The Dampened Curriculum? An Enquiry Into Teachers' Practices and the Role of Technology Within the Performing Arts Curriculum

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For Collette, who didn't get to write one of her own.

Abstract

This thesis explores the intersection of English secondary curriculum policy, teachers' practices and beliefs, and educational technology within the performing arts. It was motivated by the changes in curriculum policy in England, including the EBacc and Progress 8 measures, the renewed focus on the curriculum in the Ofsted guidance, and the subsequent impact on the Performing Arts in English Secondary Schools.

As such, it has two specific purposes. First, the thesis develops an in-depth understanding of how the curriculum entangles teachers' practices, beliefs and values within the Performing Arts. Second, the thesis examines the potential role of technology in facilitating teachers' enactment of the Performing Arts curriculum.

Fifteen performing arts teachers (11 music and four drama) were recruited for the first stage of the thesis. A critical realist methodology guided the analysis, which sought to understand teachers' practices and beliefs relating to the Performing Arts Secondary Curriculum within three domains of understanding: the empirical (teachers' experiences and observations), the real (the school-level practices that impact teachers' practices) and the actual (the wider policy environment). Exploring these three domains revealed that teachers' practices are impacted by school-level interpretations of wider educational policy, resulting in a 'dampened curriculum', where teachers are enacting practices that are not congruent with their disciplinary understandings of what teaching and learning should be. It also found that Performing Arts teachers' current uses of technology, while commonplace, are impacted by disciplinary challenges, with mobile technologies often being leveraged against school policy to compensate for specific limitations with space and place in performing arts classrooms.

The second stage of the thesis reports a longitudinal co-design process with the Head of Performing Arts in a school in the North East of England. Over 18 months, three different orchestration tools were designed and used in the classroom before being evaluated for their potential role in facilitating teachers' enactment of the curriculum as conceived by

the teacher. The findings show that orchestration with and of technology offers the potential to support teachers' enactment of complex socio-cultural pedagogies in the performing arts classroom, where they are congruent with their epistemic beliefs.

This thesis contributes to the current understanding of the impact of English curriculum policy on Performing Arts Teachers' practices, expounding the theory of the 'dampened curriculum'. It also extends the current conceptualisation of orchestration, suggesting that it offers a way of supporting the enactment of teachers' pedagogies within complex policy environments.

Published Works

At the time of submission, sections of the work in this thesis were published in peer-reviewed publications and conference papers.

Rebecca Nicholson, Tom Bartindale, Ahmed Kharrufa, David Kirk, and Caroline Walker-Gleaves. 2022. Participatory Design Goes to School: Co-Teaching as a Form of Co-Design for Educational Technology. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 150, 1–17. https://doi.org/10.1145/3491102.3517667

Rebecca Nicholson, David Kirk, and Caroline Walker-Gleaves 2021. Performing Arts Teachers' Practices within the context of schooling in a socio-economically disadvantaged area: the emergence of the concept of 'the dampened curriculum'. *At British Educational Research Association (BERA) Conference, 2021.*

Rebecca Nicholson, Ahmed Kharrufa, Colin Bone-Dodds and Tom Bartindale. 2021. Learning Analytics, Performing Arts, and Teachers' Epistemic Beliefs: A CaseStudy of a Co-design Process. In *Companion Proceedings of the 11th International Conference on Learning Analytics & Knowledge LAK21.*
https://www.solaresearch.org/wp-content/uploads/2021/04/LAK21_CompanionProceedings.pdf

Rebecca Nicholson, David Kirk, and Tom Bartindale. 2021. Tangible Lighting Proxies: Brokering the Transition from Classroom to Stage. In *Fifteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '21), February 14–17, 2021, Salzburg, Austria*. ACM, New York, NY, USA, 13 pages. https://doi.org/10.1145/3430524.3440659

The discussion of the dampened curriculum in Chapter 4 (particularly 4.3.3) and was published in Nicholson, Kirk and Walker-Gleaves 2021. The design and subsequent analysis of the use of a learning analytics system in Chapter 6 (specifically 6.4.2) was published in Nicholson et al 2021. The design of the tangible lighting proxies in Chapter 6

(specifically 6.2.3) was published in Nicholson, Kirk and Bartindale 2021, and the co-teaching methodology described in Chapter 3 and Chapter 6 is published in Nicholson et al 2022.

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On a personal note, the support of C4 over the last 3 years is often what kept me going and I owe so much thanks for the laughter and the sharing of experiences on days when the thesis felt never ending.

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List of Abbreviations

BERA	British Educational Research Association
BTEC	Business and Technology Education Council
CSCL	Computer Supported Collaborative Learning
CPD	Continued Professional Development
DAW	Digital Audio Workstations
EBacc	English Baccalaureate
EEF	Education Endowment Foundation
EIF	Education Inspection Framework
HCI	Human–Computer Interaction
ICALT	International Conference on Advanced Learning Technologies
ISM	Incorporated Society of Musicians
IT	Information Technology
KS	Key Stage
MMC	Model Music Curriculum
MTA	Music Teachers' Association
NPME2	National Plan for Music Education 2
Ofsted	Office for Standards in Education, Children's Services and Skills
PAR	Participatory Action Research
RCT	Randomised Controlled Trials
RDN	Research Diary Notes
SIA	School Improvement Adviser
SLT	Senior Leadership Teams
TAM	Technology Acceptance Model
TPACK	Technology Pedagogy And Content Knowledge
UK	United Kingdom
US	United States

Chapter 1. Introduction

1.1. Overview

This thesis explores and examines performing arts teachers' practices and beliefs about the current Performing Arts English Secondary Curriculum, how these are shaped by school-level interpretations of educational policy, and the potential role of technology in facilitating teachers' visions of purpose. In considering both teachers' practices and beliefs and the role of technology, it sits at the intersection of two disciplines: Education and Human–Computer Interaction (HCI). As such, it is influenced by and offers contributions to both fields. In Education, the focus and contribution are on pedagogy and curriculum studies, while HCI offers contributions to the educational technology field, particularly the design of orchestration technologies.

This chapter will clarify the three core areas of research drawn on throughout the thesis before moving to introduce the rationale and scope of the study, the motivation, a brief exposition on the research design, and finishing with an overview of the thesis structure.

1.2. Background

Three core conceptual areas are explored in this thesis: curriculum and pedagogy, performing arts education and educational technology. Although these areas are all distinct bodies of knowledge and research, they overlap and are drawn together in this thesis. Each of the three distinct conceptual areas is described (briefly) below, clarifying core concepts and arguments relevant to this thesis. Pedagogy as a concept is not discussed as a distinct area but runs as a thread throughout the thesis drawing all three conceptual areas together. It is apparent in discussions of the curriculum where it is woven into the considerations of how the curriculum is enacted; it forms key aspects of teachers' practices in performing arts education and is ever-present throughout considerations of the way educational technology is used and integrated into the classroom.
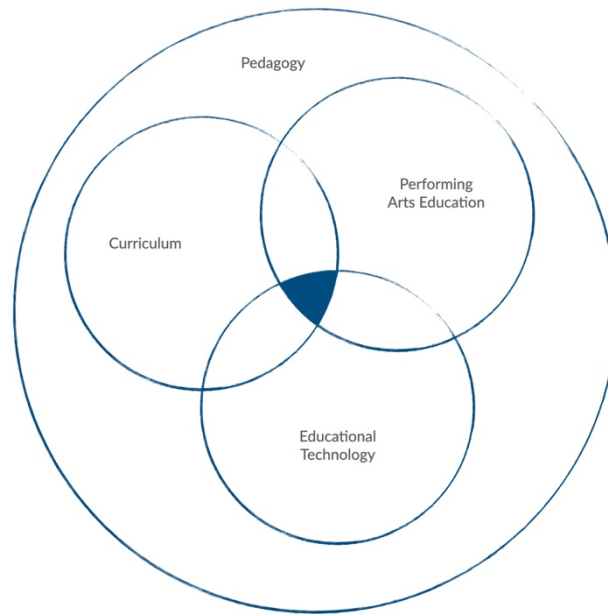
Figure 1: Visualisation of conceptual areas covered

1.2.1.   Curriculum

'Curriculum' is a contested term in educational literature, with many conceptualisations dependent on contexts (Wyse, Hayward and Pandya, 2015). The curriculum has come to mean many things—from a set of knowledge together with the way they are to be delivered (Matheson, 2014), to broader conceptualisations of the curriculum as 'the totality of experiences the pupil has as a result of the provision made' (Kelly, 2009). In English educational policy, the current working definition of the curriculum offered by the Office for Standards in Education, Children's Services and Skills (Ofsted, 2019, *Foreword, para 23*) is, 'The curriculum is the substance of what is taught. It is the specific plan of what learners need to know and should be able to do'. This definition of curriculum focuses on ensuring that the curriculum is structured to deliver specific content and knowledge. The new focus on curriculum within English education policy sees knowledge as the route to active engagement and citizenship in society (Young, 2013; Leora Cruddas *et al.*, 2017). Much of this conceptualisation is drawn from the idea of powerful knowledge first mooted by Young (2013), who argued that powerful knowledge is the knowledge that goes beyond personal experiences to provide the best understanding of the natural and social worlds.

Ultimately, this focus privileges a transmission model of education where the curriculum 'provides the essential knowledge they need to be educated citizens' (Ofsted, 2019). This Arnoldian view of the curriculum as something that aims to teach 'the best that has been

thought and said' (Arnold, 1869) has been criticised, particularly by those who have sought to put social justice issues at the centre of education. They suggest that it fails to encourage critical thought and the ability to challenge the status quo and instead simply reinforces current societal norms (Freire, 1970; McLaren, 2015). This transmission model then prompts questions about what content should be taught, what is considered 'essential knowledge', and perhaps more fundamentally, what counts as knowledge in the first place. Questions of knowledge, both what it is and what aspects should be taught, are not new debates within education. Early discussions centred around the dualism of *episteme* versus *techne*, seeing knowledge as two distinct types, scientific or skill, art or craft (Ameriks and Clarke, 2000). More recently, this has been conceptualised as procedural versus declarative or propositional knowledge; declarative knowledge being something that is known, and procedural knowledge being something acquired by doing that can then be applied to given problems (Dowling, 1993; Ten Berge and Van Hezewijk, 1999). This dualism has most recently been referred to as the skills versus knowledge debate, with many scholars opining that curricula should centre around either giving students fundamental knowledge or giving them key skills, often referred to as '21st Century Skills' (Trilling and Fadel, 2009; Dede, 2010; Voogt and Roblin, 2010).

Although the Ofsted (2019) definition suggests a transmission model, wider understandings of what is meant by 'curriculum' have been suggested, with Biesta, for example, referring to it as a 'composite concept', one that considers a variety of knowledge types as relevant and necessary for a well-rounded education (Biesta, 2010; Biesta *et al.*, 2019). This thesis takes a broader view of the curriculum than the current Ofsted definition and considers 'curriculum' as a term that defines a much more comprehensive and multilayered infrastructure that includes pedagogy and assessment as well as the associated social practices through which education is structured, enacted and evaluated (in line with the definition offered by Priestley, 2019).

1.2.2. *Performing Arts Education*

The performing arts are defined as 'types of art (such as music, dance, or drama) that are performed for an audience' (Gove, 1986). While this term traditionally encompasses three disciplines—music, drama and dance—in this thesis, performing arts refers only to music and drama, and the thesis limits itself to pedagogic practice in these disciplines accordingly. This narrowed definition is used here as this thesis considers the intersection of performing arts

and secondary education. Currently, music and drama are the most frequently offered subjects at the secondary level within performing arts education, with both traditionally offered in some form in most schools. This is partly by virtue of music being on the national curriculum for Key Stage 3 (KS3), while drama is specifically mentioned within the English (subject) national curriculum (Department for Education, 2014a). While dance is on the secondary curriculum in some schools and no less important as a subject, it is much less prevalent and beyond the scope of what is considered in this thesis. It has been suggested that bringing the performing arts under one umbrella is challenging as each subject has its own unique set of values, heritages and traditions (Finney, 2016). While this is true, and this thesis does not seek to ignore those histories and heritages when looking at their place and treatment within the English Secondary Curriculum, there are many parallels.

The performing arts curriculum, both in music and drama, has long been a place of contestation, particularly regarding the purposes of a performing arts education. Music, for example, has been viewed as anything from religious instruction to moral improvement and a civilising influence (Rainbow, 2006; Mark, 2013), and this wide variety of aims has meant the curriculum can vary significantly. However, Franks (2016) has suggested that despite these variations, there are three broad ways of learning within the performing arts: learning in, learning about and learning through. These three aspects encompass a broad range of purposes, from learning about the history of the performing arts as a subject to seeing the performing arts as a vehicle to learn about human emotions and experiences. Having such a range of potential purposes means that the performing arts have often struggled for legitimacy as a discrete subject. This is particularly applicable to drama, which does not appear in the national curriculum, with some describing it as having a 'half-life' embedded somewhere and semi-acknowledged, as part of English, or as something called 'expressive arts' or 'integrated arts' (O'Toole, Stinson and Moore, 2009). Drama is often given a place in the curriculum where the ideological purposes of 'self-development' are highlighted. For example, O'Toole, Stindon and Moore (2009) suggest three main current purposes of most drama curriculums: linguistic and communicative, expressive and developmental, or social and pedagogical. In most of these cases, the purpose is not to learn about drama but to see drama as a vehicle for students' self-development. In these cases, the interest in drama is often its use as a pedagogical tool rather than an interest in the curriculum design and content. As such, the field as a whole, both music and drama, has observed continued debate about

whether the questions that should be asked to further the curriculum conversation are about the curriculum content or the pedagogical methods of delivering that content (Cox and Stevens, 2016). There have been many forms of debate about the curriculum that focuses on the pedagogical means alongside the content, such as Musical Futures (Green, 2001). Musical Futures calls for teachers to include popular music in the curriculum where the content is entangled in a method that uses popular music pedagogies. Content and pedagogy are often intrinsically linked in the performing arts, given the focus on wider skill development beyond solely delivering specific curriculum content. Despite a long history of contestation about its specific purpose, one thing that has been agreed on in the performing arts is that each individual art form can be further subdivided into three 'pillars' (O'Toole and O'Mara, 2009): making, presenting and responding. These three pillars have been conceptualised in music independently as performing, composing and listening (appraising) (Swanwick, 1999), and have come to stand at the centre of many performing arts curricula that aim for a balance of both skills and competencies.

1.2.3.   *Educational Technology*

This definition emphasises the instrumentality of technology (Heidegger, 1977, p. 288). That is, what makes something a technology is simply its status as a tool. Because of its breadth, one might infer that this definition suggests the impossibility of severing technology from culture. Indeed, one might argue that the existence of culture is predicated on the existence of technology. As Johnstone (1982) suggested, "There is a sense in which everything we do falls under the rubric of technology" (p. 38). This definition emphasises the instrumentality of technology (Heidegger, 1977, p. 288). That is, what makes something a technology is simply its status as a tool. Because of its breadth, one might infer that this definition suggests the impossibility of severing technology from culture. Indeed, one might argue that the existence of culture is predicated on the existence of technology. As Johnstone (1982) suggested, "There is a sense in which everything we do falls under the rubric of technology" (p. 38). The use of the term 'technology', similar to curriculum, has come to have several definitions and as a term is so broad that Johnstone Jr (1982) suggested, 'there is a sense in which everything we do falls under the rubric of technology' (p. 38). It has come to be defined as instrumentality, industrialisation and novelty (McOmber, 1999). As such, it requires a more specific delineation of its use within this thesis. In this thesis, the word 'technology' is used for brevity, but its use

specifically refers to digital technologies, where digital technologies are defined as those that generate, store or process data.

Educational technology as a specific field encompasses work in a wide range of disciplines and has gained a lot of interest in recent years, especially over the last 18 months, with many teachers and educators having to move teaching online through the pandemic. Much of the educational technology field takes a 'learning science' perspective on educational technology, defined by Selwyn (2010 p.67) as one that focuses on 'the perceived technological and psychological strengths and shortcomings of individual learners, their tutors, and educational institutions', but is far less concerned with 'the wider social contexts that make up education and society'. As such, traditionally, the educational technology literature takes the approach that technology offers many material benefits to teaching and learning and should be integrated into classrooms to improve teaching and learning. This has resulted in several frameworks for the adoption of technology within the classroom, such as the Technology Acceptance Model (TAM) (Davis, 1998) and Technology Pedagogy and Content Knowledge (TPACK) (Koehler and Mishra, 2014). Both these models are used regularly as frameworks to evaluate technology design based on how likely teachers are to adopt them into their ongoing practices. This approach, however, has been critiqued, with some calling for educational technology researchers to focus on supporting existing practices rather than seeking to embed technology that necessitates changes to pedagogies (Hamilton and Friesen, 2013). Alongside a lack of focus on supporting existing pedagogies, most studies have focused on STEM subjects (Lai and Bower, 2019), particularly considering ways of supporting teachers to move towards a constructivist or student-centred model of teaching and learning (Hamilton and Friesen, 2013). Focusing on embedding technologies that embody particular pedagogical practices has meant little literature on understanding and supporting teachers' existing pedagogies. The approach to educational technology in this thesis aligns with those researchers who see its potential benefits as a support for existing pedagogical practices.

Although performing arts as a context within the educational technology literature is not particularly visible in relation to pedagogic research, there have been extensive explorations of the use of technology *within* the performing arts classroom from scholars and practitioners working in the domain of performing arts education. However, this has been a focus in music education more than in drama, with Caroll and Cameron (2009 p.142) suggesting that 'if

drama education research had a fringe area, it might be technology'. Technology use has been explored more often in music, particularly in composition (Gall and Breeze, 2005). Such research demonstrates that technology use within the performing arts classroom is complex, with the use of performing arts technologies (such as lighting desks or digital audio workstations (DAWs)) often viewed as distinct from technologies that might be considered educational technologies in other disciplines such as virtual learning environments.

Unlike broader discussions of educational technology, technology use in the performing arts classroom has regularly centred around the existing pedagogical practices, often documenting where technology disrupts teachers' practices or clashes with their values. There are, however, concerns from performing arts teachers about the use of technology in the classroom, particularly regarding mediated versus live dualism. The possible uses of technology in the performing arts classroom have become contested as some suggest that teachers should ensure that the technology is only used when it suits the pedagogy of the classroom (Paynter, 1997). In contrast, others draw on arguments related to 'digital natives' (Prensky, 2001) and caution that excluding mediated forms of performance in the classroom excludes students born into a mediated world (Carroll, Anderson and Cameron, 2006).

Those who seek to integrate technology within the performing arts classroom have identified that its current uses fall into three categories (Wake, 2018):

- technology as supplement

- technology as structure

- technology as infrastructure.

This delineation, however, still comes with a value judgement on the way technology should be integrated into the classroom, with criticisms of technology when used only as a supplement. Understanding that this is a complex and multifaceted area with distinct pedagogical considerations, this thesis seeks to explore the possible roles of technology in the performing arts classroom to support teachers' existing pedagogies. In discussing technologies, it uses a broad definition, encompassing both discipline-specific technologies such as sound desks and lighting software, as well as other more traditional educational technologies that might support teachers' pedagogies.

1.3. Rationale for the Study

This thesis answers questions at the intersection of curriculum theory and policy, performing arts education and educational technology by exploring teachers' experiences of the performing arts curriculum and using digital technology to support their enactment of the curriculum. This section aims to make clear why these are the focus of this thesis.

1.3.1. *Why Curriculum?*

The curriculum shapes all aspects of school life, from what is explicitly taught to the implicit lessons on values and behaviour (Eisner, 1979) and ultimately the choices made about the curriculum are what define children's experiences of school. The curriculum has recently become a central focus of secondary school education in England with the introduction of this as a central focus of Ofsted inspections (Ofsted, 2019). This move to inspect the quality and effectiveness of the curriculum has seen the responsibility for creating a suitable curriculum being given back to schools, with many currently redrafting and reshaping their curriculum at a school and subject level. Although the recent Ofsted curriculum guidance sees responsibility for curriculum as something held at a school level, English secondary schools have seen a number of changes over the last decade that have all had an effect on the secondary curriculum. The introduction of the English Baccalaureate (EBacc) saw schools asked to ensure that students had access to a specific range of subjects, including Maths, English, Science, Technology, Humanities and Modern Foreign Languages (Department for Education, 2020). This, alongside Progress 8, the new accountability framework for secondary schools that also focuses on similar subjects, saw many schools redesign their curriculum offer to students to ensure they were able to remain competitive in league tables (Klenowski and Carter, 2016).

With new accountability measures based on the progress students make, the focus for many schools became how the curriculum could be designed and delivered to ensure this progress was maximised during their time at secondary school. This need to measure students' progress cemented an already existing rise in data-driven practices, with the prevalence of market-based educational policies, such as league tables and academisation (Ball, 1993). One of these practices was an increased emphasis on the use of metrics to measure educational effectiveness (Biesta, 2009, 2010). This relatively new research area places positivist methods and quantifiable data at the centre of understanding 'what works' to ensure schools are

effective (Scheerans, 2015). In turn, understanding what works has seen an emphasis on pedagogy, particularly with the renewed calls for research-informed education, fuelled partly by the rise in ResearchEd events (ResearchEd, 2021). Much of the research in many of these events is positivist, often employing cognitive science methodologies in an effort to move towards a mode of research similar to that employed in the medical sciences (Goldacre, 2013). The result of these changes is a feeling of teachers searching for elusive pedagogical strategies that work to ensure students make progress and meet their targets. There are vocal critics of this model, such as Biesta, who question the epistemological position held by those looking for what works and suggest that scholarship should not be considering effective interventions based on a cause-and-effect model (Biesta, 2007, 2010). Much of this is based on finding 'effective interventions' (Evans and Benefield, 2003) as a result of a causal mode of professional action (Burton and Chapman, 2004). To focus on cause-and-effect interventions and randomised controlled trials (RCTs) is to ignore the multifaceted nature of the curriculum and education and its many-layered purposes in the education of young people.

1.3.2.   Why Performing Arts?

Performing arts education has recently experienced a tumultuous time with a number high-profile politicians, from Nicky Morgan (Morgan, 2014) to Gavin Williamson (Swinford and Bennett, 2020), deriding its place and value as an educational subject. Many feel that the performing arts struggle to exist within the data-driven, outcome-based model of education that currently exists in England. In the redesign of GCSEs and A-Level qualifications in 2017, there was a move towards 'ensuring that arts subjects are more rigorous in line with other academic qualifications' (Morgan, 2014), the implication being that they were not academic subjects. This has left the performing arts struggling to find their place in the English Secondary Curriculum even though both music and drama are named in the national curriculum. As a result, the number of entries for performing arts subjects has dropped 38% since 2010, with a 10% drop in entries from 2017–18 (the year following the introduction of the Progress 8 measures) (Cultural Learning Alliance, 2021a). Their place in many secondary curricula has been reduced to extracurricular opportunities (O'Toole, 2009) or, more recently, to carousel models of delivery where their time on the curriculum is reduced significantly. This is despite calls from Ofsted for a 'broad and balanced curriculum' (Ofsted, 2019).

Many think this reduction of entries is a direct result of the Progress 8 and EBacc measures, as performing arts subjects are not included in these measures (Fautley and Daubney, 2019). Savage and Barnard (2019) suggest that the EBacc has 'skewed the school curriculum to such an extent that music is often marginalised at the expense of what some policymakers consider more "serious" or "academic" subjects' (p. 7). A recent BBC study saw many secondary schools had cut back performing arts provision (Jeffreys, 2018). This is in tandem with a reduction in staff time, with many music departments in schools only employing one staff member and often not on a full-time basis (Daubney and Mackrill, 2017).

Recently, as part of their commitment to a broad and balanced curriculum, the release of a Model Music Curriculum (MMC) by the Department for Education has aimed to 'ensure a universal provision of music education' (Department for Education, 2021a). This offered guidance regarding the curriculum time that should be allocated to music from KS1 to KS3 but stopped short of mandating this. Given the currency of this guidance, educationalists are yet to see the longer-term impact of its release. The research reported in this thesis was carried out before its release. Together with the MMC, Ofsted has released a research review on music education as part of their research review series (Ofsted, 2021a). This review offers an overview of research on various aspects, from pedagogy to assessment and curriculum scope. Although these are potentially a welcome sign of a renewed focus on music, other performing arts have not had similar treatment. Alongside these renewed calls for a focus on music at both primary and secondary school levels, the current government has cut funding for performing arts higher education courses by 50% (Cultural Learning Alliance, 2021b), suggesting they still struggle to be deemed relevant within the curriculum.

The gradual disappearance of the performing arts in the English secondary curriculum opens questions about how and where performing arts fit within a wider educational landscape focused on outcomes-based education, what purposes they serve within a broad and balanced curriculum and how they can form a part of a successful curriculum structure in secondary schools.

1.3.3. *Why Technology?*

Educational technologists point to the possibilities inherent in digital technology to support new forms of pedagogy, particularly constructivist and student-centred (Learning, 2002).

Many of the pedagogical practices of the performing arts include similar constructivist, student-centred values (Thomson *et al.*, 2012). Performing arts pedagogies are complex in the ways that they are enacted and assessed (Fautley and Colwell, 2012), and digital technology offers the potential to support this teaching. One branch of technology research, specifically classroom orchestration, has been shown to offer a way of supporting teachers to enact complex pedagogies in the classroom (Dillenbourg, 2013). Classroom orchestration research encompasses both the use of digital tools to support classroom orchestration as well as the orchestration of the use of digital technologies within the classroom environment (Song, 2021). As such, it offers the potential to support performing arts teachers' pedagogies in the classroom, where there is a similar split between educational and discipline-specific technologies. One way classroom orchestration specifically aims to support teachers' pedagogies is by making visible what is often invisible in complex pedagogies (Balaam, 2013). This offers the potential to help support performing arts teachers to enact performing arts pedagogies within a data-driven environment like current United Kingdom (UK) secondary schools.

Although not often considered a context for educational technology studies, performing arts teachers were one of the first adopters of technology in the classroom (Mills and Murray, 2020). This remains true today, with most UK performing arts classrooms having access to digital technology in one form or another, from keyboards to recording equipment, while some also have access to computer suites and recording studios. The reality is that with the proliferation of technologically-enhanced practices within music, the way music is created and consumed has fundamentally changed; however, classroom music has yet to mirror these advancements. Some technologies, such as notation software or keyboards, have been wholeheartedly embraced and form a central part of many teachers' pedagogies (Gall, 2017). Those technologies that have been embraced appear to support existing performing arts teachers' values and pedagogies. For example, innovations include keyboards supporting whole-class teaching and notation software designed to widen access to composition as a skill, allowing students to compose music they cannot play (Odam, 2000). There is a history of technological advancements becoming commonplace in the secondary music classroom, as well as their potential role in supporting complex pedagogies in other contexts, and so this thesis explores this further by considering the design of those technologies and their role in supporting performing arts teachers' values and aims in the classroom.

