different spaces. For example, at Arts College and Old Tech Grammar this was reasonably straightforward as pupils were all taught together in the music technology suite. However, the layout at New Tech Comprehensive and Crossways Independent meant pupils were scattered around the department in practice rooms, the main teaching room or where the computers were located. This was exacerbated at Crossways Independent where, due to the small numbers of students taking music, observing composing invariably meant sitting in a practice room with pupils working independently. Despite my aim to be a nonparticipant observer this role was virtually impossible to maintain. Consequently, as my role fluctuated from participant to nonparticipant observer according to the school and activity taking place, where relevant I make explicit reference to this in the ensuing discussion. During my introduction at each school, pupils invariably asked if I had taught music or, in one case, did I ‘know
anything about music?’ to both of which I replied in the affirmative. I was happy to provide this information as I believe it helped establish my credibility but, when observing a pupil composing, this also meant I was likely to be placed in the role of a substitute teacher, being asked to play additional parts on the piano when they were composing or to give advice on a point of harmony, for example. I only intervened when called upon to do so, but to refuse help in these situations was likely to have produced a difficult and possibility damaging relationship with the pupils who may have then perceived me as unfriendly and unhelpful. Having taught pupils of this age for some time I was well aware that trust and approachability are important elements in establishing good working relationships with young people, and I wanted them to feel comfortable around me as I would become a regular visitor in the school. I was also mindful that this might result in a different relationship with the pupils from that which would normally have been expected with other classroom visitors such as school inspectors or PGCE tutors observing trainees on teaching practice; in these situations the relationship between pupil and observer operates within accepted codes of behavior, such as using a formal mode of address (such as ‘Sir’ or ‘Miss’). Adopting formal modes of address are likely to exacerbate the power relations that exist between adults and young people in schools. I was keen to lessen this in my interactions with the pupils but, despite my best efforts, this was not always easy to achieve. Although I introduced myself by my first name to the pupils, teachers generally referred to me as ‘Miss’ while in the classroom, which meant that the pupils also referred to me in the same way, which accorded me the (unwanted) status of an adult ‘guest’ which could not be completely alleviated.

Finally, I carried out individual semi-structured interviews of about thirty minutes’ duration with two boys and two girls from each GCSE and A level class (eight from each school; thirty-two in total). There were six rather than eight teachers interviewed, as the same teacher taught GCSE and A level at Arts College and Crossways Independent; these interviews usually lasted around an hour. The purpose of the individual teachers’ interviews was to illuminate the department’s use and development of music technology, technology’s role in the compositional process, and their perceptions of gender in this context. All interviews were recorded and transcribed in full. The pupil interviews explored four main themes: confidence, learning about music technology and what they liked and disliked about technology; their perceptions of the teachers’ and other pupils’ level of technological expertise; generating and developing a musical idea (the compositional stimulus); and, finally, the role of technology in the compositional process. With a semi-structured format, respondents were free to elaborate on areas that they found of particular relevance or interest, and by asking open questions such as ‘can you describe how you went about composing one of your recent pieces’, I hoped to avoid the common problem of respondents providing researchers with what they would consider the ‘right answer’. In contrast to the findings of Francis (2000: 28) none of the participating pupils came across as ‘awkward’ or ‘monosyllabic’ (around a third of the interviews lasted longer than
the allocated thirty minutes, and I suspect my heightened presence around the department prior to the interviews taking place helped in this regard.