1.3.4.   Why Teachers?

This thesis focuses specifically on teachers, their practices and beliefs about the current secondary performing arts curriculum as well as their experiences of using technology in the classroom. This focus on teachers and their lived experiences is not often seen in the literature, either in performing arts education or in educational technology. Despite many calls to include teachers as stakeholders, educational technology research has rarely been conducted with a focus on teachers' experiences, instead tending to focus on measurements of students' learning in the evaluation of educational interventions (Pammer-Schindler *et al.*, 2020).

This thesis does not ask how technology can help students learn better but rather how it can help teachers navigate policy and enact the curriculum in ways that align with their values and aims. In this way, it centres teachers in the research, valuing and respecting their curriculum and pedagogical expertise. This focus on teachers ultimately aims to move away from seeing teachers as passive adopters of technology frameworks, like TAM and TPACK often do, and instead understand teachers' experiences when recognised as active contributors to and designers of educational technology.

Given the focus on the curriculum, it is equally necessary to focus on teachers as it is established in research that teachers' beliefs and values heavily influence their behaviour (Datnow and Castellano, 2000; Bernard, 2009) as well as their practices and curriculum choices (Fenstermacher, 1978; Cochran-Smith, 1991; Pajares, 1992; Eisner, 1996). This is especially true for performing arts teachers known to have strong personal and performer identities that have an effect on the design and enactment of the curriculum (McPhail, 2013). This effect becomes more obvious in the performing arts, given that many performing arts teachers are in single-person departments and often have responsibility for the curriculum much earlier in their careers than teachers in other subjects or larger departments (Daubney and Mackrill, 2017). This focus on teachers is key to understanding the complex interplay of their practices and beliefs, how these are impacted by the current educational policy landscape, and the potential role of technology in supporting pedagogies that are congruent with their values and aims. Spruce *et al.* have recently called for a focus on the 'lived experience of music teachers', suggesting that 'This focus on the "lived experiences" of music

education is where future research will turn. Seeking to tell the story of music education from the perspectives of those teaching music in primary schools, secondary schools and Music Education Hubs will help illuminate the disjunction between policy and practice that has decimated music education in many parts of England over recent years' (Spruce, Marie Stanley and Li, 2021, p. 481).

1.4. Motivation for the Study

This thesis was in part motivated by my experiences as a performing arts teacher and those of the teachers I worked with. My teaching career was heavily influenced by the interplay of policy and my practices. As a performing arts teacher, I struggled to reconcile my sense of identity and pedagogy in the classroom while remaining within school policies and practices. These experiences were echoed by many colleagues I met at both a school level and at wider local and national networking meetings. I have always been fascinated with technology, particularly its use in the arts beyond applications to education. In the classroom, I experimented widely with applications of technology both to support pedagogy and to support wider artistic practices. The intersection of my experiences of teaching and my interests in technology drove many of the motivations to explore this particular juncture of practice and theory.

1.5. Research Purposes and Questions

This thesis has two purposes:
1. To gain an in-depth understanding of how the curriculum entangles teachers' practices and beliefs in English Secondary Performing Arts classrooms.
2. To examine the potential role of technology in facilitating teachers' enactment of the English Secondary Performing Arts Curriculum.

To achieve these purposes, this thesis explores four research questions:
1. What are teachers' current practices and beliefs concerning the English Secondary Performing Arts Curriculum?
2. How do school-level interpretations of external policy shape the delivery of the English Secondary Performing Arts Curriculum?
3. How does technology shape the English Secondary Performing Arts Curriculum?

4. What is the potential role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum?

1.6. Brief Research Design

This thesis takes a critical realist approach to explore these questions, supporting both the interdisciplinary nature of this thesis as well as the multilayered nature of educational policy and practice. Critical realist research is commonly interdisciplinary, rejecting what Sayer (1999) calls 'disciplinary parochialism' and seeking to create understanding through synthesis rather than specialised understanding (Fleetwood and Ackroyd, 2004). It has often been suggested as a suitable methodology for exploring the complexities of curriculum change (Priestley, 2011) as it offers the opportunity to explain rather than predict social phenomena, identifying observable phenomena and seeking to understand the underlying social structures that led to that occurrence (Fleetwood, 2001). In this case, it allowed me to explore not only the lived experiences of the teachers in this study but also wider curriculum policy and its impact on teachers' practices.

The methods used throughout this thesis are explicitly 'big Q qualitative' (Kidder and Fine, 1987), a term used to define a specifically qualitative-led research approach that values partiality and generates detailed and complex accounts from a small number of participants (Braun and Clarke, 2013). Qualitative research, following this definition, is interested in the 'messiness of real life' and involves 'thinking qualitatively' (Braun and Clarke, 2013). It suits this thesis and the questions it asks as it is focused on understanding the complexities of educational policy, technology and teachers' practices.

1.7. Originality of Contribution

This thesis contributes to both the performing arts education and educational technology fields. It aims to develop an in-depth understanding of performing arts teachers' practices, their beliefs about the English Secondary Curriculum and the potential role of technology in supporting their enactment of the curriculum. The specific contributions of this study are threefold.

First, it offers an up-to-date understanding of performing arts teachers' practices and beliefs about the current secondary curriculum, reporting on the analysis of interviews with 16 experienced performing arts teachers.

Second, it offers a potential new causal mechanism, 'the Dampened Curriculum', as a tentative way to describe the effects of current UK educational policy on teachers' practices regarding the secondary performing arts curriculum.

Third, it offers specific insights into the experiences of a teacher who used three different classroom orchestration tools to support her delivery of the performing arts curriculum and offers considerations for the design of orchestration tools.

Thesis Structure
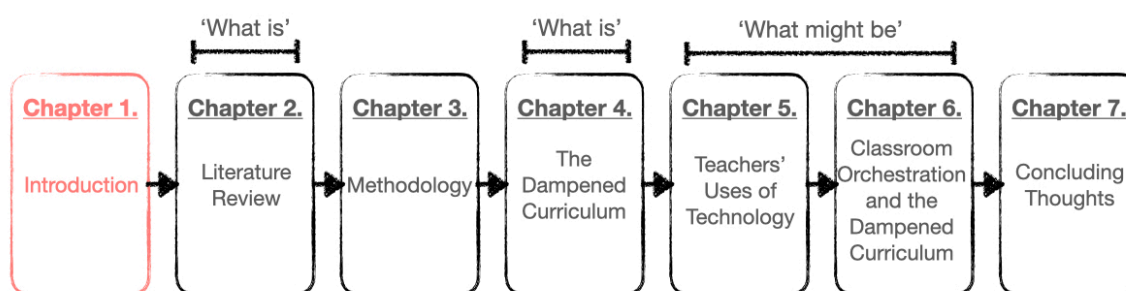
Figure 2: Thesis Structure (You are Here)

This thesis comprises seven chapters.

Chapter 1 describes the thesis motivation and outlines key aspects of the three core conceptual areas addressed throughout the thesis: curriculum, performing arts education and educational technology. The purpose of this chapter is to situate the thesis within the current context and explain the motivation behind the research described in this thesis.

Chapter 2 presents the reviewed literature in four sections. Firstly, it describes curriculum as a term, describes the current curriculum and explores the role of system dynamics in shaping this curriculum. Secondly, it considers curriculum in the performing arts before considering teachers' practices and beliefs both widely and in the performing arts. Finally, it considers educational technology and its uses within the secondary performing arts classroom. The purpose of this chapter is to offer a qualitative and critical literature review (Braun and Clarke, 2013), developing a clear rationale for the research carried out and reported in later chapters.

Chapter 3 describes the meta-theory that shaped the studies reported in this thesis before describing the thesis's methodology and methods in detail. The purpose of this chapter is to situate the research within ontological and epistemological research paradigms before detailing the resultant methodological choices and their suitability for the given research. Chapters 4–6 are shaped by critical realist considerations of 'what is' and 'what might be' (Sayer, 1999).

Chapter 4 explores teachers' current practices and beliefs about the secondary performing arts curriculum and how they are shaped by school-level policy. It first presents the findings from the interviews with teachers, seeking to understand 'what is' before offering the dampened curriculum as a causal mechanism that might explain the differences between teachers' intended and enacted practices. The purpose of this chapter is twofold: 1) to offer insights into current practices using reflexive thematic analysis (Braun and Clarke, 2012), and 2) offering one potential way of explaining the findings from those interviews, through critical analysis shaped by critical realist practices (Sayer, 2004).

Chapter 5 goes on to consider teachers' current uses of technology with a view to understanding what role technology might play in supporting teachers' practices. The purpose of this chapter is (similarly to Chapter 4) to offer insights into the current practices of teachers through the use of interviews before suggesting two potential uses of technology in the classroom based on the interview findings, to consider 'what might be' (Sayer, 1999).

Chapter 6 further considers 'what might be' (Sayer, 1999) by describing the design and evaluation of three classroom orchestration tools used in the secondary performing arts classroom. This chapter goes on to offer design considerations for classroom orchestration tools. The purpose of this chapter is to use the findings to offer design insights for the HCI educational technology field drawn from longitudinal and engaged research approaches (Barab *et al.*, 2004; Nicholson *et al.*, 2022).

Chapter 7 revisits the research questions outlined in this chapter to offer final thoughts in relation to the questions that drove the research. The purpose of this chapter is to recap the discussions in Chapters 4–6, highlighting the main contributions of this thesis.

Chapter 2.   Literature Review
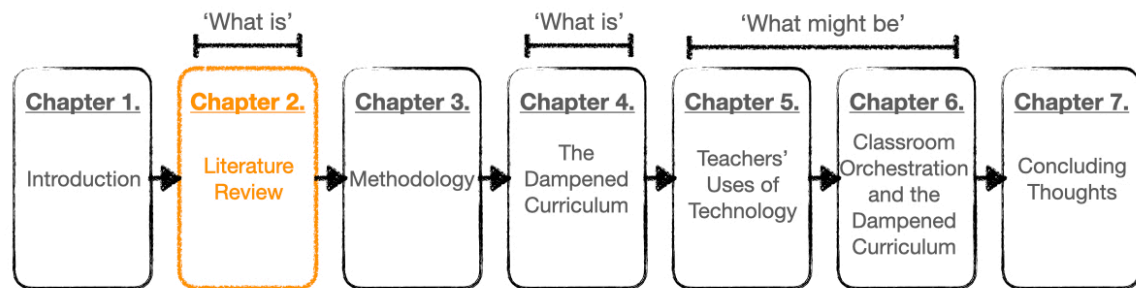
Figure 3: Thesis Structure (you are here)

Chapter Purpose: to offer a qualitative and critical literature review (Braun and Clarke, 2013), developing a clear rationale for the research carried out and reported in later chapters.

2.1. Chapter 2 Overview

This chapter describes the theoretical framework that guided the thesis, exploring performing arts teachers' practices and beliefs about the secondary performing arts curriculum and the potential role of technology in supporting them to enact their visions of purpose within the curriculum. This thesis considers research questions at the intersection of Education and HCI. As such, the theoretical framework is derived from three distinct but interrelated fields that offer an understanding of this research project: curriculum and pedagogy, performing arts education and educational technology.

To understand these areas, their relationships with each other and the research described in this thesis, this chapter is divided into four sections. The first considers current and past work on curriculum theory and structure, how it is conceptualised and what this thesis specifically means when using the word 'curriculum'. It then considers the current curriculum model in England, including the policies and practices that helped shape it. Finally, it considers the role of system dynamics and their potential impact on curriculum policy and its enactment in the classroom. The second section then offers an understanding of the performing arts curriculum specifically, briefly considering both the music and drama curriculum and their intended purposes within the wider secondary curriculum. This section concludes with considerations of the current policies and practices that have specifically shaped the performing arts curriculum. The third section considers teachers' beliefs, how they are derived and the extent to which they impact on their practices. This is first explored more broadly before considering

performing arts teachers and where they derive their practices and beliefs. It then finally considers how their practices might be entangled with system dynamics. The fourth section focuses on educational technology. First, it considers critical educational technology literature that explores the potential role of technology in the wider classroom. It then looks to understand the current literature on the use of technology in drama and music classrooms.

2.2. Curriculum Definition and Approach

Given the complexity of 'curriculum' as a definition and the breadth of work undertaken in defining 'curriculum' as a term, this section outlines the particular definition of the curriculum used in this thesis, going on to describe the key theoretical approaches to curriculum development and analysis that underpin the work that follows.

> *'It is not uncommon for two curriculum specialists to discuss their field at great length before discovering that each is using the term "curriculum" to mean something quite different'.* (Flinders, Noddings and Thornton, 1986, p. 33)

Curriculum as a concept has a long and complicated history. It is regularly conceived by scholars in different ways and often depends on their context (Wyse, Hayward and Pandya, 2015). As such, the term 'curriculum' has come to mean everything from a specific syllabus to educational ideals and almost everything in between.

Some discussions of curriculum in the literature see it as a guide to the instruction that students receive at school, and as such, it has been defined as *'a definition of what is to be learned'* (Ross, 2003) or *'a curriculum as a package of ideas, together with the manner in which it is delivered (its pedagogy)'* (Matheson, 2014, p. 20). These definitions initially appear rather straightforward; however, when considering the knowledge included in 'what is to be learned' suggested by Ross or what ideas to include in the 'package of ideas' suggested by Matheson, many scholars offer differing views, and the complexity of these definitions becomes apparent.

Other scholars have suggested that definitions of curriculum should include considerations of the wider social experiences, such as Goodson (1990, p. 299), who, in his call to consider the curriculum as social construction, commented that:

> *'One of the perennial problems in studying curriculum is that it is a multifaceted concept, constructed, negotiated and renegotiated at a variety of levels and in a variety of arenas'.*

Another example is Kelly (2009, p. 13), who defines curriculum as *'the totality of experiences the pupil has as a result of the provision made'*. Kelly here considers 'the totality of experiences' as a holistic understanding of the curriculum, one that encompasses the negotiated and decided upon list of subjects to be studied, the knowledge to be imparted and educational experiences offered to students, including those things that the students learn because of how learning is organised, planned and delivered.

A further definition of the curriculum, and one which deserves some attention, is that offered by Jenkins and Shipman (1976), not least because of the similarities is bears to the current Ofsted (2019) definition of curriculum. Jenkins and Shipman's definition of the curriculum is the first to suggest that the educational institution bears responsibility for the curriculum it defines and implements:

> *'A curriculum is the formation and implementation of an educational proposal to be taught and learned within the school or other institution and for which that institution accepts responsibility at three levels: its rationale, its actual implementation and its effects'.* (Jenkins and Shipman, 1976, p. 26)

Both they and Kelly (2019) agree that there should be an overall rationale for the curriculum, defining first the ideology for the educational program the curriculum seeks to structure before defining the bounds of the curriculum used.

This thesis takes a broad conceptualisation of the term curriculum, following both Kelly (2019) and Jenkins and Shipman (1976). This means considering both the social aspects of curriculum making and enactment, as well as considerations of the knowledge to be imparted, and in doing so, recognising the multifaceted nature of the curriculum.

As such, the definition of curriculum used in this thesis is that of Priestley (2019, para. 7) who defines curriculum as:

'The multilayered social practices, including infrastructure, pedagogy and assessment, through which education is structured, enacted and evaluated'.

Priestley's definition specifically states that this definition 'requires attention to':
- curriculum for what, by whom, and for whom
- the importance of context
- teachers as (professional) curriculum makers
- the role of system dynamics as barriers and drivers to curriculum-making
- the perspectives and experiences of traditionally marginalised groups.

In clarifying the scope and nature of this thesis, some aspects of this definition should be further unpacked. As such, the next section considers the definitions of 'multilayered social practice' and 'education' as two complex and multifaceted concepts before considering the aspects Priestley (2019) specifically states the definition 'requires attention to'.

'Multilayered social practices'

Priestley's (2019) definition states that a curriculum is a 'multilayered social practice', which has been discussed at length within the field of curriculum studies. Ideas about the levels at which the curriculum is created, shaped and implemented have been discussed in various ways. One pertinent example has been in applying ecological models to conceptualise the levels at which 'curriculum products' apply to curriculum development. These socio-ecological perspectives of education and the curriculum were first discussed by Bronfenbrenner (1979) to conceptualise the multifaceted constraints and complexities of relationships within education. Bronfenbrenner's ecological systems model focuses particularly on the wider influences that might impact student–teacher relationships.

Other ways ecological models have been used within the curriculum are attempts to conceptualise the various levels of interaction with the curriculum. For example, Thijs and van den Akker (2009) specifically considered the following levels of interaction with the curriculum:
- Supra—transnational ideas about education
- Macro—national-level policy intentions

- Meso—policy guidance (ES, LEA)
- Micro—school-level curricular practices
- Nano—classroom interactions.

While initially defined as levels to consider when creating curriculum products, this distinction is also useful if it is used to consider the possible impacts of various influences on the curriculum. Thijis and van den Akker (2009) discuss the interactions between the levels, focusing on relationships between teachers and students; they suggest that the levels of interaction are interrelated factors that affect curriculum design, with the higher level factors influencing the lower level ones.

This idea of multilayered conceptualisations has also been applied to how curriculum can be experienced and understood. The most used and discussed conceptualisation of this has been the idea of the curriculum as socially created and experienced in three 'layers'—the curriculum as proposed, as enacted and as received (Kelly, 2009)—in recognition that the curriculum as defined in documents by policy or by the teacher can differ from the one that is enacted in the classroom and from the one as received and understood by students.

Some have considered social practices in depth, with some scholars suggesting that things left out of, or excluded, from a curriculum are as worthwhile of studying as those that are purposely included. Eisner (1985), for example, considers the null curriculum to be as important as the stated curriculum, where the null curriculum is that which is not taught in the given curriculum model being studied. However, this idea of a null curriculum has been criticised by Flinders *et al.* (1986) as too broad a concept, as it seemingly refers to everything known in the world that is not included in the curriculum. Although perhaps a broad concept, the understanding of curriculum as a totality of experience and consideration of the null curriculum highlights the importance of reflecting on the choices made within a curriculum.

Within this, there are also those who discuss the social aspects of education, meaning things that are learned but are not explicitly specified in the written curriculum. This was coined *'the hidden curriculum'* by Jackson (1990) and refers to the ways students are implicitly taught norms and values. These are often not overtly stated in a curriculum document but can be

observed in aspects of the curriculum, such as behaviour policies. Dreeben (1968) defined the hidden curriculum as the tacit learning of identifiable social norms through coping with the day-to-day encounters and tasks of life at school. Meighan and Harber (2007) gave examples of the messages that they felt students gain through the hidden curriculum, including adults being more important than students and that passive acceptance of ideas is more desirable than criticism. Bowles and Gintis (2002) conversely suggest that rather than being hidden, enacting these rules and policies was specifically designed to ensure the messages students gained from the hidden curriculum were those that corresponded with the working world that they might encounter—something they defined as the 'correspondence principle'. This has since been criticised by both Apple (2000) and Giroux (2001)as they claim it presents children as uncritical adopters of the messages they receive in the hidden curriculum.

Defining 'multilayered social practice' is complex, with many possible definitions. In this thesis, considerations of the 'multilayered' aspect draw on the ecological model of interaction within the curriculum by Thijs and van den Akker (2009) as it allows for consideration of the multiple nested layers present in curriculum design. In considering the 'social practices', this thesis particularly considers Kelly's (2009) three-layered conceptualisation of the curriculum as proposed, enacted and experienced. This accords with Priestley's (2019) definition, which requires attention to how education is structured, enacted and evaluated. This thesis focuses on the first two of Kelly's (2009) three layers—the curriculum as proposed and enacted—given the particular focus on teachers throughout this work. That is not to say that the student experience is not important, but exploring how the curriculum is experienced is beyond the scope of this thesis.

The definition of curriculum used in this thesis relies on an understanding of education as a concept, having defined curriculum as how **education** is structured, enacted and evaluated. Like curriculum, 'education' is a commonly used term in everyday discourse but it is rarely clearly defined and certainly does not have an agreed-upon definition. One prominent definition is that although education is seemingly a unified concept, it is actually a 'composite concept' (Biesta, 2009). To conceptualise education, Biesta suggested that education should comprise three concepts: **qualification**, how education prepares you for doing something; **socialisation**, how individuals become a part of existing society; and what Biesta refers to as **subjectification**, how students can be independent of existing social orders (i.e., ways of being

in which students are not just socialised to suit current models of society). This definition of education highlights the role of multiple conceptualisations of knowledge as having a role within education.

As Priestly (2019) states, one of the aspects this definition of curriculum 'requires attention to' is understanding the purpose of a given curriculum and the way content is selected and organised. Within curriculum theory, Kelly (2009) has described several curriculum models as a way of understanding and delineating the various curricula structures, their purposes and their associated methods for content selection. Table 1 outlines the key purposes of content-based, objectives-based and process-based curricula models and their approaches to content selection.

Table 1: The Purpose and Content Selection Criteria of Curricula Models (Adapted from Kelly, 2009)

Characteristic	Content-based curriculum	Objectives-based curriculum	Process-based curriculum
Content/Content selection	Selection is based on belief in an objective value or truth of knowledge. Knowledge tends to be organised into separate units and subjects. Knowledge is hierarchically organised.	Selection is based on the need to deliver the specific skills and competencies necessary to achieve assessed objectives. Knowledge is considered secondary to achieving the objectives.	Selection is based on the ability to promote developmental processes. Knowledge is considered secondary to processes.
Purpose	To transmit true knowledge. To allow equality of access to true knowledge. To maintain the status quo.	To achieve assessed objectives. To train learners for roles in society.	To promote a series of developmental processes. To learn how to learn. To know how to know. To question knowledge and social structures.

As with the idea of curriculum products acting at differing levels in the curriculum development process, these models are a way of classifying approaches to curriculum development in various institutions. In this thesis, they are used less as a model for curriculum development and more as an analytical tool to consider how current UK curricula are

developed, considering some of the critiques of the model generally and whether they apply to the current UK curriculum model that is currently in adoption.

In considerations of the purpose of education particularly, it has been suggested that understanding the curriculum requires exploration of fundamental and equally multifaceted concepts such as education and knowledge (Murphy, Mufti and Kassem, 2008). Education as a concept was previously briefly discussed in this section and this thesis's adopted definition was clarified. Detailed descriptions and analyses of these concepts are outside the scope of this thesis; however, to further understand the discussions of curricula dealt with later in this thesis, the definition and considerations of knowledge that this thesis is guided by are discussed below. This is not an exhaustive review of what is a complex and longstanding area of research; instead, the following aims to highlight the debates in literature and practice most relevant to curriculum design and enactment. As such, it outlines the different epistemological conceptualisations of knowledge, specifically where they relate to current debates and discussions within curriculum scholarship and practice.

These multiple conceptualisations of knowledge are complex and often stem from considerations of the purposes of education. Although there are myriad considerations of the purposes of education, there is no space to consider the philosophy of education in depth. More recently, the pertinent debate within education and that which is most discussed within this thesis is the apparent dichotomy between traditional and progressive education (Thomson and Riddle, 2018). While this is a slightly reductionist oversimplification of what is a complex and deeply nuanced debate, for the sake of brevity, I will use this classification here as it reveals an important and relevant debate about the current views on education, the curriculum and, perhaps more importantly, illuminates the role of epistemological considerations.

Within discussions of education and its purposes, those that fall into the 'traditional' classification consider education as a route for students to reach certain outcomes to equip them to take their place in society. This view of education has its roots in post-war industrialisation, when the idea of education for all was first introduced in the *Education Act 1944* (Butler, 1944), and looked to ensure that all students were able to gain the skills to participate actively in an industrialised world. Against the traditional idea of education, there

are those categorised as progressives. Their view is that education's main purpose is emancipation (Kelly, 2009) and that it should encourage students to critically assess society and their place within it. What both have in common is the idea that education is a preparation for the next stage of life, however where they diverge is the understanding of what that preparation should look like and, more fundamentally, what role in society students are being prepared for.

If these ideologies are interrogated further, central to both arguments are ideological considerations of what constitutes knowledge. 'Traditional' educationalists tend to favour declarative knowledge (Young, 2009) and argue that there is a fixed core of knowledge that should be taught to students, whether as cultural initiation in the case of cultural capital (Bourdieu, 1973) or as discipline-based knowledge that later allows students to gain skills in given disciplines (Muller and Young, 2014). Conversely, 'progressive' educationalists tend to be grouped as such because although they hold a range of views, they commonly reject traditionalist views that the curriculum consists solely of knowledge to be transmitted (McPhail and Rata, 2016). They have offered two specific challenges to the idea of traditional education, and while the specific arguments often differ, they fall into two broad camps. One accepts that epistemological considerations guide the curriculum, and as such, they often place a large focus on the pedagogies within curricula models, arguing that knowledge is not knowledge when acquired under pressure with little impact on the life of the learner. Such theorists often cite the writings of Dewey (1986) and espouse ways for students to gain knowledge that rely on experience. The second critiques the epistemological considerations and tends to follow Plowden (1967), who advocated for a curriculum model 'which makes good use of the interest and curiosity of children'. Those referred to as 'progressive' often advocate for a degree of child input into the subjects and knowledge studied within the curriculum, such as Montessori (Montessori, Hunt and Valsiner, 2017) or Steiner methods (Childs, 1991).

In practice-led discussions of the curriculum, this dichotomy between progressive and traditional has been regularly defined as knowledge versus skills. Traditionalists have commonly led the knowledge side of the debate, advocating for knowledge to be taught in schools, with skills gained automatically once knowledge is learned (Hirsch, 2006; Muller and Young, 2014). Progressivists have more commonly advocated for the teaching of skills with

the specific curricula taught a secondary consideration, regularly advocating that skills teaching is more useful, because if schools teach skills, then students can learn anything (e.g., learn2learn (Leat and Lin, 2003) and P4C (Daniel, 2007)). Another way to consider the knowledge versus skills debate is to consider the types of knowledge considered important in schools (Priestley and Sinnema, 2014).

Although this is currently a debate in many discussions of curriculum design, the distinction and discussion about whether schools and teachers should be teaching knowledge or skills is not new. Over time, various terms have been used in considerations of the type of knowledge worth teaching. The debate in its early incarnation saw Aristotle write about a distinction between *epistêmê* and *technê* (Ameriks and Clarke, 2000)*.* While scholars traditionally translate *epistêmê* as 'scientific knowledge' and *technê* as 'skill', 'art', or 'craft', the two types of knowledge seemed already demarcated as different.

More recently, this demarcation has used the terms 'procedural knowledge' and 'declarative knowledge'. This is often a distinction made in cognitive psychology, where declarative knowledge is likened to a priori knowledge and is knowing that something is true, in lay terms, might be referred to as knowing facts. Conversely, procedural knowledge is acquired by doing and refers to knowledge that can be applied to a specific type of problem. Where these demarcations and discussions have arisen, there has often been a value judgement associated with these, with academics and practitioners expressing a preference for one or the other as more important or relevant. If we consider contemporary debates, those that consider 'knowledge' the key aspect of a curriculum define this as declarative knowledge (e.g., Young and Muller, 2013). Conversely, those who consider skills as the key aspect of a curriculum often consider procedural knowledge, such as those who advocate for the inclusion of twenty-first-century skills (e.g., Trilling and Fadel, 2009; Dede, 2010; Voogt and Roblin, 2010).

In the definition of the curriculum outlined above, Priestly (2019) states that attention should be given to the question of who the curriculum is being designed for. For both traditionalists and progressives, at the heart of many of their debates are considerations of power and social justice. In this way, they are often demarcated by whether they consider pedagogy or knowledge as a vehicle to achieve social justice or the curriculum. Those that consider pedagogies the way forward are often considered progressives and regularly draw on the

work of critical pedagogues such as Freire (1970) or McLaren (2015), who seek to ensure that pedagogies in the classroom encourage students to question current discourses and politics. They often look to encourage free speech, encouraging dialogue to reach 'conscientisation' or 'critical consciousness' (Freire, 1970). This focus on pedagogy means that the content of the curriculum is less of a focus for those interested in this mode of education, and instead, they seek to find pedagogies that encourage active learning and student involvement in both the content they are learning and the outcomes they achieve (Settles, 2009). These conceptualisations of knowledge are often drawn from social constructionist epistemologies of knowledge formation and the idea that knowledge is constructed through engaged social dialogue. There are some similarities here with the outcomes-based model of education (Kelly, 2009), as there are outcomes, which are behavioural in terms of students exhibiting certain behaviours, such as the ability to challenge existing power structures and endemic civic structures. Critics of this model suggest that skills cannot be learned without knowledge being known initially and that skills are a way of enacting knowledge in a practical way (Young and Muller, 2013).

Those that focus on the curriculum, particularly the knowledge content to be learned, often termed 'traditionalists', regularly draw on such powerful knowledge (Young and Muller, 2013) to ensure social justice. They advocate for students to be taught knowledge that falls outside their everyday experiences, which in the curriculum often means teaching set texts and ideas as they see access to this knowledge as the way students can participate fully in society. In this way, they take a view of knowledge construction drawn from realist views (Moore, 2007)—those who see knowledge as fixed and existing outside the experiences of people. Critics of this model point to this as a way of reinforcing the current social strata as the curriculum often seeks to minimise minority views in favour of the ruling social classes' knowledge, positioning the ruling classes' (middle or upper classes) social structures as right and the most valuable (McLaren, 2015).

This section has considered the complexity of the curriculum as a concept and the relevant debates that are revisited throughout this thesis. First, it outlined the differing definitions of the curriculum, including different views on the delimiting factors, whether it is centred on the outline of subjects and topics to be taught or whether it includes the wider hidden or social

aspects. It looked briefly at the purpose of curriculum models, describing a variety of purposes, with literature suggesting these purposes are often linked to ideological views on the relative importance of types of knowledge. It then considered the socio-ecological views of curriculum, suggesting that there are different ways of experiencing the curriculum, as proposed, enacted and experienced. This understanding of the different layers of curriculum development, both the external social factors and the reality of the difference in the proposed and enacted curriculum, are central to the subsequent explorations of the curriculum in this thesis. The section finally briefly outlined the different academic and contemporary practice-based debates centred around skills versus knowledge, suggesting at the heart of those debates are questions of social justice and power, with both sides advocating for what they feel is the best way for students to be prepared for participating in society.

2.2.1.   Current Curriculum in England

This section considers the current curriculum in England, as guided by Priestley's (2019) definition. As such, it particularly considers two aspects that 'require attention': 1) curriculum for what, by whom and for whom; and 2) the role of system dynamics as barriers and drivers to curriculum making. To do this, the current Ofsted Education Inspection Framework (EIF) is interrogated to consider Ofsted's views on the purpose of school curricula.

In considering what the curriculum is for, it is necessary to examine the purposes of the curriculum.   To do this, the current Ofsted guidance for curriculum is considered together with the current national curriculum for England.

Ofsted, the body responsible for inspecting educational institutions in England, recently announced an updated EIF (Ofsted, 2019) with a new focus on the curriculum. Their rationale was that they wanted to ensure that 'the focus of the inspection will be on the real substance of education: the curriculum' (Ofsted, 2019). This move to centralise the importance of the curriculum has brought to the fore certain discussions, such as what the curriculum is for, how it is created and for what purpose. The definition currently used by the UK Government is that *'the curriculum is the substance of what is taught. It is the specific plan of what learners need to know and should be able to do'* (Ofsted, 2019, foreword).

The Ofsted EIF provides further detail on the curriculum, referring to a 'working definition' of curriculum comprised of three parts:

- the framework for setting out the aims of a programme of education, including the knowledge and skills to be gained at each stage (*intent*)
- the translation of that framework over time into a structure and narrative within an institutional context (*implementation*)
- the evaluation of what knowledge and skills learners have gained against expectations (*impact/achievement*) (Ofsted, 2019).

Discussions in the new Ofsted EIF focus on 'the sequence of lessons' and seek to understand and evaluate where a particular observed lesson fits into that proposed sequence of lessons. This stated focus on the development of a curriculum with clearly delineated objectives and a sequential curriculum is reminiscent of scientific modes of curriculum design such as those advocated by Bobbitt (1924).

In examining the purposes as laid out in the current Ofsted guidance (Ofsted, 2019), it could be suggested that this is similar to a content-based model of curriculum (Kelly, 2009). As outlined in the previous section, a content-based model of education seeks to determine a body of knowledge to be learned by students and then sets out how to 'transmit' that knowledge to students (Kelly, 2009). This is similar to the aims outlined in the Ofsted guidance, which states the definition of curriculum is 'the substance of what is taught' and 'a specific plan'. The central consideration that drives decisions in the design of the curriculum within this model is commonly what content knowledge should be taught (Kelly, 2009).

As defined by Ofsted, the overall curriculum model could be considered a mixture of content and objective. All maintained schools in England are required to follow the national curriculum set out by the UK Government and last updated in September 2014 (Department for Education, 2014b). The aims of the national curriculum are to '*provide pupils with an introduction to the essential knowledge they need to be educated citizens*' and '*introduce pupils to the best that has been thought and said and help engender an appreciation of human creativity and achievement*' (Department for Education, 2014b, aim 3.1). There is a delineation in the national curriculum that there is 'the school curriculum' and 'the national curriculum', with the national curriculum only forming one part of the school curriculum. As defined by the Department for Education, the national curriculum '*provides an outline of core knowledge around which teachers can develop exciting and stimulating lessons to promote the*

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development of pupils' knowledge, understanding and skills as part of the wider school curriculum' (Department for Education, 2014b, aim 3.2). While there is room for a range of knowledge and skills within the wider school curriculum, if considered in relation to Kelly's classifications (see Table 1), the national curriculum taken in isolation could best be described as a content-based model, with a core set of knowledge to be taught to students, content that in their view should be based on the 'best that has been thought and said' (Department for Education, 2014b, aim 3.2).

An initial proponent of content-based models of curricula was E.D. Hirsch, known to have had a large influence on Michael Gove (the Secretary of State for Education at the time of the curriculum reforms) and the current model of curriculum (Gibb, 2014). The national curriculum statement of purpose includes the aim to provide students with '*the essential knowledge which they need to be educated citizens*' (Department for Education, 2014a, aim 3.1). Within this sentence are several considerations for anyone engaged in curriculum design. First, the essential knowledge needs to be chosen, and second, what it means to be an 'educated citizen' needs to be defined.

In part, due to the renewed focus by Ofsted on curriculum, an academic concept that has recently gathered traction as a way of guiding the knowledge to be chosen and what it means to be an educated citizen is powerful knowledge (Young and Muller, 2013). Recent reforms have seen the national curriculum move towards a knowledge-based curriculum, with powerful knowledge often cited as an inspiration for this move (Counsell, 2018). For example, the Chartered College of Teaching has published blogs and articles on powerful knowledge (e.g., Burns, 2018), with some policymakers suggesting powerful knowledge is a 'curriculum principle' (Carlgren, 2020). The focus on powerful knowledge has also been prevalent in practice-led organisations such as the ResearchEd community, a growing community of teachers interested in research-led or evidence-based education (ResearchED, 2021).

'Powerful knowledge' was defined by Young (2013), who aimed to encourage a focus on social justice and social inclusion. He felt that 'powerful knowledge' is powerful because it provides the best understanding of our natural and social worlds and helps us go beyond our individual experiences (Young, 2013, p. 196). He outlined several characteristics that make powerful knowledge powerful:

- provide reliable explanations and a sound basis for making judgements and generalisations about the world beyond the narrow limits of experiences
- be developed systematically by specialists within subject disciplines
- provide a language for engaging in political, moral and other kinds of debates
- allow us to think the unthinkable and the not yet thought.

Young's theory of powerful knowledge is heavily influenced by the ideas of cultural capital (Bourdieu, Passeron and Nice, 1977) and Bernstein's sacred knowledge (Bernstein, 2000), arguing that if students have access to knowledge deemed 'powerful', they can understand society and play an active role within it.

Although initially proposed in 2013, there are renewed calls to focus on 'powerful knowledge' as a central curriculum principle, particularly from those who espouse the creation of knowledge-rich curricula (Muller and Young, 2019). The idea of a knowledge-rich curriculum in England was largely driven by former Minister of State for School Standards Nick Gibb, who, in a 2021 speech, discussed children's 'cultural inheritance' and underlined the importance of a knowledge-rich curriculum (Gibb, 2021). This form of knowledge-rich curriculum is drawn from the work of Young and has its roots in powerful knowledge. Rata (2016) has outlined a model for knowledge-rich curricula that comprises four aspects: 1) 'Select and sequence the concepts', 2) 'Connect concepts to content', 3) 'Connecting 'knowledge-that' to 'knowledge-how', and 4) 'Evaluating 'knowledge-that' and 'knowledge-how''. Tom Sherrington (a consultant and popular commentator on educational policy) suggests there are four aspects of a knowledge-rich curriculum that should be considered in practice (Sherrington, 2018):

1. Knowledge provides a driving, underpinning philosophy
2. Knowledge content is specified in detail
3. Knowledge is taught to be remembered not merely encountered
4. Knowledge is sequenced and mapped deliberately and coherently.

Within the conceptualisation of a knowledge-rich curriculum, the main focus is to consider ways in which the curriculum can deliver powerful knowledge (Deng, 2022). Powerful knowledge as a term has been used both to mean a 'sociological concept' and a 'curriculum principle' (Young and Muller, 2013). Young and Muller clearly distinguish between the two, with the sociological position articulating how 'the sociality of knowledge underpins its

emergent 'objective' character (2013, p. 230). This sociological positioning of knowledge opposes many others that consider relativism or the power of the knower.

It has been argued that the current interpretations of powerful knowledge used in the curriculum do not truly reflect the original sociological underpinnings (Hordern, 2019). Hordern (2019) suggests that powerful knowledge has 'become conflated with essential knowledge that is expressed in terms of facts, concepts, principles and fundamental operations in curriculum documentation' (p. 32). Calgren (2020) suggests that 'Powerful knowledge as a knowledge-based curriculum principle is described in contrast to practice-based curriculum thinking' (p. 327). Whitty (2010) suggests that there is also a risk that powerful knowledge becomes conflated with particular forms of pedagogy, which Hordern (2019) argues can be used to justify what some would consider a 'traditional, almost authoritarian, approach to schooling' (p. 33). Hordern (2019) suggests that a reductionist interpretation of powerful knowledge could be used to support a 'top-down curriculum focused on core subjects that can support school effectiveness and improvement agendas, narrowly conceived' (p. 33). Where schools are seen as agents of policy implementation it has been argued that there may be little choice or debate about knowledge (Hordern and Tatto, 2018).

There have been a number of critiques of powerful knowledge in its original sociological form however. Zipin et al. (2015) argued that powerful knowledge focuses on disciplinary knowledge and prioritises the cognitive aspects of education, marginalising the ethical purposes, claiming that this results in a lack of social justice within curriculum approaches based on powerful knowledge. Others, such as White (2018), critique more fundamentally the ideas behind powerful knowledge and the conceptualisation of the particular type of knowledge. In his critique, White claims that the only two subjects that meet the criteria of powerful knowledge are maths and science, arguing that not all school subjects contain sui generis interrelated concepts. This critique has been echoed by others who feel that the place of experience has been sidelined and that for curricula to be considered truly powerful in terms of knowledge and social justice, they should 'combine both canonical knowledge and the vernacular culture of the learners' communities' (Wrigley, 2018, p. 4). The idea that theoretical knowledge is superior to practical knowledge is deeply rooted in Western science and philosophy (Molander, 2015).

Powerful knowledge has been likened to Hirst's work on forms of knowledge, particularly the focus on knowledge-as-an-end-in-itself thinking (Friesen, 2018), organising the curriculum with knowledge outcomes as the end goal. Although Hirst initially advocated a knowledge approach to curriculum, he later advocated for a practice-led way of understanding the content of school curricula (Hirst, 2013). It has been suggested that this conceptualisation of knowledge sees knowledge as a kind of substance, one that people can have more or less of (Carlgren, 2020). Cook and Brown (1999) have referred to this as an epistemology of knowledge as possession and argue that it tends to privilege explicit over tacit knowledge, separating skills from theoretical knowledge.

Deng (2018, p.345) argues that 'if education is centrally concerned with the cultivation of intellectual, moral, social and civic powers, then knowledge needs to be seen as an important resource for that cultivation rather than as something taught for its own end'. Alderson (2020) suggests four conditions if knowledge is associated with power: the known, the knowers, the social contexts and the practical application of knowledge. She argues that knowledge alone cannot be powerful as it depends, at least partly, on the agency of the knowers, how knowledge is applied and, consequently, how social change can be affected by those knowers. Rudolph et al. (2018) argue that powerful knowledge often overlooks the inherent biases in disciplinary knowledge, often reproducing rather than challenging it. This is echoed in critiques of Durkheimian functionalism (something Young draws on as an influence for powerful knowledge) as reinforcing inequality and injustice (Ainley, 2016).

What is clear from all discussions of powerful knowledge is that there remains an ongoing tension between theoretical and practical knowledge, even within the writings of Young and Muller. While Young and Muller advocate for knowledge to be prioritised, others, such as Hirst, have not remained so steadfast in their approaches. More recently, there have been attempts to reconcile theory and practice within discussions of knowledge, specifically in the curriculum context. For example, Carlgren (2020) suggests that powerful knowledge should be rethought of as powerful knowings and knowns and move away from cartesian dualistic thinking in separating the mind from the action or theory from practice. Although critical of the separation of cognitive and embodied forms of knowledge, Carlgren believes that

powerful knowledge should differ from everyday experiences and that practice-based powerful knowledge is specific to expert disciplinary worlds.

Importantly, the national curriculum is not the entirety of the curriculum students receive. The overall school curriculum is for individual schools to design and deliver, with the relatively wide guidance stating:

'Every state-funded school must offer a curriculum which is balanced and broadly based and which:

- *promotes the spiritual, moral, cultural, mental, and physical development of pupils at the school and of society,*
- *prepares pupils at the school for the opportunities, responsibilities, and experiences of later life.'*

(Department for Education, 2014b, section 2.1)

This statement appears much more product driven, with the curriculum aiming to develop students ready for later life. Curriculum models conceptualised as product are first developed based on the objectives they intend to meet (Kelly, 2009). These models are focused on education explicitly having a particular purpose or aim, and the resulting curriculum model is then designed to ensure students meet these aims. The national curriculum is one example of such a model, with explicit objectives as to the purpose of education. Kelly (2009) suggests that curriculum models designed this way often result in an educational system that aims to produce standardised results. In the case of the national curriculum, this is done with the aim of offering educational opportunities for all and the duty to ensure all students receive the same educational opportunities (Department for Education, 2014b).

This approach to curricula design is often referred to as the Tyler approach, drawing influence from Ralph Tyler (Tyler, 2013), who first looked to define key elements of the curriculum planning process. He said curricula needed purposes, content, procedures and evaluation. This method and its four-part structure are reminiscent of the ways curriculum is defined within the new Ofsted curriculum framework (though Ofsted has opted for a three-part structure in its EIF; Ofsted, 2019). The guidance in the EIF states that Ofsted will inspect based on the intent, implementation and impact, where the intent is the purpose of the curriculum,

implementation is the content and procedures through which this content is communicated to students, and impact is the evaluation of the curriculum.

In such a curriculum model, it is often common to define objectives in terms of specific behavioural outcomes (Kelly, 2009). Defining curriculum objectives as behavioural objectives was first posited by Popham (1971), who suggested that the curriculum should consider the behaviours it sought to promote. This approach drew heavily on Bloom's (1964) taxonomy of curriculum to consider ways in which they could scaffold students' progression towards the stated goals of the curriculum. The Popham approach to behavioural objectives can clearly be observed in the national curriculum.

This model of curriculum, with its focus on objectives as a way of creating a curriculum purpose, has been criticised, particularly by those concerned with the lack of teacher autonomy within such a model. Priestley *et al.* (2015) suggest that as the ends of the curriculum are already prescribed, usually by those at the government level, teachers lack independence from those bodies. It has also been argued more generally that an objectives-led model leaves little room for teacher autonomy, with some, such as Stenhouse (1970), expressing concerns that teachers will not be able to take advantage of 'unexpected instructional opportunities'. Where curricula are focused on objectives, Biesta (2009) suggests that this reduces students to numbers and often results in a lack of interest and understanding of students as individuals. He suggests this is because the focus when evaluating these curricula is assessing students against these objectives, and a successful curriculum is determined by measuring these outcomes. This focus on the measurement of outcomes can be seen in the current model of schooling in England (Biesta, 2009).

2.2.2.   The Role of System Dynamics

Priestley's (2019) definition of curriculum (which guides the conceptualisation of curriculum as discussed in this thesis) states that the definition 'requires attention to' the role of system dynamics as barriers and drivers to curriculum making. The new national curriculum and revised inspection criteria from Ofsted have seen a renewed focus on the place of both schools and teachers as curriculum makers. Ofsted placed the onus of curriculum design squarely back within the remit of schools and teachers, which has prompted renewed encouragement for schools to consider whole-school curriculum design (Wyse, 2020). As such, this section

considers the current system dynamics that may act as potential barriers and drivers as they pertain to teachers and schools when engaged in curriculum making.

The large shift within English school accountability towards deregulation with the rise of academies and free schools and the move away from local authority governance offers new potential for freedom within schools to develop and design curricula that suit their context and student demographic. The expert review panel for the new national curriculum stated that the curriculum was built on the principles of freedom, responsibility and fairness (James et al., 2011), and an explicit principle upon which the new curriculum was designed was that 'schools should be offered greater freedom over the curriculum' (James *et al.*, 2011, p. 6). The new Ofsted framework places responsibility for the design of the curriculum at a school level, and alongside these freedoms at the centre of the new curriculum, new school partnerships in the form of academy trusts are offered a large amount of freedom, including not having to adhere to the national curriculum (Department for Education, 2014b; Ofsted, 2018b).

It has been suggested that while there appears to be a large amount of freedom within the curriculum, several system dynamics are at play that mean this freedom is sometimes constrained. Ozga (2009, p. 1), for example, states that:

> *'Recent attempts to "rebalance" steering through "intelligent accountability" invoke network principles and self-regulation through self-evaluation, and thus give the appearance of deregulation, but the centre maintains control through its management and use of data, and local government remains peripheral'.*

It is claimed that evaluation in this context is used as a policy instrument, as a way to steer governance in a new era of decentralisation, and, in this way, fills the space between the state and the new consumer-citizen (Neave, 1988; Fägerlind and Strömqvist, 2004).

Data-driven Education

The use of data within educational systems to coordinate activities and improve educational quality is well established (Borer and Lawn, 2013; Souto-Otero and Beneito-Montagut, 2016). Mertala (2020) suggests that data-related practices are so embedded in schools that they have become a 'hidden curriculum'. It has been found that schools are encouraged to use this data to 'notice', 'interpret' and 'construct implications' (Coburn and Turner, 2011). Beer (2019) has

suggested this allows for a 'data gaze', supporting the creation of new forms of knowing and action in relation to a student or school.

However, many theoretical concerns have been raised; more recently, these have drawn on the 'sociology of numbers', a growing area of study emerging from science and technology studies and particularly concerned with the sociotechnical analysis of the use of numbers and algorithms (Lippert and Verran, 2018). Researchers in this area particularly seek to understand the epistemological and ontological implications of conceptualising the world in terms of numbers. This growing area sits alongside numerous explorations and commentaries from scholars within education seeking to understand the implications of data-driven policymaking. Considerations from those engaged in the sociology of numbers encourage those using data to 'think beyond the numbers' and approach data in relational terms rather than as a fixed entity (Lippert and Verran, 2018). Ruppert *et al.* (2017) suggest that data enacts that which it represents, urging consideration of what is being done with the data and what meanings are ascribed to the data.

These considerations echo those discussed within the wider sociology of education field. It has been suggested that data begins to assume a life of its own when it is only ever a proxy for something else, in the case of education, most often learning. Hanson (2002) calls these 'signifiers', pointing out that sometimes these signifiers end up with more importance than the actual thing they are intended to show, a classic example being money. In the case of education, school data is used as a signifier of learning but, as discussed above, have seemingly taken on a life of their own as the primary factor by which student achievement and progress, and therefore schools, are measured. In this way, it is argued that children are 'becoming their data' in a 'dataverse' where 'if you are not data, you do not exist' (Bowker, 2013). Pierlejewski (2019) says that this movement towards a data-driven world is not unique to education and is in fact an aspect of the posthuman condition. One way this has been discussed is the idea of data-doppelgangers as a way of describing the version of self that exists in the data collected about children and teachers. This was first discussed in an educational setting by Williamson (2019) and later expanded on by Pierlejewski (2019). The term 'data-doppelganger' refers to the version of a student created through data gathered as they participate in school life. Williamson and Pierlejewski both suggest that this doppelganger is

often the version of students that is interacted with most often when considering potential interventions or reflections on their schooling experiences.

In tracing the potential impact at a curriculum level, scholars such as Lawn (2013) have suggested that this increase in quantified data used as an evaluation tool means that policy is now influenced by quantifiable data generated in the classroom. As such, assessment data, particularly, has been highlighted as having risen to a new level of importance thanks to its use in a multitude of aspects within school life, including its role in the accountability and oversight of schools. Newton (2007), for example, lists 18 ways in which assessment data is currently used in schools, while others, such as Grek (2009), suggest that we are now seeing a sort of 'governing by numbers' where data is becoming how all schools are measured.

The proliferation of data-driven decision-making and data seeming to take on its own sense of importance has led to a system in which Ball (2003) suggests performativity is rife. Ball (2003) discusses the rise of performativity in schools, calling it '*a technology, a culture and a mode of regulation that employs judgements, comparisons and displays as means of incentive, control, attrition and change based on rewards and sanctions*' (p. 216). Ball's use of the term is used in the Lyotard (1984) sense, where there is no longer a judgement of worth or truth; rather, it is enough to look for 'proof' of output within the system. Munday (2018) posits that the language of performativity has become so pervasive within education that we see teachers discussing effectiveness and outputs, the same teachers who expressed distaste for a target-driven culture when questioned.

Driven by many of these considerations and concerns, recent empirical research has examined the role of data within schools in a variety of contexts and has found that while data has risen in importance with those in authority, its uses as imagined by managers or by authorities are often mismatched with the uses teachers imagine for this data. In the case of research conducted in Norway, the researchers found a discrepancy between the performance goal defined in the policy documents and the reality of daily life in schools (Prøitz, Novak and Mausethagen, 2022). Prøitz, Novak and Mausethagen (2022, p. 2022) claim this led to data use within mid-central authorities (the equivalent of local authorities in England) becoming 'more of a symbolic and ritualist practice than something valuable' for teachers and professionals within schools. Selwyn, Pangrazio and Cumbo (2022) similarly found that the

teachers' uses of data generated in the classroom differed from that imagined by the institution, with teachers often using the data to prompt conversations with students rather than seeing it as a fixed outcome. The study also found that the schools in their research created data versions of children; however, they rejected the idea that they were 'doppelgangers' as the schools primarily conceptualised data in terms of performance and attendance data (Selwyn, Pangrazio and Cumbo, 2022). They suggest that data representations created in this way offer only a partial picture of who students are, further creating the subjectification of students but not creating exact doppelgangers, as suggested by Williamson (2019).

Accountability in the English Education System

Priestley's (2019) definition of curriculum suggests that attention must be drawn to the question of who the curriculum is designed for. In a data-driven accountability system like the one discussed above, it is necessary to consider which stakeholders might hold schools and their curriculum designs accountable. While the obvious body within England is Ofsted, responsible for evaluating and inspecting educational providers (Ofsted, 2019), attention should also be given to other stakeholders, such as parents.

In many contexts, the role between local autonomy and wider governmental control has been mediated by the use of data with an increased focus on accountability, which Camphuijsen, Møller and Skedsmo (2021) suggest leads to many actors at the school level feeling pressure to change their behaviours. In the English education system, however, as outlined above, there is a move away from local authority governance and accountability, yet there are still those that describe increased accountability within the education system (Ball, 2003; Perryman *et al.*, 2011; Glatter, 2012; Klenowski and Carter, 2016). One of the stakeholders playing an increased role in the accountability of schools in England in recent years is parents (Bell and Stevenson, 2006). It has been argued more broadly that education in the UK has observed an increase in neoliberal policies, leading to market-based policies within education, such as league tables and academisation (Ball, 1993). Bell and Stevenson (2006) suggest this has brought with it an increased focus on parental choice, encouraging parents to play an active role in choosing the school their children attend, thus encouraging competition between schools with similar catchment areas.