When interpreting young people’s accounts of their practices it is helpful to note Lemke’s (1995: 138) observation that ‘fabulous fictions’ construct childhood, and have been invented about ‘the effects of normal hormonal processes of maturation on their judgement’, and this was a construction of my young participants that I strived to counter. Throughout, I aimed to treat my young composers as ‘competent agents in their own lives’ (Holloway and Valentine, 2003: 16) by asking them to speak candidly to me about their compositional processes, the meanings they attach to this creative activity, and their feelings about confidence and skill levels in relation to composition and technology. I have adopted Alldred’s (1998: 15) approach to working with young people, which offers ‘a way of constructing children as active subjects, not objects, and of recognizing that they may have distinct perspectives on the world’ (Alldred, 1998: 150). In interpreting the data, while aiming at all times to provide as balanced an account as possible, I recognize that ‘there are no objective observations, only observations socially situated in the worlds of the observer and the observed’ (Denzin and Lincoln, 1998: 24). Therefore, while my observation notes record the actualities of the situation as far as possible, the thoughts and interpretations that came out of these observations form part of my analysis as they impose certain principles of selection and organization.

**Organization of the book**

The book is organized into eight chapters. Chapter 2 is concerned with technological theories as they relate to the fields of gender and music technology, while Chapters 3 to 7 report the empirical findings. In Chapter 8 I offer some concluding remarks. A discussion of the relevant literature is integrated into the body of this book, whereby I put forward an argument for an interdisciplinary approach which draws together perspectives from the fields of sociology of technology, music education and feminist musicology.

In Chapter 2, drawing on perspectives from STS, I critically examine how technological determinist thinking underpins current policy on educational technology. I then highlight the ways in which the tenets of determinism can be discerned in current discussions about technology in the music classroom, suggesting that, despite claims for technology’s democratizing potential, music technologies are not inclusive and the gendered discourses in operation in the music classroom go largely unobserved. I argue that taking a social constructivist approach to technology helps us to uncover the gendered dimensions of music technologies. Finally, drawing on feminist STS perspectives I critically look at the influence of Haraway’s (1990/1985) ‘cyborg’ metaphor in understanding the relationship between women and technology and what it might mean to be a ‘musical cyborg’.
Beginning my analysis of the empirical data, Chapter 3 explores the processes and practices that contribute to the gendered culture of the music technology classroom. It provides the context for understanding how institutional factors shape and are shaped by gender–technology relations. It aims to explore the nature of ‘technological talk’ and considers its impact in constructing gendered perceptions about boys’ and girls’ ways of learning about technology and technological confidence. I then offer a discussion of the processes that contribute to normative masculine expectations regarding how males control technology and technological information.

Chapter 4 examines in detail how the concept of technological expertise is constructed. I explore how the technological ‘expert’ is constructed and examine who is able to define what is and what counts as technological knowledge. I illustrate my arguments about the digital music classroom by highlighting the similarities found between the gendered social relations within the home and the workplace in order to show why males and females are positioned differently in relation to different technologies. This offers a much richer and more complex understanding of the gendering of technology, and provides the context in which to place my subsequent analysis. I argue that the dominant discourse of technological expertise and competence constructs a hegemonic technological masculinity which girls (and some boys) are unable and unwilling to adopt. I end this chapter with a discussion of how the gendering of music software is implicated in this process as it becomes positioned as a ‘masculine’ or ‘feminine’ technology.

Chapters 5 and 6 specifically focus on the composition process. Chapter 5 provides a discussion of the musical idea and the extent to which pupils are able to exercise autonomy in thinking up and developing their musical ideas. I examine how the gendered nature of teachers’ involvement or ‘interference’ related to gendered perceptions of ‘conformity’ and ‘nonconformity’ in this part of the process can have a devastating effect on pupils’ sense of ownership of their compositions. Chapter 6 looks at the extent to which pupils make use of technology for composition. I suggest that the computer itself can become a barrier to composition, with its focus on technological rather than musical mastery, and this has important implications for pupils’ compositional identities.

Chapter 7 looks at some of the problems pupils face in negotiating technological spaces when composing. I suggest that, although historically and culturally women’s compositional spaces have been confined to the private, domestic sphere, the reclamation of the private domain of the home may actually offer significant possibilities for young female composers to exercise greater agency in their approaches to writing music.

Finally, Chapter 8 summarizes the key themes and makes some suggestions for classroom practice.