The argument for introducing school choice into education systems is that it improves standards by encouraging schools to produce better outcomes for the student. A recent review of the literature focusing on the United States (US) found a small positive impact on student achievement, though there was significant variation across different contexts (Jabbar *et al.*, 2022). Similar research in the UK found that parental choice positively impacted student achievement for some pupils in some areas (Allen and Burgess, 2020). This finding was subject to several study limitations, including several assumptions about parental reasons for the choices made and acknowledging the impact of school catchment areas and families' financial ability to travel or move on parental choice. Parental choice in the English context is complex, and this introduction of 'quasi-markets' within the English school system, so called because the funding per pupil is still state determined and allocated, has necessarily meant that schools need ways to offer comparisons for parents to make their choice (Allen and Burgess, 2020). Nóvoa and Yariv-Marshal (2003) argue that this comparison is used to legitimise political action through devices such as 'success' or 'failure' and the 'politics of mutual accountability' through the use of league tables. The use of league tables then necessarily encourages the generation and use of quantifiable data by schools as a way to rank schools to support parents in making decisions, which is most often in the form of student assessment outcomes (Allen and Burgess, 2020). However, as Allen and Burgess (2020) found, not all parents make decisions based solely on this information.

While there is some evidence of parental choice leading to increased school outcomes for students (e.g., Allen and Burgess, 2020; Jabbar et al., 2022), scholars have argued that this move towards free market models of education and an increased interest in evaluation rather than improving schools through parental choice has increased 'datafication', a term used to describe the quantification of human behaviour and society to enable monitoring, tracking and analysis (van Dijck, 2014). Van Dijck argues that quantifiable data is becoming the most used form of data within schooling; however, one recent study that explored teachers' uses of data to inform their decision-making suggests that they persistently use qualitative data alongside quantitative data, even though the former is sometimes considered a threat to rational decision-making processes (Ho, 2022).

Although various scholars have expressed concerns regarding the use of data within school-based decision-making, it is clear that the practice-based use of data varies from that

espoused by those in positions of authority. Recent studies demonstrate that there is a mismatch in the imagined and actual use of data (Prøitz, Novak and Mausethagen, 2022), that teachers are using qualitative data alongside quantitative data to inform their decision-making (Ho, 2022) and using relational data to begin conversations rather than seeing it as a fixed outcome (Selwyn, Pangrazio and Cumbo, 2022).

Accountability to Ofsted

Alongside parental choice, Ofsted plays a central role in the accountability of schools and given their particular focus on the curriculum, the curriculum too. With the rise of data-based practices in education, Biesta suggests there is a trend within education which places an increased emphasis on accountability systems and the use of metrics to measure educational effectiveness (Biesta, 2009, 2010). School effectiveness is a relatively new research area in educational research and is focused on understanding how to make schools 'effective', although the discussions of what 'effective' means are complex. This area of research is closely linked to school improvement research as they both use scientific methods to understand the causal links between various interventions and school outcomes (Hargreaves, 1995). They both have their initial roots in systems theory looking for ways to understand what happens in the black box of schooling. Much of this research has influenced how Ofsted inspects schools, with a focus on progress and using terms such as 'value-added' (Department for Education, 2020).

The evaluations and 'scientific methods' employed in school effectiveness research are mainly positivist methods that rely on quantifiable data (Scheerens, 2015). The measurement of progress relies on more complicated methods of computation to give students a predicted grade and generate progress-based outcomes to ensure schools can be accurately compared (Gorard, 2010). As Gorard (2010) points out, these computational methods are not infallible but rather are driven by a need for schools to *prove* their effectiveness in a way that parents and Ofsted can compare, and as such, the concept of school effectiveness has entered the rhetoric of educational leadership and governance. What is clear from the overview of characteristics of school effectiveness research (see Figure 4) is that they all use the educational outcomes of students as their chosen measure. There are myriad ways to measure school performance; however, the use of assessment outcomes reduces education to a discussion of what students have learned and how successfully they passed high-stakes,

standardised tests. This reduces education to a linear input-output model of learning rather than a holistic development of knowledge and competencies such as is initially proposed as the school curriculum by the UK government.

	Independent variable type	Dependent variable type	Discipline	Main study type
1. (Un)equal opportunities	Socioeconomic status and IQ of pupil, material school characteristics	Attainment	Sociology	Survey
2. Production functions	Material school characteristics	Achievement level	Economics	Survey
3. Evaluation compensatory programs	Specific curricula	Achievement level	Interdisciplinary pedagogy	Quasi-experiment
4. Effective schools	'Process' characteristics of schools	Achievement level	Interdisciplinary pedagogy	Case study
5. Effective instruction	Characteristics of teachers, instruction, class organization	Achievement level	Educational psychology	Experiment observation
6. System level effectiveness	System level policies and institutional arrangements	Achievement and attainment	Economics	Background studies based on international assessment programs

Figure 4: Characteristics of school effectiveness research (Scheerens, 2015)

Many practice-based calls for pedagogy to be data-driven are reflected in the recent rise of research-led practices in education. High-performing education systems are characterised by 'research rich' schools staffed by research-literate teachers (Furlong *et al.*, 2014; Tatto and Furlong, 2015). There has been a recent interest in research-informed teaching in England, largely led by ResearchEd (2021), a teacher-led organisation that encourages the use of educational research to support teachers in decisions, particularly about their pedagogies. There has also been a rise in the use of Twitter and other social media to bridge academic and practitioner divides (Cain and Graves, 2018). As a result, there have been several calls for teachers to become more research literate, often as a way to support the development of a 'self-improving education system' (Sachs, 2016; Brown, White and Kelly, 2021). This has led to a rise in quantitative evaluations of interventions from organisations such as the FFT Education Lab, who '*produce independent, cutting-edge research that can be used by policymakers to inform education policy*' and state they are '*expert analysts of education data and use these skills to produce impactful reports, visualisations and policy recommendations*' (FFT Education, 2015), as well as the Education Endowment Foundation (EEF), who fund projects based on the offer of '*a rigorous evaluation of the project, as randomised controlled trials where appropriate*' (EEF, 2021).

The call for research in education to be 'more scientific' echoes similar calls from scholars such as Sharpe (1967), who argued for the creation of a science of pedagogy as he felt that teacher

education would only be a professional discipline once it was deemed more scientific. He called for 'the diligent application of research to practice in teacher education' to create such a discipline (Sharpe, 1967). There have been criticisms; Biesta is one of the strongest critiques of this model, with two articles, 'Why what works won't work' (Biesta, 2007) and 'Why what works still won't work' (Biesta, 2010). His critique of this as a research model focuses on the epistemological position held by those looking for 'what works' within education research. With increased calls to utilise RCTs, he points out that they are part of an epistemology in which the researcher identifies a problem at a distance and then looks for a solution. Biesta feels that we should be looking to Dewey's (1999) term 'inquiry' as a way to tell us what worked in a given setting rather than try and determine what works in every setting.

Although using research evidence to support choices regarding teaching practices has gathered much traction, some suggest there are lingering questions about the ways that research has been considered within practice. Mills *et al.* (2021) suggest that the conceptualisation of research-informed in the context of the current policy context (one that focuses on data and evidence) has become more of a pragmatic, problem-solving agenda seeking 'what works'. Helgetun and Menter (2022, p. 2) argue that this focus on evidence-based teaching means that 'we are now in an evidence era: where actions are justified through a language shrouded in talk of research, data, and best practice'. Gore (2020) argues that both research-informed and inquiry-oriented practices, when framed by an agenda focusing on data, can act as a de-professionalising force.

2.3. English Secondary Performing Arts Curriculum

As previously stated, the following definition of curriculum is used in this thesis:

> *'The multilayered social practices, including infrastructure, pedagogy and assessment, through which education is structured, enacted and evaluated'.* (Priestley, 2019, para. 7)

In this section, this definition will be applied to the performing arts curriculum. The section first considers the purpose of the secondary performing arts curriculum (curriculum for what and for whom), including powerful knowledge applied to the performing arts. It then considers the role of system dynamics on the performing arts, considering Progress 8 and EBacc measures specifically as two system factors referenced in relation to the performing

arts curriculum. Finally, it considers teachers' practices and beliefs in relation to the curriculum, exploring their potential impact on the resulting design and implementation of curricula.

Although known under a collective heading as the 'performing arts', in the English education system, they have traditionally been taught as separate subjects. Finney (2016) suggests this is because bringing them under one umbrella is challenging as each performing arts subject has a unique set of values and particular heritages and traditions[1]. As separate subjects, their place within the English secondary curriculum also differs. Music as a subject is included in the national curriculum and is compulsory until age 14 (Department for Education, 2014b). Conversely, drama is no longer a subject in its own right at KS3 and is instead included in the English curriculum (Department for Education, 2014b). As such, both Music and Drama curricula are initially considered individually in this section.

2.3.1.   Drama Curriculum: For What

'Drama education is treated with double suspicion by education gatekeepers, as either too soft or too subversive, or both'. (O'Toole and O'Mara, 2007, p166)

Drama has been through a tumultuous trajectory of curriculum development with multiple philosophies of drama education that have changed over the years, leaving behind a patchwork history of the purposes of drama education. Drama as a subject in its own right has struggled to claim a place within the curriculum, particularly in secondary schools, instead having what O'Toole (2009) describes as a 'half-life embedded somewhere and semi-acknowledged, as part of English, or as something called "expressive arts" or "integrated arts"'. While integrating into the expressive arts can be a highly creative fusing of the art forms (such as Grumet (2004) describes), as O'Toole (2009) points out, it is more likely to be a result of a timetable compromise where the arts have been squeezed to the margins of the curriculum. The result is that it is then often taught by non-arts specialists (Freebody, 2005). There is then a risk of further marginalising drama as a subject within the secondary curriculum due to the lack of advocates.

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[1] This thesis focused only on music and drama (as discussed in Chapter 1, section 1.3.2).

Drama has seen various arguments about its potential purposes, many of which have been ideologically led. As Bolton (1984) pointed out, 'Drama, like other subjects qualifying for a place in the school curriculum, has been part of a continual polarisation between two distinct views of education: knowledge-centred and child-centred'. Although written over 30 years ago, the same battle, to some degree, is still happening today. Early calls for drama in the curriculum came from people such as Comenius in the 1650s, who suggested that school should be a joyful place where children learn through play, particularly referring to dramatic play and plays (see Østern, Toivanen and Viirret, 2017). More recently, in the twentieth century, both Piaget (1962) and Vygotsky (1967) acknowledged dramatic play, discussing its role in the formation of understanding symbols, rules and social structures as well as helping to develop language.

Modern ideas of drama curricula have potentially three distinct, imposing paradigms of purpose that we have seen manifest in a variety of historical approaches to the teaching of drama:

- linguistic/communicative—gaining knowledge and skills through drama
- expressive/developmental—growing through drama
- social/pedagogical—learning through drama (O'Toole, Stinson and Moore, 2009).

Drama has long been seen as a tool for language development. As humans, we develop the ability to talk long before the ability to read or write. This has been discussed at length by Wagner (1979), who explores the centrality of dramatic play in the development of children's spoken language, while other studies have shown the benefits of engaging in drama for students' language ability (Shaffner *et al.*, 1984; Heath, 1993). In both cases, increased linguistic competency was seen following engagement in the dramatic arts a increased agency in the ways students interacted. This version of drama's purpose, however, has seen drama form an aspect of the English curriculum, as a way of supporting development within English. It has been suggested that this has not been a welcome inclusion and English teachers often approach Drama's inclusion in the curriculum with suspicion (O'Toole, 2009).

Two influential scholars set out their visions for the drama curriculum, advocating for drama's role in giving students an opportunity for creative expression; both Ward (1947) in the US and Slade (1959) in the UK were grounded in developmental philosophy, taking their influences

from Piaget or Vygotsky, who offered dramatic play as a way to develop self-expression. Ward (1957) believed that 'the arts add immeasurably to the richness and enjoyment of living', reflecting on influences from Mearns (1935) and his writings on creativity. Slade founded the Child Drama movement in the UK, focusing on training students to harness their Artistry and use it to develop their self-expression (Slade, 1959). Curriculum models built on expressive and developmental aims often see as their purpose one or a combination of emotional development, self-expression and self-esteem, creative imagination, self-confidence and/or social understanding and cooperation (O'Toole, 2009). The expressive and creative purposes may no longer be the dominant paradigm in curriculum development, but they are far from forgotten, and they are, in fact, quite a preoccupation of contemporary research in drama, with a particular focus of research on the power of drama to promote self-expressiveness and creativity in people with special needs (O'Connor, 2003; 2007; Raphael, 2004), as well as in gender identity (Gallagher, 2001; Sallis, 2004).

Drama used for social and pedagogical purposes was originally known as 'drama-in-education' or 'educational drama', but it is often now referred to as 'process drama'. B.J. Wagner (1998, p.5) describes its goal as 'to create an experience through which students may come to understand human interactions, empathise with other people, and internalise other points of view'. The most influential proponent of this purpose of drama was Dorothy Heathcote, whose most famous technique Mantle of the Expert is still used today by many, particularly in early years or primary education (Price *et al.*, 2017). In this way, we begin to see the drama curriculum much more like a process model of curriculum—with the emphasis on the process of drama-making rather than the outcome. When used as a pedagogical method, this seeks to rewrite the role of the teacher, encouraging students to take part in 'negotiating the curriculum' (Boomer, 1992).

O'Toole and O'Mara (2007) present the concept of 'the three pillars of art', offering drama a way of unifying the three competing paradigms in a new set of three dimensions: making (in drama: playwright, improviser, director, designer), presenting (in drama: actor, technical crew) and responding (in drama: audience, dramaturge, critic). They suggest that all the arts can fit comfortably within these three functions, though presenting may be less significant for visual artists. With some variation of nomenclature, these three dimensions have become widely accepted as the organising principles of Arts Education and the Arts Key Learning Area

throughout the UK (which feature delineations of making/forming/creating, performing/presenting/communicating and responding/reflecting/appraising). We have seen that music fits these three pillars of performing, composing and listening (appraising) as conceptualised by Swanwick (1999).

2.3.2. A Music Curriculum For What

Classroom music in England has always existed independently of learning a musical instrument in a way that it does not in other countries (Johnson and Fautley, 2017). For example, in the US, classroom music is synonymous with band or orchestra, where students learn an instrument and theory is taught alongside practical performance-oriented musicianship. In England, learning an instrument has usually been an independent occupation, with lessons offered through the local authority or, more recently, through music hubs. Classroom music was, and is, reserved for developing an understanding of music, with performing only one aspect of musical life taught in the English classroom (Johnson and Fautley, 2017).

The role of classroom music has been open to interpretation, and the purposes of school-based music education have been debated at length in the literature. It has had various purposes since pre-Christian times, having been viewed as anything from religious instruction, moral improvement, and cultivator of taste to civilising influence (Rainbow, 2006; Mark, 2013). There have been myriad suggestions of music's place within education; however, there is yet to be a consensus, with continued discussions in academia regarding the purpose of education and whether what matters is the curricular content or the methods of teaching (Cox and Stevens, 2016).

The ongoing traditionalist versus progressivist arguments in education have also been seen within the music education field (Finney, 2019). However, they tend to be expressed as a debate about the importance of teaching theory versus practical skills in music education (Fautley and Murphy, 2016a). In the 1980s, alongside the call for music to be developed as a way to express creativity and self-expression, there was a rise in the popularity of the three-part model of music education, which remains the central understanding of the classroom model of music education in England. Swanwick (2002a) outlined three core areas for a generalist music education: performance, composition and listening. This still dominates our

current understanding of musical curriculum models, assessments and even higher education curricula (Department for Education, 2013, 2021a). While this initially seemed to offer a way to cross the theory versus practice divide, Swanwick was far less interested in music as a social activity, instead positioning it as part of the objective world as a form of discourse (Swanwick, 2015). His justifications are based on the argument that music has long been a 'great symbolic' form, and he sought to attach a great significance to music as an art form and a meaningful educational subject.

More recent views of music's place in the wider curriculum come from people such as Susan Hallam (2010), who undertook a significant review of the literature and identified many aspects of student growth that music offered, including language, numeracy, intellectual development, creativity and strong social and personal development. Hallam's review has been used many times when justifying the existence of music within the curriculum. However, there are critiques, such as from Philpott (2012), that this 'soft' justification of music limits the ability for music to be taken seriously as a subject. He suggests that to discuss music as a means of improving various aspects of development means to advocate for music as a pedagogy rather than as a subject with a curriculum worth studying for its validity. While there are ways in which music could be good for you, as Philpott (2012) notes, it is not as straightforward as simply engaging in music and finding those benefits. He was clear that music could also be negative, recognising, for example, that it could be tribal, reflect social structures, or be gendered. The understanding that music is so woven into the fabric of society that it cannot be studied as a value-neutral subject meant Philpot began to see it as a language rather than a form of discourse in the way that Swanwick did. For Philpott (2012), music is open to multiple interpretations where meaning and value depend on the context, both the context in which the music was created and the one it is listened to or performed within. The call to view music in this way moves it further away from a performance subject and closer to the humanities, studying the social and historical formations of music and its performances.

The music curriculum has been the focus of renewed interest in the last few years with the development and publication of the MMC (Department for Education, 2021a), an Ofsted research review (Ofsted, 2021b) and, most recently, the National Plan for Music Education 2 (NPME2) (HM Government, 2022). Together these documents form the basis of the guidance for school music curriculum design.

The current curriculum at KS3 (Department for Education, 2013) offers a framework with six objectives for pupils:

- play and perform confidently in a range of solo and ensemble contexts using their voice, playing instruments musically, fluently and with accuracy and expression
- improvise and compose, and extend and develop musical ideas by drawing on a range of musical structures, styles, genres and traditions
- use staff and other relevant notations appropriately and accurately in a range of musical styles, genres and traditions
- identify and use the interrelated dimensions of music expressively and with increasing sophistication, including the use of tonalities, different types of scales and other musical devices
- listen with increasing discrimination to a wide range of music from great composers. and musicians
- develop a deepening understanding of the music that they perform and to which they listen, and its history.

The current statement of purpose in the music national curriculum states:

> *'Music is a universal language that embodies one of the highest forms of creativity. A high-quality music education should engage and inspire pupils to develop a love of music and their talent as musicians, and so increase their self-confidence, creativity and sense of achievement. As pupils progress, they should develop a critical engagement with music, allowing them to compose, and to listen with discrimination to the best in the musical canon'.* (Department for Education, 2013).

This statement of purpose within the music curriculum suggests a curriculum model that sits somewhere in-between a content and an objectives-led curriculum model. Within this statement of purpose, teachers are encouraged to ensure that students listen to 'the best in the musical canon' (Department for Education, 2013). This suggests a content-based curriculum model (Kelly, 2009) in which students are taught specific works collected by teachers that are thought to be 'the best'. The idea that there are a specific set of musical works considered to be the best is reminiscent of an Arnoldian view of the curriculum (Arnold, 1869). This sits alongside the other aspects of this statement of purpose, however that suggest

a process-based model of curriculum, where the focus is on pupils developing aspects such as their self-confidence, creativity and sense of achievement.

Alongside the national curriculum, the MMC was published in March 2021 and offers non-statutory guidance to schools on the possible implementation of the national curriculum (Department for Education, 2021a). Its aim is to provide 'a model of how the curriculum can be delivered', and in doing so, it offers 'guidance and ideas for teachers, and provides a springboard from which to approach teaching' (p. 4).

The MMC states that by the end of KS3 (Year 9), pupils will have:

- gained an aural knowledge of some of the great musical output of human civilisation
- engaged with creative processes through improvisation and composition
- built an understanding of how musical elements work and discussed how these interact with subjective and objective models of musical meaning
- developed knowledge of a wider range of notes, and improved their fluency in music notation. Notation can grant access to a lifelong passion for music-making if this skill is nurtured.

The MMC has received a mixed reception among music education scholars and faced criticism for lack of consultation with a wide variety of music education practitioners (Spruce, Marie Stanley and Li, 2021). Fautley and Daubney (2022) suggest that the press release with the MMC indicates a 'passive engagement with music', highlighting several phrases such as 'more young people will have the opportunity to **listen to and learn about** music through the ages', or 'as part of the curriculum pupils will learn about the great composers …', and 'They will be **taught about**' a range of genres and styles. The MMC itself however does highlight that students will have engaged with creative processes through improvisation and composition which suggests that the MMC itself does have a wider conceptualisation of engagement beyond just passive engagement.

Subject associations have offered mixed reviews of the MMC with the Incorporated Society of Musicians (ISM) detailing some positive aspects such as a breadth of listening examples, while also raising concern about the progress, suggesting that 'Progression in musical learning as described by the MMC lacks consistent rigour' (All-Party Parliamentary Group for Music Education, ISM and University of Sussex, 2019). Others, such as #candomusic—a joint venture

between the ISM, the MTA (Music Teachers' Association) and Music Mark—were more positive, endorsing the MMC as a good step forward for music education (ISM, MTA and Music Mark, 2021). Music Teacher have published several articles in response with some highlighting the scepticism of practitioners and their ability to enact the curriculum as set out in the model (e.g. Lydon, 2021). Conversely, Gillthorpe (2021) (the president of the MTA) has endorsed the MMC wholeheartedly, seeing it as a return to more traditional forms of music education that he feels are the way to teach the necessary skills and knowledge to progress in music. At the time of writing this thesis, it remains to be seen what the long-term effects of such a model curriculum might be on the curriculum design and implementation at the secondary level, particularly at KS3[2].

Most recently, the Department for Education has published the NPME2. The vision set out within is as follows:

> *'Our vision is to enable all children and young people to learn to sing, play an instrument and create music together, and have the opportunity to progress their musical interests and talents, including professionally. We want to see music valued and celebrated in every early years setting and school. Schools should deliver high-quality curriculum music for at least one hour a week in key stages 1 to 3, supported by co-curricular learning, and musical experiences'.* (HM Government, 2022, p. 5)

This is a follow-up document to the first National Plan for Music Education published in 2011. The NPME2 takes a broad view of the ecology of music education, covering school-based music hubs and home-based understandings of the breadth of musical education. The NPME2 was published very recently, and as such, little considered response to it has been published at the time of writing this thesis[3]. Prior to the publication of the NPME2, the MTA published an article that asked a variety of music educators what they wished to see in the new plan. Their responses varied from including music on the Initial Teacher Training curriculum in more meaningful ways, such as teaching a sequenced set of lessons, to including music on the EBacc,

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[2] It is important to note that although discussed here as a factor influencing the design and implementation of the secondary music curriculum, it was not published until after the interviews undertaken as part of this thesis.

[3] The NPME2 was published a day prior to writing this section, and as of July 2022, there is still little available comment, although critical views are beginning to emerge in the media and music press.

to increased funding and recognition for early years teaching (Rotheram, 2022). That article also highlighted what it saw as a fallacy that all musicians are experts in music education, particularly in the primary age range, and suggested the NPME2 needed to recognise the time and resources needed to ensure music educators had developed specialist pedagogies necessary to teach that age range (Rotheram, 2022).

Various music associations' initial response to the NPME2 was largely positive, particularly highlighting the plans and intention to place music as a subject of importance within the wider curriculum (ISM, 2022a, para. 10). One criticism, similar to that directed towards the MMC, is that there was a lack of meaningful consultation that allowed music teachers and parents to feed into the plan; as the ISM said, 'the plan would be improved if music teachers, parents and other experts had the opportunity to feed in their views on the contents of the plan through official consultation'. The ISM found in research conducted with 500 music teachers that 99% wanted to be consulted before the publication of the NPME2, although the government did not offer this consultation. They also found that teachers did not feel the call for evidence report published by the Department for Education (2021c) accurately reflected their experiences of teaching music in the classroom (ISM, 2022b). Similarly to the MMC, the NPME2 was published after the research phase of this thesis.

These documents together form the foundation of music curricula in English secondary schools, providing non-statutory guidance on the design of the Music national curriculum. However, there remain challenges in the implementation of the curriculum. A recent study by Savage (2021) explored the challenges facing music teachers. Conducted approximately six months before the data collection in this thesis and using 621 surveys and 38 interviews with music teachers, Savage's study pointed out that in many ways, the creation of music hubs and a national plan for music education demonstrated a significant change in the educational policy, and one that was not replicated in other subjects. Against this picture of change, Savage highlights that teachers raised concerns about inequalities that remained in the provision of music education as well as the impact of policy decisions, particularly the interpretation of these by headteachers, which they felt had had an impact on the depth and breadth of the music curriculum in secondary schools (Savage, 2021)

The variety of non-statutory guidance on the music curriculum is wide-ranging and, as such, does not entirely clarify the aims of music education in England. What the MMC and NPME2 do suggest is that there although there is a renewed focus on supporting the development of musical progression for all students, there remain questions regarding what that musical progression might look like. The 2021 Ofsted research review (Ofsted, 2021b) clarifies what Ofsted understands this to be. Although named 'research reviews', they have since clarified that these are more akin to position papers than systematic research reviews (ISM, 2021). What has perhaps been the cause of much contention about the status of these reviews is the question of what constitutes research differentially in both Ofsted's view and the beliefs of academics and teachers.

Mark Phillips, the HMI that leads music, clarified:

> *'It's important that it's [the research review] seen in the context of the EIF (Education Inspection Framework), because that's what we do – we inspect schools. The purpose of [the research review] is to explain how the thinking and the rationale behind the EIF applies to music.'* (Clifford, 2021)

The research review initially clarifies what Ofsted see as 'learning', stating that learning is 'a change to long-term memory' (Ofsted, 2021a). They identify three 'classes of knowledge' in the music curriculum—tacit, procedural and declarative. Tacit knowledge is the knowledge gained through experience that is often difficult to put into words, procedural knowledge refers to things such as playing an instrument or being fluent in using DAW or multi-tracking software, and declarative knowledge 'underpins advanced thinking' and examples of notation, keys or chords are given. They specify that the two main principles to consider when developing music curricula are time and cognitive load. These should be taken into account when designing the curriculum as it should be bounded by what pupils are capable of within the given time constraints and that 'Curriculum scope should also be informed by current research on human cognition and the role of the phenomenon that cognitive psychologists refer to as working memory' (Ofsted, 2021a, p. 3).

Although they reference three forms of musical knowledge, the stance taken by Ofsted in the EIF and this research review sees knowledge as cognitive, with learning something that happens through a change in long-term memory. This model of musical knowledge reflects

congruency of thought with learning theory models that have been privileged in much of the education research in the last five years (ResearchED, 2021). In this way, it seems to suggest a hierarchy of knowledge forms, with tacit knowledge referenced in the review as a form of cognitive tacit knowledge that Nonaka (2009) refers to as ingrained schema, beliefs and mental models rather than technical tacit knowledge, which is focused on skill development and concrete know how (Nonaka and Takeuchi, 1995). This would suggest focusing on cognitive forms of knowledge rather than practical, embodied forms of knowledge.

Forms of Knowing in Music

Fautley (2021) argues that many of the problems and issues in music education are rooted in considerations of knowledge itself. This focus on the question of knowledge within music education is relevant in considerations of music curriculum theory, as the question for curriculum development is one of epistemological belief about the forms of musical knowledge and what they as teachers feel it is important for pupils to gain throughout their music education experiences at secondary school. This epistemic belief regarding the nature of musical knowledge and their relative importance can shape and change the curriculum as designed and enacted through the way it is of central importance in considerations of the purpose of a music education (Alperson, 2010).

Considerations of knowledge forms within music are not new, and they have been considered at length both in isolation and in terms of their role within assessment practices. On knowledge concepts within music more generally, Elliot (1991) discusses whether music was a form of knowledge or a source of knowledge. He considered music as a verb in the sense that musicing is both a form of knowledge and a source of know-how 'to music' musically. He suggested that to possess musicianship is to have a rich form of procedural knowledge. Burnard and Georgii-Hemming (2016) also discuss this consideration of knowledge within music and suggest that in the context of music education specifically, there is typically a distinction between declarative, abstract and/or cognitive learning, and context-specific or 'cultural knowledge', which they say is rooted in practical, experiential and/or context-specific learning. Burnard and Georgii-Hemming suggests that as a consequence, there is the potential for a 'discontinuity between curriculum music knowledge and everyday musical experience' (2016, pp. 103–104). Reimer (1992) has suggested that four types of knowledge are relevant

to musical knowing: knowing within and knowing why as primary and knowing about and knowing why as contributory to the first two.

This idea of various types of knowledge relevant to music knowing was also considered by Franks (2016), who offered a conceptualisation of three ways of learning within the performing arts. He suggested there is learning *in,* learning *about* and learning *through.* Learning in the performing arts is to experience performance either as spectators or participants. Learning about the performing arts is considering their histories, structures and forms, and their cultural significance, among other things. Learning through is to use the performing arts as a form of pedagogy to teach about human emotions and experiences. These notions of aspects of learning are interrelated and together form a holistic view of the learning opportunities offered by the performing arts as a subject.

Where these conceptualisations of musical knowledge intersect with the broader conversations within the national curriculum, they become more focused on the differences between procedural and declarative knowledge. Multiple scholars have discussed these conceptualisations in relation to the current national music curriculum. Savage (2021) suggests that secondary music does not recognise this dichotomy of skills and knowledge as, within music, skills and knowledge are intertwined. Bate (2020) undertook a qualitative comparative analysis of the pre-2014 and post-2014 national curriculum for music, comparing the differences and categorising the changes. She found changes in focus and expectation, particularly regarding talent and musicality, greatness and the canon, compulsory performance training, reading staff notation and increased flexibility of implementation. She suggests that the definition of knowledge within the national curriculum has become narrower, focusing specifically on 'abstract knowledge and academic rigour'. She suggests several conceptualisations of a possible music curriculum influenced by critical pedagogy (Freire, 1970) and that instead of being taught about the musical canon, students could instead develop their understanding of how this developed through understanding the complex nature of the musical canon and human's propensity to create them (Bate, 2020). She suggests this is a way that teachers can ensure they both meet the government's conceptualisations of academically rigorous curricula while also developing emancipatory knowledge.

Fautley and Murphey (2016b) suggest that the impact of the knowledge versus skills debate in music education is that there has been a rise in prioritising knowledge over skills. Swanwick (1994) argues that focusing on declarative knowledge (knowing that) is 'relatively uncomplicated to manage in classrooms, cheap to resource and reasonably easy to access, and [that] this is very seductive'. He suggests that this is particularly the case given the current accountability systems. Although that was in 1994, almost 30 years ago, it would seem that educational accountability systems have only got more stringent rather than less, and so this would still appear to apply today. More recently, Fautley (2018) has agreed and argued that music skills are complex, suggesting that they often have a 'physicality, embodiment, or musculoskeletal component, in which feeling the music, its beat at the very basic level involves more than simple recall' (p. 1). Berryman (2018), writing in the Chartered College of Teachers magazine *Impact*, warns that prioritising knowledge of music might lead to lessons about music that are not actual musical lessons.

Fautley (2021) has recently suggested that music education should be about offering students new experiences, about taking them out of their current understanding of music and introducing them to new musics which aligns very much with the idea of powerful knowledge (Young and Muller, 2013). Although he feels this should be an important part of musical education, he suggests that this needs careful consideration within the curriculum as not all students' starting points will be the same, even if they come from similar backgrounds. The complexity of the considerations of what musical knowledge is and should be suggests that there might be an epistemological tension between musical education and the current educational environment in which the phrase 'knowledge-rich curricula' has been conflated with descriptions of declarative or powerful knowledge (Hordern, 2019).

These debates and tensions surrounding what musical knowledge is and how it should be included within the music curriculum have influenced the assessment of music education. Fautley (2010), who writes at length about the challenges of assessment within secondary music education, has called for a 'holism' in musical assessment, stating that it is a particular strength of music specifically. He calls for 'assessment in music to be musical, rather than aspire to some pseudo-scientific quasi-objectivity' (Fautley, 2010, p. 11). This was supported by the creation of an assessment framework together with a colleague for the national curriculum, which seeks to support broader conceptualisations of musical assessment beyond

simply knowing about it (Fautley and Daubney, 2014). Spruce (2001) is critical of the way that musical assessment takes place in schools, suggesting that it continues to privilege the ideals of Western art music and that this has the potential to create tension between curricula that cover a wide range of musics on the one hand and assessment practices that are 'monotheistic' on the other.

It has been suggested that music teachers assess 'competences' within music, rather than specific abstract knowledge. McPherson and Schubert (2004) suggest that in performance assessment, there are at least four main types of competencies: technique, interpretation, expression and communication. Hallam (2006) also asserts that to assess skill learning is central to assessment practices in music. In this vein, Mills argues that assessing musical progress should be done by assessing musical behaviours. This delineation between behaviours and skills is subtle but demonstrates some of the complexities inherent in considering curriculum sequencing within the music curriculum. The current national curriculum focuses on 'progress over time' (Ofsted, 2019), with a particular interest in how knowledge is sequenced within curricula designed and enacted within schools.

Anderson (2021) undertook research with music teachers considering their approaches to curriculum sequencing, specifically at KS3, and found that there was a lack of consensus in the ways that teachers conceptualised the idea of curriculum sequencing. It has been found that music teachers often teach topics at KS3 that change on a half-termly basis (Anderson, 2021a). These can vary from school to school but might typically involve topics such as Blues, Film Music, or Rhythm modules. The effectiveness of teaching in this way has been called into question by Ofsted, which described instances of schools they felt failed to consider how these projects were sequenced to support musical progression (Ofsted, 2012).

More recent considerations of musical progression from Ofsted in its research review are reminiscent of the Swanwick and Tillman (1986) spiral of musical development, as they suggest that good curricula offer repetition of key content with the gradual introduction of new ideas, methods and concepts. They also suggest three 'pillars' of musical progression: technical, constructive and expressive. This idea is not new. However, previously, music education has been predicated on delineations between what has been observed as the three fundamental aspects of music: listening, composing and performing (Swanwick, 1999). McPhail (2018) suggests that these are unique to music within the secondary curriculum and

although these are linked, all have their own skill set. This further complexity might be one of the reasons that linear progress has been called into question within the music classroom. Fautley and Daubney (2022) revisited the spiral development model recently, suggesting that it is not intended as a model of curriculum design. Rather, it is suggested as a 'musical development sequence'. Used in this way, they suggest that the spiral can call into question notions of linear progression. Spruce argues that a linear model presumes predictable and common stages of development and ignores children's social and cultural backgrounds, affecting their perception of what music is and means to them (Spruce, 2003).

This is against a background within English assessment models generally that focus on a linear progression, with Weeden (2013, p. 143) noting, 'English assessment models are based on a hierarchical linear sequence of performance which implies that learning is a series of steps'. While Weeden was referring specifically to the context of Geography, this linear model was implemented in all curriculum subjects in secondary schools with the notion of 'flight paths'. Against these linear models of progress, one well-known conceptualisation of musical development is what has become known as the Swanwick and Tillman (1986) spiral. This proposes an eight-mode spiral of development and was derived from the analysis of student compositions. Through this analysis, they identified the musical development they could see within these and suggested a spiral model of musical development that could offer a way of conceptualising development in other musical contexts.

2.3.3.   *Performing Arts: Policy and Practice*

What is very clear when tracing the history of both the music and drama curricula is their tumultuous history and the often-competing paradigms in which they operate. While they both have their traditions and specific histories and advocates, they share several similarities and parallels. For both subjects, the competing discourses have been focused on the purposes of both drama and music as a subject. Returning to the definition of curriculum adopted in this thesis (Priestley, 2019), considerations of the system dynamics are necessary. A recent report from the ISM and Birmingham City University looked at the impact of accountability on music education in England and suggested that wider contextual factors are at play and influence music education (Bath *et al.*, 2020).

One of the current measures of school effectiveness is to consider the number of students taking EBacc subjects. This consists of six subjects aimed at offering a broad and balanced curriculum. Students are expected to take English, maths, science, geography or history and a modern foreign language. The arts do not appear on the EBacc list of subjects that students are expected to study; as such, it has been made clear by the UK Government that they are not a priority for KS4 study. Guidance advises schools to offer a minimum of one arts subject at KS4, but there is no requirement for this (Department for Education, 2014b). There is a decrease in the number of students taking arts subjects (Johnes, 2017)because schools ensure that students are taking the full range of subjects as stipulated in EBacc within a finite number of hours.

Together with EBacc, new measures of progress were introduced in 2016, aiming to better measure the effectiveness of secondary schools by understanding not simply what grades students achieved (a measure that was critiqued for a long time as being unfairly weighted against schools in areas of high social deprivation) but rather what progress or value added students left schools with. Progress 8 measures consider a range of subject areas somewhat like EBacc, with subjects divided into 'pots'. Schools are given a Progress 8 score per student based on the progress made in eight subject 'pots' (see Figure 5).
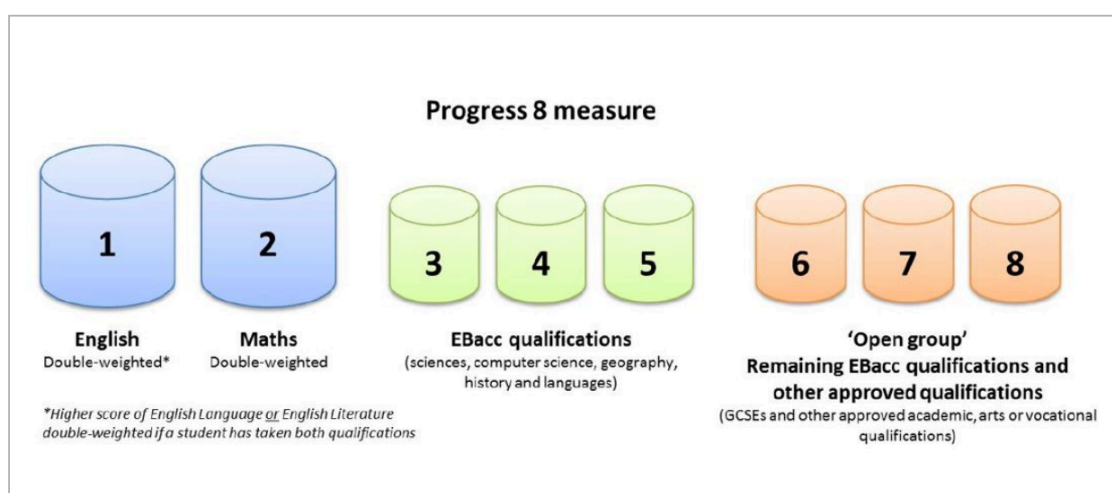
Figure 5: Progress 8 measures

For Progress 8 measurements, the arts fall within the open group of qualifications (pots 6, 7 and 8). While this initially appears generous—three out of eight subjects could potentially be the arts—it is important to remember the wide range of possible subjects that students could

choose within this group beyond the arts. All design and technology subjects fall within this category, as do any vocational qualifications (such as Business and Technology Education Council [BTEC]), or subjects that are often popular such as Physical Education. This means that there is then a whole raft of subjects competing for these open slots. This is then made more complicated by realising that any EBacc subjects not counted in pots 3, 4 and 5 can also be counted in the open group. There is, then, an impetus for schools to ensure that the EBacc set of six subjects is followed, allowing for two further choices from a wide array of other possible qualifications they may wish to take.

It has been suggested that due to accountability measures such as Progress 8 and EBacc, the performing arts are disappearing within schools (Johnes, 2017). It is clear that entries at KS4 have been reduced for arts subjects, and Fautley (2019) argues that this is a direct result of Progress 8 and EBacc accountability measures. The Musicians' Union suggests that the result of not appearing within Progress 8 or EBacc is that the Performing Arts are often marginalised to make room in the school curriculum for subjects that do appear (Savage and Barnard, 2019). This is reminiscent of the ways that Bernstein (2003), discussing curriculum, describes it as consisting of units of time that are filled with content and that a subject's level of status is thus accorded by how much time is allocated to the subject and whether it is compulsory or optional. It is then possible to suggest that we start to see a hierarchy of subjects based on how they are outlined and specified within the national curriculum and policies. Consequently, some subjects may be viewed as more important than others, as indicated by their designation as core subjects, which leads to the marginalisation of other subjects such as arts subjects (Hennessy, Rolfe and Chedzoy, 2001; Oelkers and Klee, 2007).

Research conducted by the ISM in 2018 found that in practice, there had been a narrowing of the curriculum (ISM, 2018), and the Department for Education itself recognises the potential for a narrowing of the curriculum because of the curriculum, calling it a 'legitimate concern' (Department for Education, 2018). An Ofsted report subsequently found that curriculum narrowing was happening where they identified a 'disproportionate or premature emphasis on teaching exam specifications was limiting pupils' exposure to a broad and balanced curriculum throughout their secondary education' (Ofsted, 2018a). This curriculum narrowing was also identified by the University of Sussex, which carried out research looking at 'the state of the nation' within music education (All-Party Parliamentary Group for Music Education, ISM

and University of Sussex, 2019). This found that statutory music education provision was no longer consistent at KS3, finding that some schools offered no music provision or only on one day per year. They also identified a lack of continuity, finding that a growing number of schools offered music on a carousel basis only in rotation with other subjects (usually other arts) and that the time allocated to music in the KS3 curriculum was decreasing. Data compiled by the Department for Education (2022) exploring the school workforce in England confirmed a reduction in the number of hours music was taught. Although not isolated specifically to KS3, they found a decline of almost 10% in the number of hours taught in Years 7–13, from 92,700 in 2010 to 83,663 in 2020. Comparatively, they found an 11% increase in English and a 14% increase in Maths in the same period.

While this is the choice students have to make regarding KS4 and taking qualifications, it is clear that there is qualification washback (Nusche, 2016) encouraged by Ofsted with the publication of their report on KS3 as the preparation for KS4 (Ofsted, 2015). It also often follows that if a school does not offer a course or subject at KS4, then they are unlikely to have a specialist subject teacher and much less likely to offer that subject at KS3 (Daubney and Mackrill, 2017). This appears to be the case as the ISM found that music departments are shrinking and single-person music departments are prevalent within secondary schools (All-Party Parliamentary Group for Music Education, ISM and University of Sussex, 2019).

This feeling of a hierarchy of subjects, with performing arts towards the bottom, has been reinforced by those in policy, such as former Education Secretary Nicky Morgan, who said:

> *'If you didn't know what you wanted to do… then the arts and the humanities were what you chose because they were useful, we were told, for all kinds of jobs, we now know that this couldn't be further from the truth. That the subjects to keep young people's options open are STEM subjects – science, technology, engineering and maths'.* (Morgan, 2014)

These statements were later qualified, and Morgan claimed that her remarks were not intended as a slight on the arts but instead to encourage young women who were unsure what they wanted to do to take science subjects as they were useful for a range of jobs outside science careers. While clarifying her earlier statements was welcomed, there remained a question regarding her views on the arts as she still appeared to be encouraging STEM subjects

over the arts and humanities. There is now a renewed focus on a broad and balanced curriculum at KS3 with an emphasis on a broad subject choice on offer at KS4 (Department for Education, 2014b); however, while the measure of school effectiveness remains Progress 8 together with EBacc, it appears unlikely there will be much of a change in the priority for schools.

With the introduction of Progress 8 and EBacc as a measure of accountability for schools, there were changes to both the key stage curriculum and qualifications at KS4. It was first made clear that only qualifications on an approved list would count towards the Progress 8 measure (Department for Education, 2020), with the list not including many vocational qualifications. There was also a move towards 'ensuring that arts subjects are more rigorous in line with other academic qualifications' (Morgan, 2014), the implication being that they were not academic subjects themselves, placing them lower in the hierarchy of curriculum subjects.

Where the performing arts do remain on the curricula in English secondary schools, their purpose and resulting content can vary greatly, in part due to the teachers' influences. This is particularly prevalent in the performing arts as teachers are often working in one-person departments (ISM, 2019) and, as such, are more likely to be responsible for the curriculum development than teachers of commensurate experience in other subjects (Daubney and Mackrill, 2017).

2.4. Teachers' Practices and Beliefs in 21st-Century Performing Arts

'To understand something so intensely personal as teaching, it is critical we know about the person the teacher is.' (Goodson, 1980, p. 1)

2.4.1.   *Performing Arts Teachers: Creative Artists, Performers or Professionals of Practice?*

It is well known and regularly observed that teachers' beliefs and values heavily influence behaviour (Datnow and Castellano, 2000; Bernard, 2009) as well as their practices and curricula choices (Fenstermacher, 1978; Cochran-Smith, 1991; Pajares, 1992; Eisner, 1996; Richardson, 1996; 2003). These beliefs often inform their teaching methods (Kennedy and Kennedy, 1996) and teaching strategies within the classroom (Stegman, 2001). The concept of 'beliefs' lacks a clear, widely accepted definition and can be used interchangeably with

other concepts such as attitudes, values, opinions, perceptions and perspectives (Pajares, 1992). The definition adopted in this thesis is taken from Kos (2018): 'an individualised system of understandings about the world'. These beliefs do not usually exist independently; rather, they are organised into systems and are influenced by context (Mills and Smith, 2003; Rino, 2015). It is also known that conceptualisations of identity are embedded in the concept of beliefs (Kos, 2018). Identity within sociology is most often discussed in terms of group membership—how your identity is related to membership in certain groups, such as music teachers. Teachers' professional identities generally are based on memories of past experiences and teachers (Dolloff, 1999), and it has been said that their identities are entangled with concepts of professional identities (Beijaard, Meijer and Verloop, 2004) and that teachers' biographies (their knowledge, skills, emotions and experiences) are all resources drawn upon within their teaching (Hirsch Jr, 1993; Cardelle-Elawar, Irwin and de Acedo Lizarraga, 2007).

Specifically, within music teaching, it has been thought that professional identity and beliefs about teaching were most influenced by music teachers and parents, with their experiences of ensemble performance appearing to have the most impact on later beliefs about their teaching (Isbell, 2008; Austin, Isbell and Russell, 2012). To understand performing arts teachers' practices and beliefs, then, there must first be an understanding of their backgrounds prior to becoming teachers. It is important to note that while the English curriculum positions classroom music as a general education of music, most classroom music teachers are classical musicians (Hargreaves *et al.*, 2007). In fact, it is difficult for people without Western art music training to become music teachers at all, with most teacher training courses requiring at least one Grade 8 performance qualification as a matter of course (Philpott, 2010).

Music teacher identity is a well-researched topic in music education and is often thought to consist of two aspects: teacher identity and musician or performer identity (Bouij, 1998, 2007; Bernard, 2005; Brewer, 2009; Pellegrino, 2009, 2010; Conway *et al.*, 2010; Russell, 2011). These two identities are often competing, however, and can lead to a 'clash' that has been observed to affect teachers' beliefs and practices within the classroom. Hargreaves *et al.* (2003) suggested this clash exists because of the diverse genre demands of the secondary school classroom versus the typical education in the Western classical tradition based on a

'professional performance' career model. This clash creates potential tensions within the classroom, and many of those who found music teachers' identities had two aspects also found that music teachers felt that their performer/musician identity is often stronger than their teacher identity (Aróstegui, 2004; Bouij, 2007).

More recent research however has shown that the stronger identity changes over time (Conway *et al.*, 2010) and with experience (Isbell, 2008). This has been described as two separate 'senses of self'—the teaching and the musical self. The teaching self (Danielewicz, 2001) encompasses the teacher's role identity as well as their beliefs and knowledge (Fives and Buehl, 2012). The teaching self within music means drawing on their identity as music teachers and their beliefs and knowledge gained from their musical education. The musical self has been said to encompass both notions of 'music in identity' and 'identity in music' (Hargreaves, Miell and MacDonald, 2002). Identity in music is the self-concept of the role within music, such as performer or composer, and music in identity is formed when music is used to develop a sense of identity. What is clear from the literature is that music teachers' identity is complex and changing, with many tensions to be negotiated within the classroom. This opens up the possibility that this tension can influence the curriculum within the classroom as teachers attempt to negotiate their sense of Identity and beliefs regarding music teaching. Most music teachers are trained in Western art music, which then underpins music teachers' identities as performers. This understanding of what it means to be a performer is typically influenced heavily by Western art music, such as the ability to read notation and the importance of technique, which has been observed to influence practice (Dwyer, 2016). The previous section suggested that this could also influence assessment practices (Spruce, 2001). In response to the music teacher/performer identity clash, Jorgensen (2008) suggested the notion of 'musician-teacher identity' as one that 'embodies a contextualised understanding of music, literacy, orality, performance practice, creative musical expressions, and scholarship'. This idea of musician–teacher identity is heavily grounded in a philosophy that highlights the importance of musicianship within the identity of the music teacher. 'Musician' as a term is used regularly, but there are large differences in the way people conceptualise what a musician is. Some define musician as those that participate in music-making outside the classroom, whereas others see it as a professional performer (Ballantyne and Grootenboer, 2012).

2.4.2. Teachers' Beliefs: Autobiography and Narrative

Teachers' beliefs are thought to depend on three sources: personal experience, the experience of their own school life (as a student) and experience with formal knowledge. Both content knowledge and pedagogical knowledge with their own educational experiences seem to play the biggest role in shaping these beliefs (Richardson, 1996). Teachers' beliefs are formed early, and most teachers come to teacher training already holding clear beliefs about their practices and pedagogies, and they then filter that training based on those existing beliefs (Schmidt, 2012). Rather than their teacher training, it appears that teachers' beliefs and therefore practices are more heavily influenced by 'trusted role models' who are previous teachers or ensemble directors (Schmidt, 2012).

Teachers' beliefs also play a role in their pedagogies, and more recently, there has been a significant turn towards widening music curriculum pedagogies, much of which can be traced back to Green (2001) and the advent of Musical Futures. Green (2002) found there are more positive attitudes now towards popular music in the classroom than in prior years. Plummeridge (2003, pg. 7-8) suggested that:

> *'Music lessons are now regarded as the means of "initiating" children into the discipline or "world" of music as part of a liberal education directed towards the opening and development of minds. The arts are a unique form of knowing and thinking … It must be stressed, however, that educators subscribing to the idea of music as a way of knowing are always at pains to point out that this is experiential or acquaintance knowledge to be acquired through direct contact with music and not by merely learning about it'.*

This seems concurrent with Green's (2001) Musical Futures pedagogy, which emphasises experiential knowledge within the music classroom.

When considering pedagogies, it has long been thought that teachers exhibit signature pedagogies (Shulman, 2005), and this is no different in the performing arts. This has not been specifically considered with secondary school-based teachers; however, it has been suggested that creative practitioners employ particular pedagogies within schools. Thomson, Hall and Jones (2010) looked at creative practitioners' pedagogies to identify any common ground in terms of how they tended to teach within the classroom. They saw that creative practitioners

had a specific axiological commitment—that they value collaborative and cooperative ways of working, which is also integral to their pedagogical approaches.

They also felt there were certain essential components to the signature pedagogies for creative practitioners, namely:

- the approach to inclusion (there was no differentiation but instead open-ended creative tasks with no right or wrong answer)
- the importance of choice and agency (they allowed students to make 'meaningful choices')
- the challenge of scale and ambition (creative practitioners often offered 'boldness'— big projects with difficult materials for longer periods and with highly regarded professional artists)
- the role of the absurd and carnivalesque (most Creative Pedagogy was accompanied by laughter, jokes, play and satire as a matter of course)
- the lived experiences of the present (rather than asking students to reflect on what you did and what you will do).

Given the above discussions (in sections 2.2.1 and 2.2.2) about accountability measures, it is reasonable to suggest that performing arts teachers working within the secondary school context may not feel as much freedom to utilise the creative pedagogies, as outlined by Thomson, Hall and Jones (2010). Hanley et al. (2018) suggest that all secondary subjects have signature pedagogies; however, it is unclear what school-based music teachers in England would consider their signature pedagogy (if they indeed have one).

It is thought that disciplines have specific cultures, and this has been variously referred to as subject culture (Andrews, 2000), subject subculture (Ball and Lacey, 2019) and subject loyalty (Bernstein, 1990). Bernstein (1990) discusses subject loyalty as a way of considering how beliefs about disciplines are created. He suggests that subject loyalty is developed in pupils throughout their education, creating an educational identity that in England is developed early as the curriculum narrows relatively early, with students tending to choose either science or arts at both GCSE and A Level (Bernstein, 1990).

Ball and Lacey (2019) discuss subculture as a way of considering how heads of departments make sense of the national curriculum. They found that heads of departments interpreted the national curriculum differently. This meant that for some, the national curriculum was 'added

in' to their existing curriculum. In contrast, others took an interpretative approach, maintaining their view of the curriculum and translating the national curriculum through their existing curricula (Ball and Lacey, 2019).

These are thought to be important within teachers' beliefs, and John (2005), following interviews with 37 teachers, including music teachers, suggested that subcultures affected teachers, even where the pressure from the 'parent discipline' was not actively present. Philpott (2010) has suggested that the narrow background and conservative training of many music teachers have contributed to a lack of innovation in music pedagogy and feels that pedagogies in most classrooms are still very traditional. This is starting to change, however, with the increase in those teachers opting to use Musical Futures style pedagogies, where students are encouraged to explore music through popular music in return to learning by ear rather than by using notation (Green, 2017). It is clear, however, that a teacher's curriculum choices, and their enactment of those choices, are likely to be based on a complex interplay of their personal experiences with education and their values and beliefs, which are thought to have a pivotal influence (McPhail, 2013). McPhail (2013) suggests the success with which students can engage in music's various ways of knowing depends on how well the teacher can recognise the epistemological intent of their practice. He also points out that educational environments should seek to place both dissonance and consonance in the classroom so students can recognise their music as having a place of value but also being challenged by other music, including that of the teacher.

Although it is clear that beliefs can influence the curriculum and that music teachers are mostly classical musicians, it is also clear from recent research (McPhail and McNeill, 2019) that teachers were all critical of the idea of needing to be 'elite' to be welcomed into the world of music-making or musicianship, and they felt that they were problems with the tensions between the current need to legitimise music as a form of knowledge and the need to create the right kind of knower. While they found a lack of consensus among music teachers regarding how they would achieve it, they all noted music's potential to achieve individual, social and political ends. Rather than seek to implement the same pedagogies and curricula they have experienced, it would seem that teachers are now seeking to offer a wider musical education.

2.4.3. Teachers' Practices, Identity and the Role of School Accountability

Many music teachers' values are inherited from the Western art music tradition (Ross, 1995; Regelski, 1997; Bouij, 2007; Hargreaves *et al.*, 2007). As a result, it has been suggested that many of the curriculum choices and pedagogies are influenced by a very traditional mode of teaching that mirrors that of apprentice and master modes (Daniel and Parkes, 2015). Much of the literature in this area has been highly critical of the music seen in classrooms, particularly in the UK in the 1990s, which identified a 'problem' with school music (Ross, 1995; Mills, 1996; Plummeridge, 1997; Bray, 2000). Mills' (1996) well-known critique of school music described five examples of music teachers that they had seen over the course of their research in secondary schools. They included teachers who praised students regardless of the quality of their performance, meaning that students did not have the opportunity to improve with meaningful critique and feedback. They also identified the 'no keyboards before Christmas' approach, where students were offered performance opportunities only if they had completed written work first. Ballantyne and Mills (2008) interviewed a series of teachers and analysed their responses through a social justice framework. They discuss teachers who suggested that they got the 'upper-level kids' to play a melody while the 'lower-level kids' played a bass part to keep the beat so that they feel involved and like they were accomplishing something (p. 82). While this was discussed as a way of ensuring all students were involved in music-making, it does show some problematic divisions between those observed as 'capable' of music-making and those not. Regelski (2012) suggests that music teachers often show a disposition that he named 'musicianism': teaching in ways that prioritise musical choices and values over the needs of the students. Earlier research by Regelski (1997) also expressed concern for how music teachers modelled their school curriculum on their musical training, feeling that it advantaged those with a high aptitude over the other students. While most of this research was carried out 20–30 years ago, it is worth highlighting this literature here, not least because these descriptions of school music are ones that current teachers may have experienced themselves as students.

More recent research in this area, however, did not find that there were such 'problems' with music teaching. Dwyer (2016) carried out narrative enquiries with four music teachers in Australia and found that teachers agreed that all students could make music as part of the classroom curriculum. This seemed a departure from previous understandings that music-making requires some kind of innate talent. This research did see that teachers' beliefs had a

large influence on their practices within the music classroom; however, although all teachers emphasised that they felt all students were capable of music-making, there were still practices and pedagogies observed that were deeply influenced by Western art-infused education or identity. Two music teachers in the study, for example, were adamant that reading notation was a central aspect of music-making and while this is true for most Western art forms, it is less of a concern in other forms of music-making. They drew the conclusion that it appeared teachers were still considering music lessons a form of training for tertiary performance-based music education.

While beliefs seem to play a large part in the curriculum, some have suggested that these purposes, identities and beliefs are often challenged by the context in which they teach. For example, Wong (2005) considered music teaching both in Hong Kong and Vancouver, Canada, and found that while teachers' curriculum content choices were influenced by their beliefs, their pedagogies were more likely to be concurrent with the context in which they were teaching. They found that while there was a difference between the emphasis placed on the content of the curriculum, those in Vancouver taught in 'more progressive' ways as was encouraged by their educational setting, while those in Hong Kong taught in more traditional didactic ways.

Within music teaching, then, it would seem that there is a current turn within teachers' practices to offer a wider, more varied music curriculum and pedagogy beyond that of Western art music. Against this, however, it is clear that there remain challenges within the current educational context. Ball (2003) suggests that performative regimes create a conflict between professional values based on critical reflection and practice determined by externally imposed, data-driven priorities. He suggests that this leads to an 'inauthenticity' of practice, leaving teachers unable to implement practices based on their beliefs and values. More recently, Moore and Clarke (2016) used Berlant's (2011) idea of 'cruel optimism' to discuss the current problematic way in which teachers are struggling to enact their identity and beliefs within the classroom. They describe cruel optimism as 'situations of attachment to hopes and aspirations in which not only is the latter likely to remain unfulfilled, but the very sustaining of the attachment itself has negative, constraining effects in relation to one's life and development' (Moore and Clarke, 2016, p. 668). In a setting where professionalism is now an essential characteristic of the 'effective teacher' in the 'effective school', teachers feel bound

to act professionally, which now seems to require adhering to the demands of a data-driven education system. For teachers whose identities and beliefs are about music as a place to explore a sense of self and social and political identities, this creates a sense of cruel optimism as a curriculum with the aims of offering social and political development for students is always going to remain unfulfilled while they seek to remain professional in an environment where professionalism is synonymous with the ability to produce quantitative data to prove their effectiveness. It has been suggested, for example, that music teachers use assessment as 'didactical self-defence strategy' (Almqvist *et al.*, 2017). They have been seen to use them in two ways: 1) where they use them to justify music as a real subject in which the required measurability and reliability can be attained and 2) if they have enough (read, many) points of assessment for each student's music, teachers can justify their grading and prove its relevance and fairness (Elliott, Silverman and McPherson, 2019). These assessments then influence the students' experiences curriculum (Goodlad, Klein and Tye, 1979), where teaching often leads to these assessments and becomes a narrow view of what music knowledge is.

Alongside the impact on the curriculum more broadly, there has been research that suggests these measures have also impacted pedagogies. Turner-Bisset (2007, p. 194) suggests that Ofsted 'governs teacher pedagogy and learner experience' by holding teachers accountable to benchmarks that include specific forms of practice. Savage (2021) suggests that teachers' personalised pedagogy is challenged by these forms of accountability, which Ball (2003) referred to as 'terrors of performativity'. Savage argues that the increased focus on accountability means the educational focus is on sanctioned teacher practice rather than encouraging creative practice and supporting the aspects of learning that cannot be tested (Savage, 2021). He suggests that the impact of this is that there is an assessment backwash that impacts teaching and learning; something also argued by Fautley and Colwell (2012, p. 488), who posit that 'This can result in a narrowing of the curriculum, and of learning opportunities, as teaching becomes focused solely on the final assessment'.'

Thwaites and McPhail (2018) describe a 'bipolarity' that exists for heads of music where they describe two polarities: compulsion, where they are forced to do something in a certain way, and desire, where they use Deleuze and Guattari's (2004) notion of a 'desiring machine' (p. 34) to describe co-curricular music. They found in a study conducted with music heads of department that despite heavy workloads, the desire to promote music as a worthwhile

subject in secondary schools meant that teachers were undertaking large amounts of work outside school hours alongside complying with the day-to-day requirements of a head of department. They suggested that ultimately, 'These requirements take on a symbolism that gets in the way of the delivery of disciplinary knowledge' (Thwaites, 2015, p. 57).

Turner-Bisset (2007) found that 'teachers compromise on the kinds of teaching in which they believe in, and the kinds of teaching demanded by performativity' (p. 195). This was confirmed by Thorpe and Kinsella (2021), who found that this was 'deeply embedded' in the arts teachers' interviews, where teachers reported that increased performative and accountability measures had negatively impacted both their teaching and students' learning.

This was demonstrated in practice in Devaney's (2022) study exploring teachers' pedagogical practices when teaching composition. This study found that teachers were perpetuating certain composing practices in the classroom, with Devaney identifying three myths surrounding composition that still pervaded teachers' practices: that composing ability is the result of inherent musical talent, that composition takes place in isolation, and that rules have to be learned before creativity can happen. She went on to suggest that the teachers in this study were constrained by a lack of pedagogical knowledge compounded by a lack of training on offer and working within the current examination system. She identified many teachers who were complicit within a system they felt was 'flawed and potentially biased' (Devaney, 2022, p. 12).

2.5. Technology and the Performing Arts

2.5.1.   *Educational Technology Background and Context*

This section offers a brief background outlining the relevant context of educational technology more broadly. It first considers the relationship between technology and pedagogy within the design of innovative educational technologies before highlighting some of the current critical education literature around the use of technology and its relationship with data particularly. The next sections then consider educational technology and its uses specifically within a Performing Arts context.

The general HCI perspective is that educational technology can offer many benefits within the classroom, and as such, the focus of educational technology research in HCI is the design, development and evaluation of digital technology within the classroom. Despite the focus on

design and evaluation, HCI researchers suggest digital technology in the classroom is still not commonly used (Pammer-Schindler et al., 2020), and much of the research within HCI in this area is focused on understanding why technology is not better integrated. Zhao (2003) suggests that more often than not, these software tools are not created as 'solutions to pedagogical problems' but in response to problems in business, and then there are attempts to integrate these tools within the classroom.

Although this was in 2003, the current uses of educational technology within the classroom would suggest that this is sometimes the case, although it may differ slightly between software and hardware. Some of the most ubiquitous technologies in the classroom were not developed within school or educational contexts, such as interactive whiteboards, which can be traced back to designs in the early 1990s (Elrod *et al.*, 1992; Greiffenhagen, 2002). These designs often drew on Weiser's vision of ubiquitous computing (Weiser, 1991, 1998), and initially aimed to support office environments. These have since been adapted and adopted into the classrooms through a program of investment and support (Thomas and Schmid, 2010). Thomas and Schmid suggest that one of the characteristics of the early whiteboard projects in the UK was that the introduction of the technology into the classroom preceded substantive research. We have also seen a rise in schools using cloud-based software such as Google Classroom (Perrotta *et al.*, 2021a). However, common to many educational technology solutions, the software and hardware developed were not a specific solution to an educational problem. As such, classroom use has either been minimal or problematic, to generalise in research terms.

More recently, particularly over Covid, research conducted on teachers' use of technology found that 'Microsoft for Education was the most commonly used (mentioned by 63% of school leaders), followed by Google Classroom (40%) and Edmodo (18%). A range of other platforms, namely Schoology, Zoom, Apple Classroom, SchoolWise, Loom, Moodle, Screencastify and Webex, were mentioned by a few (< 10%) respondents' (Scully, Lehane and Scully, 2021). Many of these platforms were developed prior to their use in the classroom, such as Microsoft (originally Microsoft Office), Google Classroom (in its first version as Google Drive), Zoom and Loom. However, in most cases, they have undergone some adaptation to be used in an educational setting. Others, such as Moodle and SchoolWise, were developed specifically as learning platforms. It would seem that although it is not true to say that all

technology integrated into the classroom is designed for use outside the classroom, it is still the case that technologies designed for other contexts are still later integrated.

What is clear, particularly in HCI, is that system design is often done outside the classroom (Song, 2021), and as a result, there is comparatively little understanding or acceptance within HCI of the pedagogical implications of technology integration into the classroom. However, it has been suggested that system design in isolation away from the classroom does not ensure system uptake (Donnelly, McGarr and O'Reilly, 2011). In response, there has been a recent turn within HCI to consider bottom-up approaches to technology design and integration to understand how to create technology that teachers will integrate into their pedagogy; however, it remains a challenge (Pammer-Schindler *et al.*, 2020). Although engaging teachers has become more common, most of this work has focused on involving teachers as stakeholders in the initial stages of the design process rather than throughout (Martínez-Maldonado et al., 2015).

Models such as the TAM (Davis, 1989) focus on understanding how to understand ways of supporting teachers to accept technology are still highly influential and used within HCI (e.g., Park, Nam and Cha, 2012; Cheung and Vogel, 2013; Dele-Ajayi et al., 2017; Scherer, Siddiq and Tondeur, 2019). Scholars have criticised TAM particularly within education; it has been suggested that 'behavioural intention' does not always lead to 'actual' use when examined in long-term observational studies (Selwyn and Grant, 2009). One such model that does consider pedagogical issues is the TPACK model (Mishra and Koehler, 2006) that outlines the ways in which content knowledge, pedagogical knowledge and technological knowledge intersect to understand how technologies can be integrated within the classroom. They point out that 'the incorporation of a new technology or new medium for teaching suddenly forces us to confront basic educational issues because this new technology or medium reconstructs the dynamic equilibrium among all three elements' (Mishra and Koehler, 2006, p. 30). While this acknowledges pedagogies as one of three important aspects of integrating technology into the classroom, most studies that use this framework focus on developing and changing teachers' pedagogies to integrate technology into the classroom. Others have identified barriers to using technology in the classroom, conceptualising them as first-order and second-order barriers (Ertmer, 1999). First-order barriers are considered practical barriers to use, such as lack of access, while second-order barriers are thought to be internal barriers, such as

clashes with pedagogy or teachers' beliefs in the role of technology (Ertmer, 1999). Selwyn (1999) suggests that one factor that plays a significant part in the success of embedding tech into teachers' practices is getting the balance right between ensuring the role of the technology as a learning tool is highly visible while making sure its role as a mediator of subject knowledge renders it invisible.

Classroom orchestration is one aspect of educational technology that explicitly considers teachers' pedagogies (Dillenbourg, 2013). Classroom orchestration within HCI is a term used to consider how a teacher manages 'multilayered activities in a multi-constraints context' (Dillenbourg, 2013). Dillenbourg is clear that it is not a theory but an instructional method (Dillenbourg and Jermann, 2010; Dillenbourg, 2013) and emphasises supporting teachers' roles within the classroom (Roschelle, Dimitriadis and Hoppe, 2013). It encompasses both the ways that digital technology is used to orchestrate the classroom, supporting teachers' practices as well as the ways teachers orchestrate the use of digital technology within the classroom (Song, 2021).

The use of orchestration tools in the classroom has been shown to support teachers in enacting complex pedagogies in a classroom context (Dillenbourg, 2013), and it has been suggested that they are able to support constructivist pedagogies while being suited to the reality of the classroom (Kreitmayer *et al.*, 2013). This has particularly been used when teachers seek to enact these within the constraints of a classroom environment (Dillenbourg, Prieto and Olsen, 2018). Classroom orchestration has suggested three circles of usability: the individual, the group and the classroom (Dillenbourg *et al.*, 2011a). When considered as a 'user' in this way, it is suggested that there are extrinsic constraints that must be considered, such as time, discipline, space, teacher energy and curriculum (Dillenbourg, Prieto and Olsen, 2018), often referred to as classroom logistics (Nussbaum and Diaz, 2013). In this way, orchestration is specifically focused on the micro (classroom) level and does not seek to focus on the wider levels of the curriculum (Dillenbourg and Jerman, 2010). It was initially developed and used in vocational settings, with a particular focus on exploring the role of supporting knowledge construction in practice-based activities (Hämäläinen, 2008). For example, the use of a 'Tinker Table' supported warehouse apprentices use of tangible simulations for practicing the applications of theoretical knowledge to 'authentic problem situations' (Zufferey *et al.*, 2009).

One of the specific ways orchestration has been said to support teachers' practices is by making the invisible visible (Balaam, 2013), and Kharrufa et al. (2013) found that visibility was one of the most important design principles for orchestration tools. In this way, one of the uses of orchestration has been to design and develop learning analytics tools as forms of orchestration (Verbert et al., 2013; Prieto et al., 2014; Rodríguez-Triana et al., 2014; Martínez-Maldonado, 2016). Within the learning analytics field, much of the focus has been on using learning analytics to enhance awareness and visibility and, therefore, support teachers to make 'well-informed decisions' (Tchounikine, 2019). Martínez-Maldonado suggested that learning analytics could specifically be thought of as form of orchestration in the way that they offer support to teachers by presenting data in specific and actionable ways (Martínez-Maldonado, 2019). Others have discussed learning analytics as a form of orchestration (Knight and Shum, 2017, p. 67) highlighting that learning analytics also seek to make students' learning visible in the same way that Balaam (2013) suggests is an identifiable feature of classroom orchestration. Knight and Buckingham Shum (2017) specifically seek to move from 'clicks' (their term for behavioural interactions with digital tools) to 'constructs'—concepts such as creativity or collaboration. Although discussed as an orchestration tool within the classroom context, aligning learning analytics with teachers' pedagogies remains an 'open problem' (Michos et al., 2020a), and there are calls in the field to design learning analytics to align with teachers' pedagogies (Tsai and Gašević, 2017b), specifically the ways data traces can be mapped to higher order constructs. Most commonly, those in the learning analytics field call for increased teacher training around data and its uses in the classroom (Persico and Pozzi, 2015), as it has been suggested that misinterpretations of data by teachers leave the data vulnerable to bias (Slade and Prinsloo, 2013).

Within critical education studies, technology has been suggested as one of the reasons for an increase in datafication in schools (Selwyn, 2015), and alongside the rise of technologies that allow for large amounts of data to be kept and analysed, has resulted in an increase of the amount of data collected about students (Hepp, Breiter and Hasebrink, 2018). In HCI, there has been a rise in conferences such as Computer Supported Collaborative Learning (CSCL) as well as a learning, education and families track at CHI, where the focus is on learning sciences methodologies, with preferences for studies that demonstrate the use of technology to better achieve learning goals (Pammer-Schindler *et al.*, 2020).

Discussions in educational technology often use the language of 'learner' or 'learning', reducing education to something biological and innate and implying that students are now only learners and that learning is the most important aspect of educational processes (Friesen, 2013). To theorise education in this way with a focus solely on learning is to strip culture and human development from education and what naturally follows is a means-end response to ensure efficiency and efficacy (Friesen, 2013). As Selwyn (2010) summarises, a 'learning science' perspective on educational technology now pays close attention to the technical and the social processes of learning with digital technology' and to 'the perceived technological and psychological strengths and shortcomings of individual learners, their tutors, and educational institutions', but is far less concerned with 'the wider social contexts that make up education and society'.

Digital technologies created and tested in the field of CSCL, for example, consider how we can use technologies to infrastructure collaborative learning. In this way, although focused on learning, they are more focused on the social context in which the learning takes place and how students can improve skills such as collaboration or communication. Williamson (2013), however, points out that many of the digital technologies used within the classroom in the name of collaborative learning are what he refers to as 'networked cosmopolitanism'. He uses the idea of the cosmopolitan self (Popkewitz, 2012), which celebrates empowerment, voice and emancipation from traditional habits and attitudes, where 'the cosmopolitan identity … is an autonomous, agential, self-responsible, and empowered lifelong learner who solves problems, has a voice, makes choices, and collaborates through the computer and the internet' (Popkewitz, Olsson and Petersson, 2006). This sense of identity as agential, and a lifelong learner is celebrated and often the aim of much of the CSCL literature (Learning, 2002). The cosmopolitan self is discussed alongside Castells' (2013) discussion of networked individualism, where the individual constructs their cultural world in terms of personal preferences and values. Williamson argues that using technology and networked capabilities leads to networked cosmopolitanism, which embodies an ethic of personal self-improvement. Thus, he argues, offering students the ability to construct an individual world with little social interaction beyond that which they choose and little exposure to social environments they have not chosen to participate in.

With the rise of collaborative tools has come the rise of the use of platforms, but some have raised concerns about this increased use within educational technology, referring to it as 'platformisation' (Nieborg and Poell, 2018; Perrotta *et al.*, 2021a). Part of the concerns raised about the rise in the use of platforms is their part in the growing performativity of schools, as large platforms such as Google are notorious for collecting data (Robertson, 2018). Williamson goes a step further and suggests that the prevalence of platforms in education is 'platform capitalism' (Williamson, 2017a), raising concerns about their role in data gathering to evaluate educational outcomes (Williamson, 2021).

2.5.2. *Technology and the Performing Arts*

Teachers within the performing arts are said to have been the first adopters of technology (Mills and Murray, 2000). Despite this, within the performing arts, little literature considers the use of technology within the performing arts broadly. However, one large-scale study of technology by Wake (2018) looked at two decades of digital technology use in the performing arts, categorising three paradigms of technology use:

- Technology as supplement
- Technology as structure
- Technology as infrastructure.

Where technology is used as a supplement within the classroom, the technology does not seek to restructure the physical space or mode of teaching and learning. For example, work undertaken by Carroll and Cameron (2009) considered the use of mobile phones to explore themes of mistaken identity in a Shakespeare play where anonymous texts were exchanged and drama devised in response. Technology as structure involves technologies used where their use is critical, shifting the site and style of teaching and learning. For example, students creating a performance with their 'digital double', which requires them to consider new ways of working and responding as an alternative to reacting to collocated actors (Oliver, 2012). Technology as infrastructure is that which is 'so deeply embedded the course is inconceivable, let alone deliverable without them' (Wake, 2018); for example, technologies that allow for things such as 'distributed choreography' (Naugle, 2002), 'networked performance' (Birringer, 2002) or 'cyberformance' (Jamieson, 2008). This categorisation is interesting as it suggests a potential for a hierarchy of technology use within the classroom. This has been seen to some

extent within the literature, with Waldron (2017) criticising the use of technology solely to support specific tasks, which they suggest overlooks the wider creative possibilities.

Given the lack of literature that considers performing arts as a holistic context for technology use, the next two sections consider the role of technology within drama and music classrooms independently, as more literature has considered them as separate disciplines and contexts.

2.5.3.   Technology and the Drama Classroom

'if drama education research had a fringe area it might be technology'. (Carroll and Cameron, 2009, p.142)

There is little literature on the use of technology within the secondary drama classroom, and what literature there mainly falls into two broad areas. The first tends to identify times when technology is not often or not 'well' utilised in the drama classroom, with a focus on seeking to understand why it is not well used, while the other explores ways to integrate technology because it is where students are most comfortable or as a tool for engagement.

The issues identified regarding the lack of use of technology have been mainly a lack of 'willingness' from teachers to utilise it within the classroom, with many looking at ways to integrate it. For example, Taylor (1996) reported suspicion of technology from drama teachers in the classroom and Millett (1996), when considering what drama teaching would look like from 1996–2010, found that teachers recognised technology was likely to become increasingly more prevalent, but importantly did not want it to. What was not investigated in this study, however, were the reasons teachers did not want the technology to be more prevalent—including whether this is due to the suspicion of it or something more substantial. Teachers' suspicion of technology has often been attributed to a lack of confidence in using given technologies or institutional barriers rather than explorations of deeper-seated values or beliefs about technology (Ertmer, 1999). Twenty years after these studies, in 2004, Ofsted considered the use of technology in drama and said that 10% of technology use seen in the drama classroom was unsatisfactory and 50% of use was satisfactory (Ofsted, 2004). The categorisation of technology use as unsatisfactory or satisfactory is interesting here as more than just the frequency of use; there appears to be a value judgement on how technology *should* be utilised in the classroom. The Ofsted report was unclear about what constituted a

'good' use of technology other than to say it improved teaching and learning. Research has found that technology can be a 'catalyst to drama's success' (Manser, 1993), also identifying that teachers need time to practice with the technology to be able to use technology in an 'effective way' in drama lessons. Again, the question of the 'effective' use of technology is interesting here as the term is not described. It would seem that the purpose of technology would influence the consideration of 'effective', and as such, defining the effective use of technology to apply to all classroom contexts would be challenging.

Much of the research considering the use of digital technology in the drama classroom has been conducted in Australia, where there is more of a focus on utilising digital technology in the drama classroom from academics following a change in the drama curriculum, specifically stating 'students should have the opportunity to explore different ICTs in their class work' (ACARA, 2000). Research still finds that one of the big issues with technology use in the classroom is teachers' lack of confidence in technology (Flintoff, 2005). While these findings confirm problems of confidence, this does not fully explain the continued lack of use of technology within the drama classroom; if confidence were the issue, then it would seem to follow that if good quality Continued Professional Development (CPD) was offered, then teachers would utilise technology more often within the classroom, yet that does not seem to be the case.

Flintoff (2005), when advocating for technology use in the arts, said engaging in arts activities using emergent technologies provides 'unprecedented opportunities to question and reflect upon our existing understandings' (Flintoff, 2005, p. 2). While this is exciting and offers new opportunities for exploration of theatre within the classroom and beyond—technology use often challenges fundamental beliefs and practices within the performing arts. One particular aspect that presents an interesting challenge is the question of 'liveness'. Drama as a medium is one in which teachers recognise the power of live performance and where perhaps more than this, liveness is an essential aspect of drama. Essential, in this case, is used in the Aristotelian essentialism sense, where essentialism is the belief in the fixed nature of the entity. In this case, when we think about drama, one of the essential essences of the discipline is live performance. Liveness here is defined as 'the presence of living bodies in the present' (Phelan, 2003). The use of technologies has been questioned by Davis (2012), considering whether mediated performances are problematic as it loses this element of liveness. If this is

considered within the drama classroom, where teachers are being asked to use technology, if it does indeed undermine the sense of liveness, it could be said to undermine the essence of their discipline. Anderson, Carroll and Cameron (2009) argue that emerging technologies challenge the basis of the drama education experience, which they define as the live body in a theatrical space.

Carroll, Anderson and Cameron (2006) argue that if we let mediated and live become a dichotomy, then we risk losing young people and audiences as they will seek relevant performance forms as they have been born into a mediated world. This brings us to the other area of technology research within drama education. In this area, much of the rhetoric is about meeting students where they are most comfortable to encourage participation or engagement with drama lessons. See, for example, Anderson (2005), who wanted teachers to take a more proactive approach to integrating technology as they felt students would find other places to express their creativity outside the drama classroom if teachers did not find a way to utilise technology in the classroom. Jensen (2008) encouraged multimodal experiences as they felt that this was what students were used to, and so drama education should integrate technology to offer young people this within the classroom. Much of the literature argues that students are digitally literate or digital natives, and it is on this basis that we should be including technology in the classroom (Prensky, 2001) and, therefore, we should be utilising technology in the classroom to keep them engaged. However, the concept of digital natives has been questioned at length by various authors (Bennett, Maton and Kervin, 2008; Brown and Czerniewicz, 2010; Helsper and Eynon, 2010), and the idea has fallen out of favour with many authors. Firstly, as pointed out by the critiques above, there is a question about whether students really are 'digital natives' as technology ability varies based on a whole range of factors, so the question of technological ability is far more nuanced than to say all young people are digital natives. The distinction made by Prensky (2001) that teachers are 'digital immigrants' may no longer hold true as the teaching profession now includes many who were born in the era of 'digital natives', suggesting that, in fact, we are now in the era where both teachers and students are 'digital natives'.

While we do see two broad areas, in fact those two areas converge with both ultimately seeking to integrate technology in the classroom, ultimately concluding that teachers are not

confident with technology. That technology does not play a larger part in drama classrooms suggests there are more concerns than simply the inability to utilise technology.

2.5.4.   Technology and the Music Classroom

Technology use in the music classroom shares many similarities and issues with that in the drama classroom. The Henley Review of music in 2011 said music technology was 'an area of delivery of music education, which needs a further specialist piece of work' (Henley, 2011, p. 30). In the last 10 years, while there has been some further use of technology, there was a recent call for evidence around technology in music education (Department for Education, 2021b), with a particular focus on technologies that have been effective in delivering music education. As with drama, the literature regarding music technology in the classroom has explored the reasons for the lack of technology implementation in the classroom and the 'ineffective' use of technology. As in the case of drama, it is not wholly clear what is meant by the term 'ineffective', and for the most part, it appears as if effective is an improvement in teaching and learning outcomes. Several broad reasons have been identified in the literature for the lack of implementation or where implementation is 'ineffective', and in most cases, these focus on a lack of understanding or experience on the part of the teacher (e.g., Mroziak and Bowman, 2016; Bauer, 2020) or sometimes teachers' beliefs about technology's relevance and value (e.g., Ertmer et al., 2012).

Music technology use within the music classroom is not a new discussion in either research or practice, and it would seem that in music, there has always been a quest to consider technology use only when it suits the pedagogy of the music classroom. With Paynter commenting in 1997 that 'we are reminded frequently that IT (information technology) is a means, not an end, supporting the quest for genuinely musical activities. Used imaginatively – and, it is to be hoped, free of the unhelpful jargon – this is not IT for IT's sake but rather technology in the service of music' (Paynter, 1997, p. 107). The idea that music technology can be used 'in the services of music' is something that has been challenging, not least because music practices within professional life often now look very different from classroom music.

Most research carried out in this area has sought to understand the current picture of the use of technology within the classroom through questionnaires or interviews with those currently teaching. Various studies have found that when asked about their technology uses, music

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teachers have reported using technology regularly for administrative purposes but do not frequently use it to support music pedagogies (Reese and Rimington, 2000; Ohlenbusch, 2001; Jassmann, 2004; Dorfman, 2008). As with educational technology broadly, many studies suggested that teachers were not familiar or comfortable with the use of technology and, therefore, did not use it within the classroom. Dorfman (2017) suggested that there is a lack of theoretical models that offer music teacher educators and music teachers a way to conceptualise the difficult tensions inherent within music pedagogy and technology. As a result, Dorfman (2008, 2013) advocated for improved teacher training for them to be comfortable with technology use within pedagogy, while Reese and Rimmington (2000) felt that teacher training should emphasise 'instructional uses' of technology within the classroom.

In the US, there has been an increase in the number of schools offering technology-based music classes in the last 10 years (Dammers, 2012). Dammers (2012) found that 14% of schools in the US have computer-based music classes with a wider range of objectives beyond playing from notation for 'non-traditional musicians' who fell outside the traditional ensemble player model of a music student. This has been considered mostly as a way of inclusion and to offer an alternative to the traditional model of music education. Much of the research considering technology use within the classroom has been conducted in the US. While there are obvious similarities in the subject, we should note that the US music education curriculum and pedagogy look very different from the UK model. The US model is based on general musicianship classes, which are infrequently timetabled, while most music classes are specific ensemble classes such as 'band' or 'orchestra' where the instruction is much more typical of extracurricular music here in the UK. Note, the use of music technology as something to widen access for 'non-traditional' musicians or those deemed less able has been echoed in the uses of music technology here in the UK with those who cannot do music often offered Music Technology as a subject (Savage, 2012; Wise, 2018). This creates an interesting hierarchy within music that is not seen in many other disciplines, where music without technology is considered more complex and academic than that involving technology.

With the proliferation of technologically enhanced practices within music, more and more technologies are being created and utilised in the creation and recording of music, and it has fundamentally shifted the ways in which music is consumed and created. The integration of

music technology into music practices within professional life is reasonably advanced, with changes to the ways music is produced and consumed (e.g., the use of music streaming services as well as new digital music desks etc. for producing/recording/mixing music). These advances have not been mirrored in the classroom, however. As with the discussions above about essentialism and the question of liveness, we see similar concerns mirrored in music. Technology use often means changes in the curriculum and pedagogies (Cain, 2004). For example, Odam (2000) points out that technology use in the classroom now means students can compose music they cannot play. While this, in theory, means there are better opportunities for inclusion, this fundamentally changes the way teachers have come to know and understand teaching and learning in the classroom, as performing skills have always influenced composition skills. Music education in the UK has long been focused on the three fundamental aspects of music—listening, composing and performing (Swanwick, 1999). This is a UK-centric delineation of music not found in other countries; however, this is for most teachers so ingrained that changes in these delineations are hard to comprehend. Technology within the music classroom can change the pedagogies and the nature of the music-making itself. Byrne and MacDonald (2002) consider that performances can now be done with music technology, changing how 'performance' is understood as a musical skill. Byrne and Macdonald (2002) also point to the changes in the live performance concept as part of a music course as students are now recorded and sent off to an examiner and the concept of a visiting examiner is no longer central to music assessment. This has meant that one of the fundamental aspects of music, its concept of 'liveness', has gone or certainly changed. For teachers and their use of technologies in the classroom, it would seem that integrating new music technologies can require them to reconsider their practices and beliefs regarding what music is, let alone how to teach it. Technological advances mean programs like dance-ejay (Mellor, 2008) are used regularly in lessons. Teachers have embraced some technology; however, for example, Crow (2005) points out that even commonplace technologies such as keyboards have changed music pedagogies as whole class teaching, together with break-out spaces, used to be much more the norm until technologies began to allow multiple groups of students to be in one room working together. Although not their point, it is clear that some technologies have been embraced in the music classroom, such as keyboards or notation software. Arguably, however, these are not the technologies that require such fundamental shifts in understanding music and its pedagogies.

Technology has been commonly used within composition pedagogies more readily. For example, Devaney (2019) conducted interviews and focus groups with teachers and students in England, finding that teachers were positive about the use of technology for composing and that it has become a central aspect of composing, particularly at examination level. Many students who were interviewed said that technology was a barrier to composition, particularly highlighting the unrealistic MIDI sounds as a factor that undermined their confidence and enjoyment. Devaney was also concerned about some of the uses of technology within composition, suggesting that as a result of accountability measures, teachers felt they had little option but to teach composition in a formulaic manner. She reflected that technology deepened this concern as progress that was not as visible such as self-reflection, deleting ideas or improvising, was observed as less valuable and, therefore, not encouraged as much as inputting notes into the computer.

Wise (2016) conducted research with nine secondary music teachers in 2016 in New Zealand and found that teachers use digital technologies regularly within their teaching, but they tend to use this in a traditional and procedural nature. He suggested that rather than supporting creative practices more widely, the approach to using music technology was to support the procedural understanding of one piece of technology, in this case, Sibelius.

It has been suggested that music technology use has led to a form of hyphenated musicianship, a form of musicianship in which musicians act as songwriters, performers, engineers, recordists and producers in ways that are recursive and overlapping (Tobias, 2012). Tobias suggests that the classroom can support this form of hyphenated musician where classroom spaces are reconceptualised to support a wider form of knowing and doing within music. To support this, they call for hybrid spaces—a computer room, a music room and flexible spaces together with pedagogies that foster collaboration and broader definitions of what it means to be a musician. If we broaden this to the performing arts, and tentatively suggest that encouraging broader definitions of what it means to be a performing artist can only be a positive, it might serve to consider the ways in which technology can be used, as Paynter (1982) suggests, to encourage musical or dramatic practices rather than for its own ends. The current focus on technology use will lead to improvements in the classroom environment or pedagogies, with those in a design role often taking the leading role. Instead of assuming that technology can provide benefits within the classroom, we first need to

examine the underlying infrastructures of technology to understand how they can be harnessed by teachers and, ultimately, whether teachers want to integrate them into their classrooms.

2.5.5. Summary

This chapter described the theoretical framework that guided the thesis, exploring performing arts teachers' practices and beliefs about the secondary performing arts curriculum and the potential role of technology in supporting them to enact their visions of purpose within the curriculum.

The first section explored the curriculum in England more broadly; it first considered current and past work on curriculum theory and structure, how it is conceptualised and then described what this thesis means when using the word 'curriculum'. This thesis uses Priestley's (2019) definition and considers it 'the multilayered social practices, including infrastructure, pedagogy and assessment, through which education is structured, enacted and evaluated'. This conceptualisation of the curriculum includes considerations of the many social and policy impacts on the curriculum and the role of pedagogy as something interwoven within the curriculum. Having defined the use of the term 'curriculum', it then discussed the current model in England, including considering the role of system dynamics that might impact the current curriculum.

The second section considered the curriculum specifically in relation to the performing arts. Initially, it briefly outlined both the music and drama curriculum with a particular focus on its intended purposes within the wider secondary curriculum. It explored how both music and drama curricula have been driven by ideological views of purpose, often leading to conflicting and changing curricula models. It then concluded with considerations of the current policies and practices that have shaped the performing arts curriculum, specifically the impact of Progress 8 and EBacc policies on the inclusion (or exclusion) of the performing arts. It suggested that the conflicting views on knowledge and performing arts' focus on process over outcome had contributed to its decline in English secondary school curricula.

The third section considered teachers' beliefs, how they are derived, and the extent to which they impact on their practices and curriculum. It first explored this more broadly, suggesting

that teachers' practices and beliefs have a substantial impact on the curriculum before specifically considering performing arts teachers. It described that performing arts teachers have been found to have both a teacher identity and a performer identity that can create conflict and impact curricula. It then finally considers how their practices are entangled with the system dynamics outlined in the previous section, suggesting that this entanglement can lead to a sense of 'cruel optimism' for performing arts teachers when they try to reconcile what it means to be a teacher while remaining true to their identity within the performing arts.

The fourth and final section focussed on educational technology and its current role within the classroom. Firstly, it offered a brief background of relevant Educational Technology concepts more broadly, both that found within HCI as well as critical educational technology. It then went on to explore the current literature on the use of technology in the drama and music classrooms respectively finding that in both settings, suggesting that the literature in this area often focusses on external judgements of the 'effective' uses of technology with a view to deeply embedding it within the classroom. It also found that technology use can constrain performing arts teachers' practices given the potential of technology to lend itself to a procedural approach. It would seem then that this could raise conflict with performing arts teachers' practices as it can challenge the very notion of the essential aspects of the performing arts is as a discipline.

Chapter 3.   Methodology
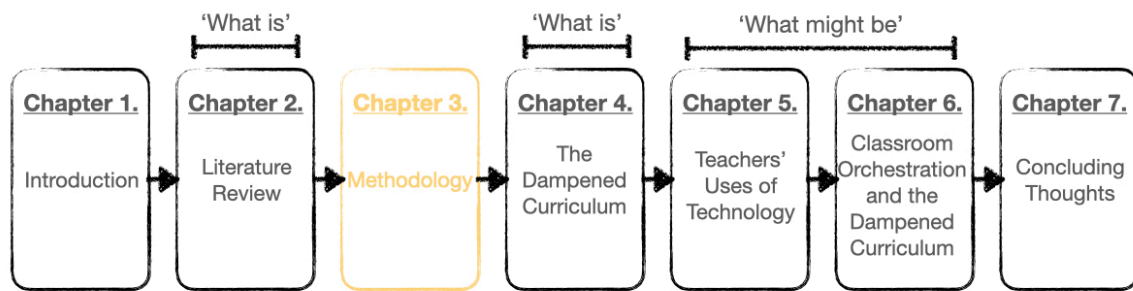
Figure 6*: Thesis Structure (you are here)*

Chapter Purpose: to situate the research, firstly within ontological and epistemological paradigms, before detailing the resultant methodological choices and their suitability for the given research.

3.1. Chapter 3 Overview

This thesis considers the practices and beliefs of performing arts teachers in UK secondary schools and how they shape their delivery of the curriculum. It also seeks to understand the potential of digital technology to shape and subvert the current curriculum and subsequently explores ways that this can facilitate performing arts teachers' delivery of the curriculum in ways that are congruent with their practices and beliefs.

This thesis has two purposes:

- To gain an in-depth understanding of how the curriculum entangles teachers' practices and beliefs within the Performing Arts
- To examine the role of technology in supporting teachers' delivery of the Performing Arts curriculum.

To achieve these purposes, the work was guided by four research questions:

1. What are teachers' current practices and beliefs within the Performing Arts secondary curriculum?
2. How do school-level interpretations of external policy shape the delivery of the Performing Arts curriculum?
3. How does technology shape the performing arts curriculum?

4. What is the potential role of digital technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum?

To achieve these purposes, the thesis takes a critical realist approach, adopting critical participatory action research (PAR) methods to consider the questions outlined above. The thesis reports two studies: the first features interviews with 16 current performing arts teachers to understand their current practices and the impact of school-level policy on these, and the second is a design-led PAR project where three orchestration tools were designed and evaluated to understand the potential role of technology in facilitating teachers' visions of purpose in their enactment of the curriculum.

This chapter outlines the research design in theory, explaining the theoretical and methodological decisions before describing the research design in practice that explains the methods chosen and how they aim to answer the research questions. The final sections describe in detail the participant selection, data collection and analysis for both studies before finally discussing the ethical considerations and quality of data.

3.2. Research Design in Theory

Considerations of both ontology and epistemology are considered central aspects of research and should be made explicit within research (Sousa, 2010) as they underpin most methodological decision-making, particularly in the consideration and use of research methods (Newby, 2014; O'Mahoney and Vincent, 2014). Ontological considerations are those that 'concern the nature or essence of the social phenomena being investigated' (Cohen, Manion and Morrison, 2011), and they play a significant role in the theoretical and methodological perspective of research. Ontological positions are intrinsically linked to questions of epistemology, and most methodological literature argues that particular ontological positions give rise to specific epistemological assumptions (Hitchcock and Hughes, 2002).

Most researchers have a meta-theory that underpins their research, with social scientists commonly adopting one of three metatheories: positivism, postmodernism, or critical realism (Fleetwood, 2005). Positivism and postmodernism are traditionally opposed (Sousa, 2010). Those that take a positivist stance often see the world as a closed system in which cause and

effect are observable, whereas postmodernists view the social world as fully socially constructed. A critical realist approach rejects both positivism and postmodernism, instead differentiating between ontology and epistemology (Bhaskar, 2008). Critical realist approaches assume an ontological realism—that there is an objective ('intransitive') world that exists independently of human actors and their ability to perceive them, together with an epistemological relativism—recognising that knowledge of these objects is socially constructed (O'Mahoney and Vincent, 2014). While social phenomena are socially created, reproduced and transformed, at any given time, the social world is independent of a human's conception of it, as once constructed, these social phenomena gain increasing independence and life of their own over time (Ackroyd and Fleetwood, 2003).

Critical realist approaches are used to understand complex social phenomena, seeing the social world as 'laminated systems' (Bhaskar, 2008; Elder-Vass, 2010) 'whose internal elements are necessarily 'bonded' in a multiplicity of structures' (Bhaskar, 2008, p. 25). Critical realism asserts that there are three domains of reality: 1) the empirical, which describes the reality that is experienced; 2) the actual, to describe the reality that occurs (actual events and entities); and 3) the real, to describe the reality that comprises the underlying mechanisms of society which have causal properties (Elder-Vass, 2008). In this way, we can imagine that society is stratified, that layers of society emerge from the ones below. For example, individuals who experience reality are experiencing that in the context of the actual events that occur, and while there might only be one event, there are likely to be many empirical realities as experienced by people. These events, in turn, happen as a result of the underlying mechanisms of society. Research takes place at both the empirical level, observing and experiencing events, as well as at the real, considering the causal mechanisms responsible for the events and, therefore, the lived experience of those events (Fleetwood and Ackroyd, 2004). Ultimately, critical realism seeks to explain, rather than predict, social phenomena, identifying observable phenomena and seeking to understand the underlying social structures that led to that occurrence (Fleetwood, 2001).
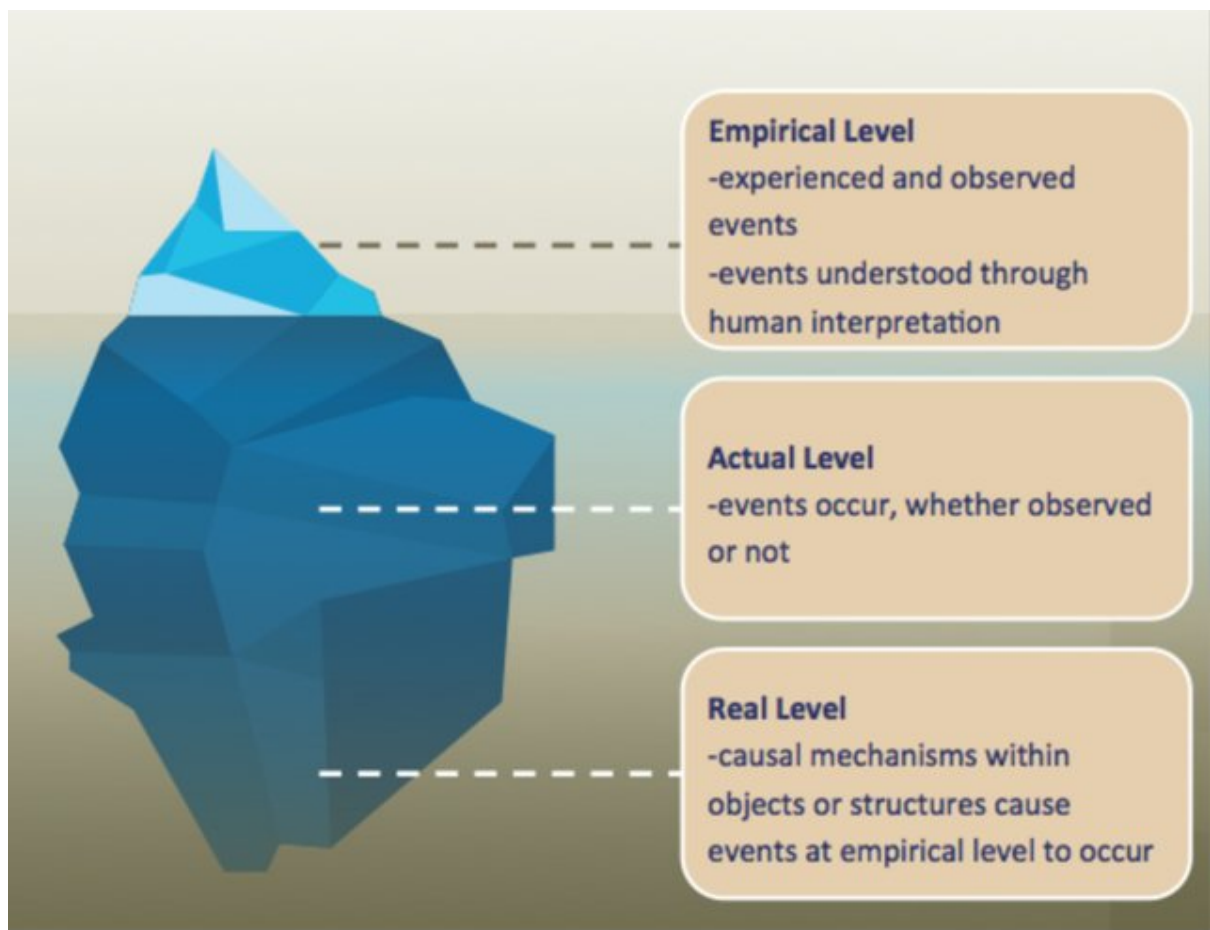
Figure 7: Iceberg metaphor for critical realism (from Fletcher, 2017)

Critical realist research is commonly interdisciplinary, rejecting what Sayer calls 'disciplinary parochialism' (Sayer, 1999) and instead seeks to create understanding through synthesis rather than specialised understanding (Fleetwood and Ackroyd, 2004). Critical realist research is thought to enable sophisticated representations of social worlds, more so than other philosophical positions (O'Mahoney and Vincent, 2014; Fletcher, 2017) as a result of considering empirical findings together with considerations of events that occur and explorations of the mechanisms and structures that contribute to these (Bhaskar, 2013). The resulting research is necessarily explanatory and rich, offering research that is useful and applicable to the real world (O'Mahoney and Vincent, 2014). Critical realists assume (following Kant (1999)) that observation is theory-led or 'conceptually mediated' as all observations of the world are seen through the lens of a pre-existing frame of reference, theory, or belief (Sousa, 2010). This necessarily implies that criticality exists within all layers of the research, which should offer critical explanations of 'what is' together with discussions on 'what might be' (Sayer, 1999). This thesis follows Sayer in their approaches, firstly critically describing

teachers' current practices before going on to explore the design of new digital technologies that offer a way to facilitate those teachers' practices.

Critical realism is entirely appropriate as a meta-theory that guides the methodology of the work in this thesis and the research questions this work seeks to answer for several reasons. First, critical realism has been suggested as a suitable lens to understand the implications of curriculum change (Priestley, 2011). When considered explicitly in the context of curriculum theory and teachers' practices, we can see that teachers' practices are those at the empirical level which we can see and which teachers experience. Those practices are in turn shaped by events at the actual domain of reality, such as changes to curriculum policy, policy that was created as a result of underlying mechanisms at a societal level, which in this case is social policy and governmental structures. The exploration of all three levels allows us to understand the implications of curriculum change on teachers' practices by separating the change as experienced in the classroom from the policy itself.
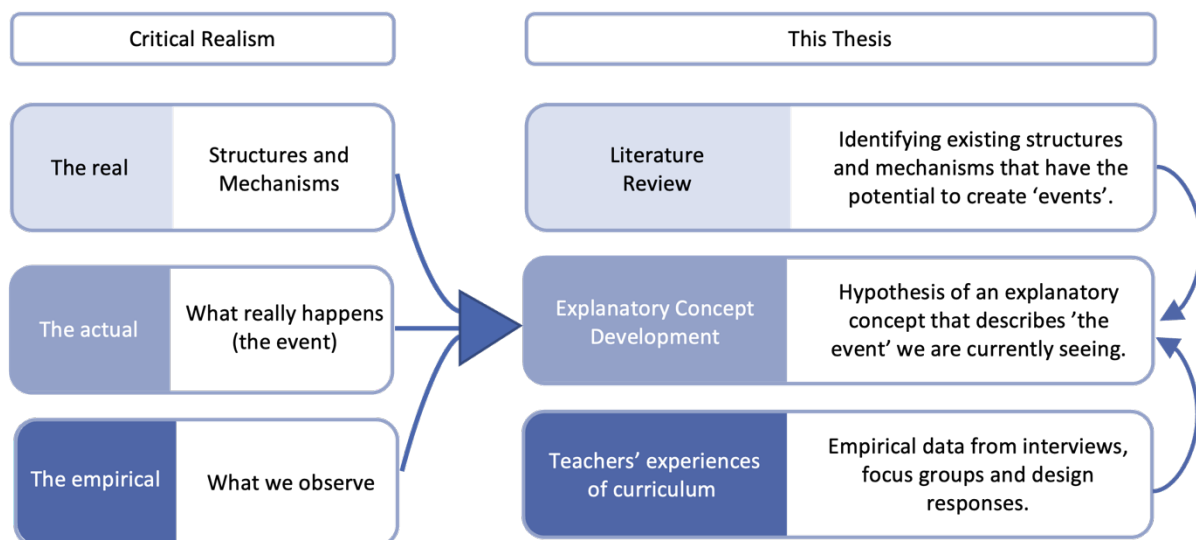
Figure 8: Critical Realism as applied to this thesis

The research in critical realism is undertaken at both an 'abstract' level, considering both entities and mechanisms, and at a 'concrete' level of observed or experienced events (Sayer, 1992). Taking a critical realist approach to the research supports the exploration of both existing teachers' practices as they are experienced and understood by the teachers themselves, as well as the underlying structures and mechanisms that led to these teachers' practices and experiences. Chapter 2 (Literature Review) explored the role of system

dynamics, which can be considered mechanisms acting on the curriculum within a critical realist framing. These causal mechanisms were identified from existing research describing and conceptualising existing social structures, with the understanding that these mechanisms operate at the 'real' level, meaning they have been defined and observed to exist and to function in the current social structures, whether or not participants in the research observe them.

In this thesis, the 'actual level' of critical realism is the consideration of the 'dampened curriculum' as an explanatory concept (described as a potential causal mechanism) that can describe the events that teachers describe within the empirical level. Theory and research in critical realism work together in a spiral-like approach to the link between theory and evidence, with suggested causal mechanisms posited that are later explored to determine whether these mechanisms can be demonstrated empirically (Sousa, 2010). These suggested causal mechanisms are often used to create hypotheses about generative structures, which, according to Bhaskar (1979), 'can be tested quite empirically, although not necessarily quantitatively' (p. 62). The empirical level of critical realism is the exploration of events as they are observed (Sayer, 1992). Following other critical realist scholars, such as Fletcher (2017), events were observed at the empirical level using in-depth interpretive data obtained through semi-structured interviews as well as ethnographic methods in the form of co-teaching (Nicholson *et al.*, 2022). The application of these methods is discussed in greater detail in section 3.4.1 and 3.4.2.
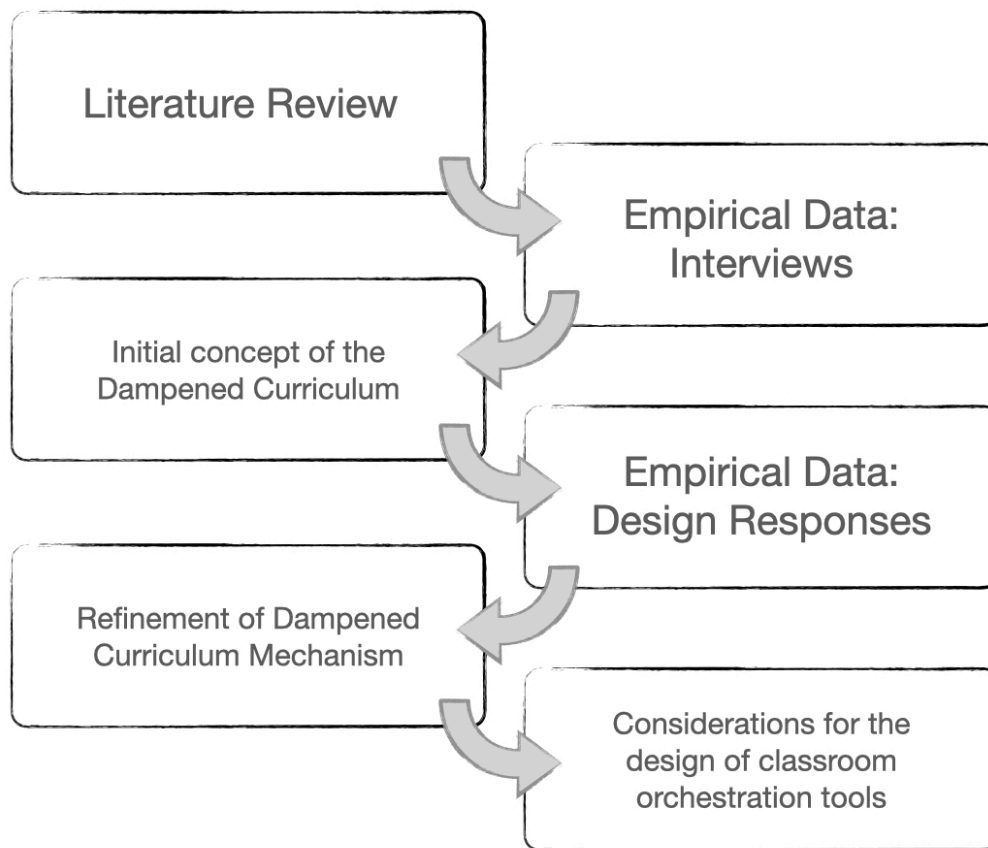
Figure 9*: Structure of theory and empirical data*

Having methodologies informed by critical realism affords researchers a large amount of freedom to choose the specific methods that will best answer their research questions, and consequently, a large number of methods are used within critical realist research. Like its realist counterparts, this research is 'intensive' and often seeks 'triangulation' (Sayer, 1992), encouraging the use of a range of methods to ensure that the social phenomena are understood and conceptualised. Critical Realist researchers use a variety of methods, depending on the specific approach taken in the research. Table 2 demonstrates a large range of research methods used within critical realism that offer different approaches to data collection, depending on whether it is detached or engaged and whether they are seeking intensive to extensive methods.

Table 2: Critical Realist Research Designs (Vincent and O'Mahoney, 2018)

	Intensive →Extensive			
	What is the mechanism?	*How do context and mechanism typically interact?*	*How do context and mechanism historically interact?*	*What is the context?*
Detached	Case study	Comparative case study	Institutional / historical analysis	Surveys
Engaged	Action research	Intensive realist evaluations	Barefoot research	Extensive realist evaluation

In seeking to best describe social phenomena, critical realists encourage the use of metaphors and analogies in theorisation and explanation (Sousa, 2010), which is something followed within this thesis. The use of a metaphor to describe the Dampened Curriculum, which is intrinsically linked to performing arts, allows us to offer rich descriptions of the resulting social phenomena in a way that can contribute to conversations in both theory and practice.

3.3. Research Design in Practice

This thesis takes an intensive and engaged approach to critical realist research, focusing on a narrower and more in-depth understanding of the mechanism and its context. As such, it draws on critical PAR to answer the research questions, following the categorisation of research designs by Vincent and O'Mahoney (2018) outlined in Table 2. As a result of taking an intensive and engaged approach, it does not use surveys as this would be more appropriate in a detached and extensive approach to critical realist research.

In taking an intensive and engaged approach to the research, this thesis carries out critical realist research (Vincent and O'Mahoney, 2018) within an explicitly qualitative research paradigm, sometimes referred to as 'big Q qual' (Kidder and Fine, 1987). This refers to qualitative research that is interested in the messiness of real life and involves 'thinking qualitatively' (Braun and Clarke, 2013, p. 35). 'Thinking qualitatively', according to Braun and Clarke (2013), is to understand that research is a culture and different cultures exist within different paradigms (p. 35). They go on to say that a qualitative research culture differs from quantitative culture, moving away from the use of positivist language, such as objectivity, bias

and significance, and towards using alternatives to the scientific experiment within research. Qualitative research cultures, in comparison, value subjectivity and reflexivity (Hollway, 1989; Fine, 1992) and share an understanding that research does not provide one single answer (Braun and Clarke, 2013). Even within qualitative research, there is more than one approach with experiential qualitative research that prioritises participants' interpretations, while critical qualitative research (which this thesis undertakes) interrogates the data, seeking to understand the ways language 'gives shape to social realities' (Braun and Clarke, 2013, p. 25).

3.3.1. *Participatory Action Research*

PAR builds on earlier action research approaches and methodologies which are rooted in the work of Lewin (1946) who saw action research as a way to bring about change by working with people who were within a particular social context. Action research sought to explore social change through a 'spiral of steps, each of which is composed of a cycle of planning, action and fact-finding about the result of an action' (Lewin, 1946, p. 38). It has always had political undertones, with both Lewin and Collier interested in action influenced by democratic processes (Collier, 1945; Lewin, 1946). Action research focuses on knowledge developed in a specific context directly into action that, in turn, shapes social structures and practices (Collier, 1945).

Action research commonly falls into three types: scientific-practical, practical-deliberative and critical-emancipatory (McKernan, 2013). Scientific-practical action research is more common in the field of Computer Science generally—where truth and reality are thought to be measurable, and the knowledge produced as a result of the action research is predictive and generalisable (Hayes, 2014). Social science uses of action research are more often either practical-deliberative or critical-emancipatory. Practical-deliberative are those which seek to identify and solve local problems, whereas critical-emancipatory action research promotes a kind of consciousness-raising that seeks to empower partners to identify and contemplate problems they may not have noticed themselves.

This thesis takes a critical-emancipatory view of action research, considering the research a form of consciousness-raising, a view that draws on ideas of critical pedagogy (Freire, 1970). This project seeks to understand both what teachers' current practices and beliefs are as well as understand the role technology can play in shaping practices. In this way, it was necessary

to consider action research from a critical-emancipatory view as it would allow for research that explored and encouraged changes in teachers' practices as a way of understanding the role of technology.

Action research in HCI, and relatedly PAR, are considered a philosophical approach to research, one that sits in a post-positivist position and seeks to understand praxis (the intersection of practice and theory). Action research, as defined here, draws from the work of Lewin (Lewin, 1946, 1948) extensively and places the emphasis on cyclical processes of design, development, evaluation and analysis. In descriptions of action research in HCI, it is seen as epistemologically constructivist in its approaches to knowledge, with the understanding that knowledge evolves and is produced inherently by social processes and not a set of objective truths (Hayes, 2011).

Action research within HCI as a discipline is seen as 'a series of commitments to observe and problematise through practice a series of principles for conducting social enquiry' (McTaggart, 2003), one that is 'democratic, collaborative, and interdisciplinary' (Hayes, 2011). Action research seeks highly contextualised, localised solutions with the emphasis on transferability of findings over generalisability (Hayes, 2011). While action research within HCI draws on a multitude of methods to explore and address a problem or challenge, what is key to the understanding of action research in an HCI context is that it includes participants as co-researchers throughout the process with the aim of creating a 'helpful and sustainable' result (Hayes, 2014).

Action research, and subsequently PAR, have, since their initial conception, been regarded as suitable methodologies for research projects that explore the curriculum (Elliot, 1991), with many arguing that these methods are necessary to ensure that teachers are placed at the centre of curriculum and pedagogical reforms (Stenhouse, 1975). These early projects focused on reflection, experimentation and dialogue as a way of changing practice (Elliot, 1991), with Elliot arguing that this approach allowed a way of bringing together theory and practice as a basis for curriculum and educational reform (Elliott, 2006). Early uses of action research in education sought to understand how teachers could implement a new humanities curriculum and explored how individual teachers could understand their practice to adapt and implement the curriculum (Stenhouse, 1975).

The specific origins of PAR in education are difficult to define (Kapoor and Jordan, 2009). There are suggestions that it was partly a reaction to criticisms of the way action research had started to be utilised in educational research. Kemmis (2008) argued that action research had ended up being used as a specific method of research, rather than a philosophical approach and pointed to a lack of dialogue within action research as a process. PAR preferences the social and argues that practices are intertwined with social contexts and relationships with others. Kemmis (2008), therefore, suggests that enquiries into one's practices should include social conditions and relationships.

As a result of the focus on social conditions and relationships, critical PAR as an approach is interested in *actual* practice rather than the ideas of practice in the *abstract*. As such, it encourages enquiry that might be seen as 'mundane and mired in history' (Kemmis, McTaggart and Nixon, 2014). It seeks to understand the current state of the world and is rooted in the current everyday world of practice while understanding that history has shaped those practices. Kemmis, McTaggart and Nixon (2014) argue that critical action research offers a way of avoiding some of the philosophical and practical dangers of idealism, which tends to consider practice in the abstract as a way of transcending history in the search for the ideal solution. Critical action research seeks to remain in the current context, considering the practice as it is and with the awareness of the realities of the social context.

Critical PAR, then, is a method that allows for observation of teachers' practices both at an empirical level, that which is experienced in the classroom, as well as exploration of the ways in which social and educational practices are produced by cultural, economic and social-political circumstances that are relevant in a particular moment in history (Kemmis, McTaggart and Nixon, 2014). It is well suited to research that takes a critical realist stance, as it seeks to understand how practices are reproduced in a given context as a result of the current circumstances and participants' responses to them (Kemmis, McTaggart and Nixon, 2014). It is influenced by Habermas' ideas of public spheres (Habermas, Lennox and Lennox, 1974) in its conceptions of spaces that allow for the enacting of participatory action. Kemmis and McTaggart (2000, 2005) use 'communicative action' to describe what happens when people start to ask, 'what is happening here?', suggesting that this opens spaces to start dialogues about practice, how it is enacted and the consequences of these practices.

When used as a methodology for considering practices, critical PAR assumes that if 'current practices are the product of one particular set of intentions, conditions and circumstances, then other (or transformed) practices may be produced and reproduced under other (or transformed) intentions, conditions and circumstances' (Kemmis, McTaggart and Nixon, 2014). In this way, critical PAR can be viewed as a social practice – one which seeks to change other social practices (Kemmis and McTaggart, 2000). Critical action research considers 'the nature and consequences of our practices, our understandings of our practices and the conditions under which we practise' (Kemmis, McTaggart and Nixon, 2014). Critical action research seeks to close the gap between theorist and practitioner to reach a point where practitioners are theorists and theorists are practitioners and ask, 'whose theories and whose practices is the alleged gap between?' (Kemmis, McTaggart and Nixon, 2014, p. 25).

Taking a critical realist approach to action research means working with participants to engage in reflexive questioning about practices at the empirical level, considering how both events at the actual level and structural influences at the real level may have impacted their classroom practices. Action research can then be viewed as a dialogical process that allows participants to enact changes in their social world through collectively organised action (Pearson, 2021). This research uses this as it seeks to understand both the current state of the performing arts curriculum and teachers' practices, as well as 'what might be' by co-designing digital technology as a way of supporting teachers' practices.

3.4. Research Projects and Settings

To answer the research questions, mixed methods were used in two research projects to understand each of the research questions. Table 3 outlines the research projects carried out and how the data were used to answer the research questions.

Table 3: Research Questions, Methods and Data

Research Question	Study	Methods	Data
RQ1: What are teachers' current practices and beliefs about the Performing Arts secondary curriculum? (TP1)	1. Literature Review 2. Teachers' Interviews	Interviews	Interview transcriptions
RQ2: How do school-level interpretations of external policy shape the delivery of the English Secondary Performing Arts curriculum? (TP1)	1. Literature Review 2. Teachers' interviews	Interviews	Interview transcriptions
RQ3: 1. How does technology shape the English Secondary Performing Arts curriculum? (TP2)	1. Teachers' interviews	Interviews	Interview transcriptions
RQ4: What is the potential role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum? (TP2)	1. Gig Academy project	Action Research	Interview transcriptions Photographs Videos Students' work Fieldnotes

Two research projects were carried out to answer the research questions, each using methodologies best suited to answering the specific research question. The setting and details of the projects, interviews with teachers and the Gig Academy project are explained individually in sections 3.4.1 and 3.4.2.

3.4.1.   Interviews with Teachers

As discussed in section 3.2, this thesis used interviews to explore the empirical layer within a critical realist approach (Sayer, 2004). It is important here to consider the definition of empirical that is used within this thesis moving forwards. This thesis follows established

qualitative research practices that consider interviews a form a qualitative data. According to the *Sage encyclopedia of qualitative research*, there are several sources of qualitative empirical data, such as 'observation, interviews, analysis of cultural and archival records, visual methods, autoethnography, data management and analysis, techniques, computer-assessed analysis, focus groups, applied ethnography, and conversation and cultural analyses' (Given, 2008, p. 254). It is agreed that 'All of these approaches address the central goal of empirical research – to observe phenomena in the social world to generate knowledge about these phenomena' (Given, 2008, p. 254).

Others, such as Denzin, suggest there are two main, but distinct types of empirical materials in qualitative research: interviews and naturally occurring materials (Denzin, 2008). In this thesis, interviews specifically are used as a method for empirical data collection that allows one to 'reach areas of reality that would otherwise remain inaccessible such as people's subjective experiences and attitudes' (Peräkylä and Ruusuvuori, 2008, p. 869). This understanding of interviews and their role within qualitative methods mirrors that of critical realist scholars who also regularly use interview methods with participants to collect data at the empirical level (Fletcher, 2017). This was discussed in more detail in section 3.2.

To understand teachers' current practices and beliefs regarding the performing arts secondary curriculum and to answer RQ1 and RQ2, semi-structured interviews were conducted with teachers of performing arts (music and drama) in UK secondary schools.

The aim was to understand teachers' own practices and beliefs, so a method was necessary that sought to give preference to teachers' own experiences. Semi-structured interviews were used as it allowed for a level of replicability between interviews that meant interviews were comparable between participants as the aim was to understand teachers' collective feeling about the curriculum and how their practice was affected the ways in which they enacted it. It was important not to completely structure the interviews, however, as it was key to ensure there was time and space within the interviews to explore aspects of the participants' practice I had not considered or that they felt was important. In this way, the interviews were informant, allowing the participant to partially set the agenda(Powney and Watts, 2018).

In 2019, Ofsted announced arguably radical changes to their inspection guidance (Ofsted, 2019) and asked all schools in the UK to ensure a renewed focus on the curriculum. The new

guidance placed a renewed focus on the curriculum in future inspections and outlined their commitment to ensuring 'high-quality curricula for all' (Ofsted, 2019). This meant that schools were asked to consider intent, implementation and impact. This led most schools to redesign their curriculum offer in response to these guidelines with an increased focus on curriculum sequencing and how they measured impact. Teachers across the UK were asked to prepare for 'deep dives' conducted by Ofsted inspectors that sought to understand how particular subject areas had chosen to ensure that their curriculum was 'ambitious' and gave learners 'the knowledge and cultural capital they need to succeed in life' (Ofsted, 2019). These changes meant there was a renewed interest and consideration of the curriculum in almost all schools in the UK as a response, and it is within this landscape that these interviews were conducted. It is also important to note that at the time of these interviews, the UK was in a national lockdown, and teachers were teaching remotely from home, finding new ways to alter and adapt their curricula to ensure they could teach online. Teachers were not asked directly in these individual interviews about the pandemic or the impact on their practice and the curriculum but were asked to reflect on the performing arts curriculum more broadly. In particular, they were asked when discussing the curriculum to consider the curriculum they had designed and implemented when they could teach in person rather than remotely. It must be acknowledged, however, that the circumstances the UK were facing at the time may have affected some of the answers and reflections on the curriculum and its practices.

Participant Recruitment

Participants were recruited through existing links with organisations that support performing arts teachers, both in the North East of England and further afield. A recruitment website was set up with details of the study and the qualifying criteria participants needed to have (that they taught either music or drama or performing arts and currently taught in a UK secondary school). Recruitment emails were sent to mailing lists from four organisations supporting teachers—Open Drama, Music Partnership North Northumberland, Music Partnership North, Newcastle and Music Partnership North, and North Tyneside—with links to this website. This website included the information sheet and consent form, so participants could make an informed choice about whether they wanted to participate in the research. Although organisations sent the recruitment information out to potential participants, they were not acting as gatekeepers as they did not remain involved beyond sending details of the call for participation. The organisations were not aware of who had responded to the call, nor were

they involved in the research carried out. Participants who opted into the research completed a form linked from the website with their name, email address and the subject they taught.

Participant Selection

Participants were only selected for interview if they currently taught either music, drama, or both in a UK secondary school. Some participants taught other subjects as well as one of music or drama, such as dance, but all participants taught at least one of either music or drama. All participants who responded to the call for participation were selected as they all met the qualifying criteria. There were 25 responses from teachers (six who taught drama and 19 who taught music). Of these 25 teachers, 16 participated in the final one-to-one interviews (10 of whom taught solely music, four who taught solely drama, and two who taught both). The teachers had a range of teaching experience (3–26 years) and held various leadership roles in the school (ranging from head of department to director of Performing Arts).

Table 4: Participant Information for Interviews

Identifier	Subject	Years in Teaching	Role Within School
Music T1	Music	20 years	Teacher of Music
Music T2	Music	20 years	Director of Performing Arts / Head of Music and Music Tech
Music T3	Music	13 years	Head of Department
Music T4	Music	9 years	Teacher of Music
Music T5	Music	3 years	Teacher of Music
Music T6	Music	14 years	Head of Music / Arts Coordinator
Music T7	Music & Drama	14 years	Teacher of Music
Music T8	Music	4 years	Teacher of Music
Music T9	Music	4 years	Teacher of Music
Music T10	Music & Drama	4 years	Head of Performing Arts
Music T11	Music	5 years	Teacher of Music
Music T12	Music	26 years	Teacher of Music
Drama T1	Drama	13 years	Teacher of Drama
Drama T2	Drama	20 years	Head of Drama
Drama T3	Drama	8 years	Head of Performing Arts
Drama T4	Drama	25 years	Head of Performing Arts

Data Collection

The interviews were semi-structured, and each lasted between 60 and 90 minutes and took place within an eight-month period from July 2020 to February 2021. They were all conducted over Zoom and recorded through the platform before being transcribed and analysed. As an example, the schedule was structured so that there were main questions (the ones in bold) asked to all participants, with several sub-questions to be used as prompts if necessary. These sub-questions varied, and flexibility was used with the sub-questions depending on the participants' answers to the top-level question in each case.

Two example questions:

Can you talk me through your school's music curriculum?

>   Why is it designed in this way?

>   Did you have specific aims in mind when designing the curriculum?

Can you talk me through how you implement that curriculum in the classroom?

>   What pedagogies do you use in the classroom (e.g. group work/project work etc.)

>   Do you choose the pedagogies, or are they decided as part of the curriculum design?

The full interview schedule can be found in Appendix C.

Data Analysis

The interviews were transcribed and then reflexive thematic analysis (Braun and Clarke, 2013) was carried out to look for common themes across the participants. The first stage of the analysis followed the steps outlined in Braun and Clarke (2013): familiarising self with the data, generating initial codes, searching for themes, reviewing potential themes, defining and naming themes, and producing the report. Reflexive thematic analysis has been used in critical realist methodological approaches as it allows access to 'situated, interpreted realities, not simple, decontextualised truths' (Braun and Clarke, 2022, p. 171). A third-party transcription service transcribed the interviews verbatim (Halcomb and Davidson, 2006). A third-party service was used to ensure the accuracy of the transcriptions. The familiarisation with the data then began with reading the transcriptions, making notes and highlighting where the findings were related to the system dynamics outlined in Chapter 2 (Literature Review).

In the initial familiarise self with the data phase, the interviews were read several times to begin to understand the data that had been collected. Once familiar with the data, the next

step was to generate initial codes which was done at sentence level (Braun and Clarke, 2022). These codes were both latent (researcher-driven) and semantic (participant-driven) in nature (Braun and Clarke, 2022). This allowed for both the understanding of participant experiences at the empirical level (Vincent and O'Mahoney, 2018), through the semantic codes that offered clear understanding of participant experiences, as well as the initial understanding at the actual level through the latent codes, which support the critical analysis of the data in relation to the identified system dynamics. This mixture of semantic and latent coding allowed for the required flexibility to ensure that the codes and themes that were developed and reported accurately reflected the teachers' experiences as well as the necessary critical analysis needed within a critical realist approach (Fletcher, 2017). The coding at this stage was done by hand; the transcripts were printed, and quotes were highlighted and annotated with codes.

These codes were transferred to Miro (see Figures 10–13), with one code per 'sticky' added to a central board. These were then grouped to form themes that were common across the interviews. This process was iterative, comparing the themes created by grouping codes to the interview transcripts to ensure they were representative of the participants' experiences. This was done digitally to facilitate the iterative process, allowing the codes to be dragged and dropped in various configurations until themes were finalised.
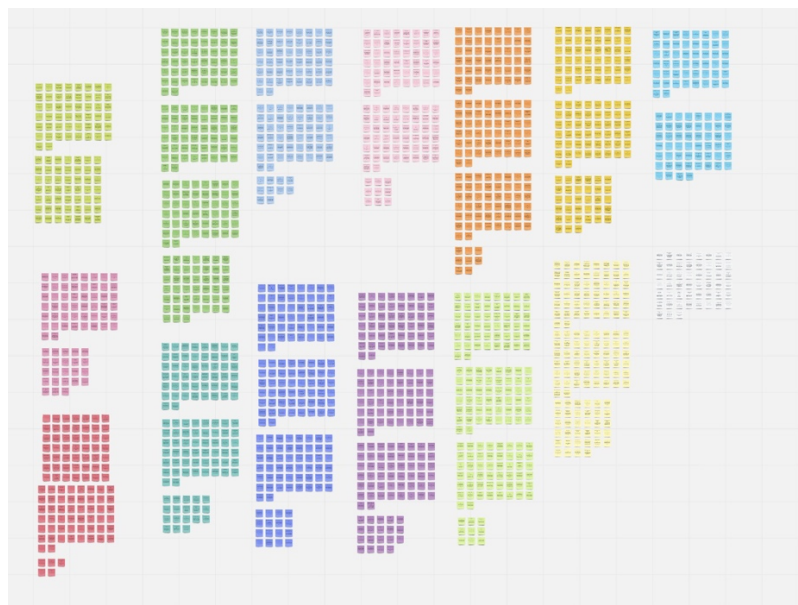
Figure 10: Codes transferred onto Miro
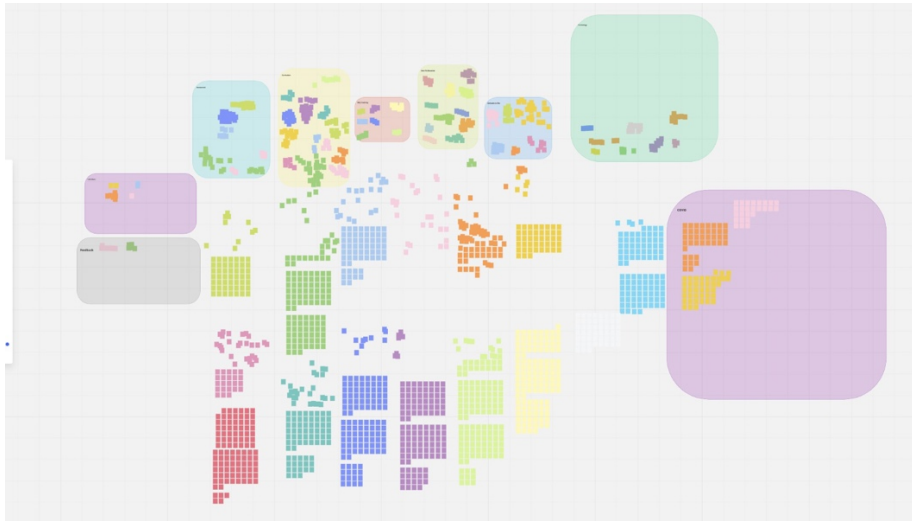
Figure 11*: Initial theming of codes*
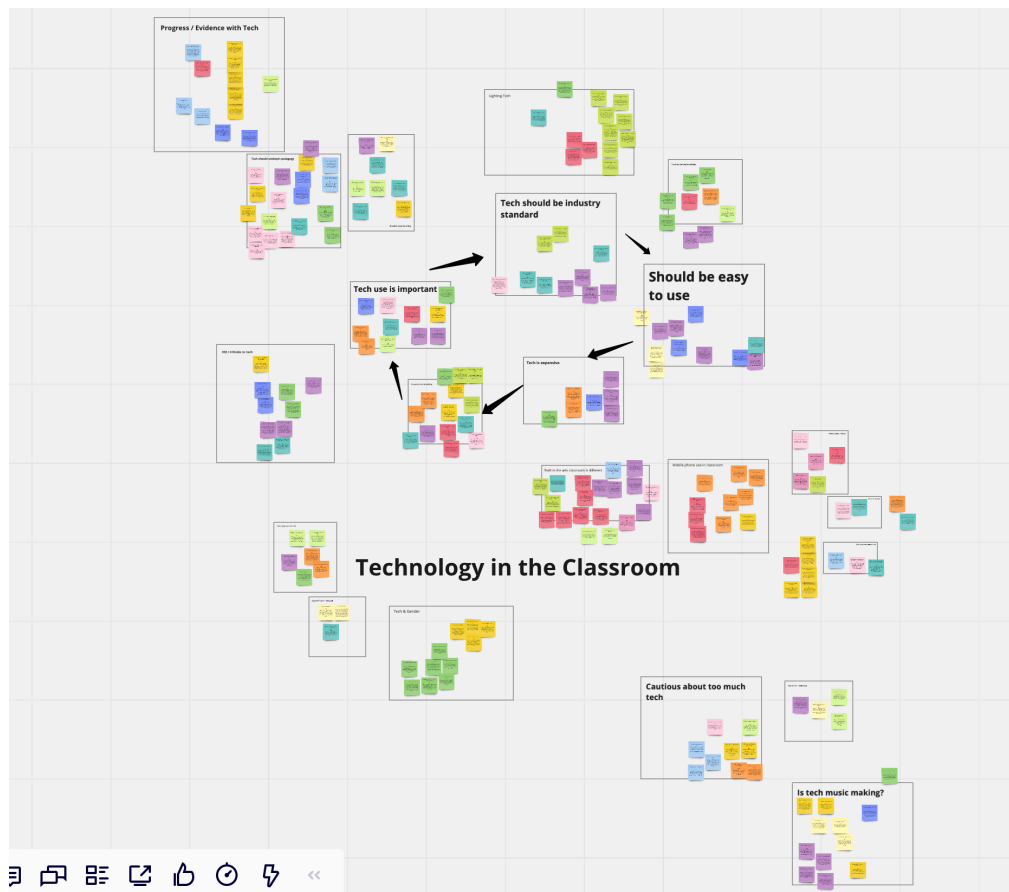
Figure 12: Example 1 of final themes

Figure 13*: Example 2 of final themes*

These themes were then organised and presented first, with themes relating to teachers' beliefs presented first, which were mainly semantic, before themes relating to their current practices, which were a mixture of latent and semantic to understand the potential impact of school-level policies on teachers' practices. The themes are outlined in the thematic map (Figure 14), following reflexive thematic analysis best practice (Braun and Clarke, 2022). The thematic map presents the themes in Chapters 4 (coloured blue) and 5 (coloured pink).
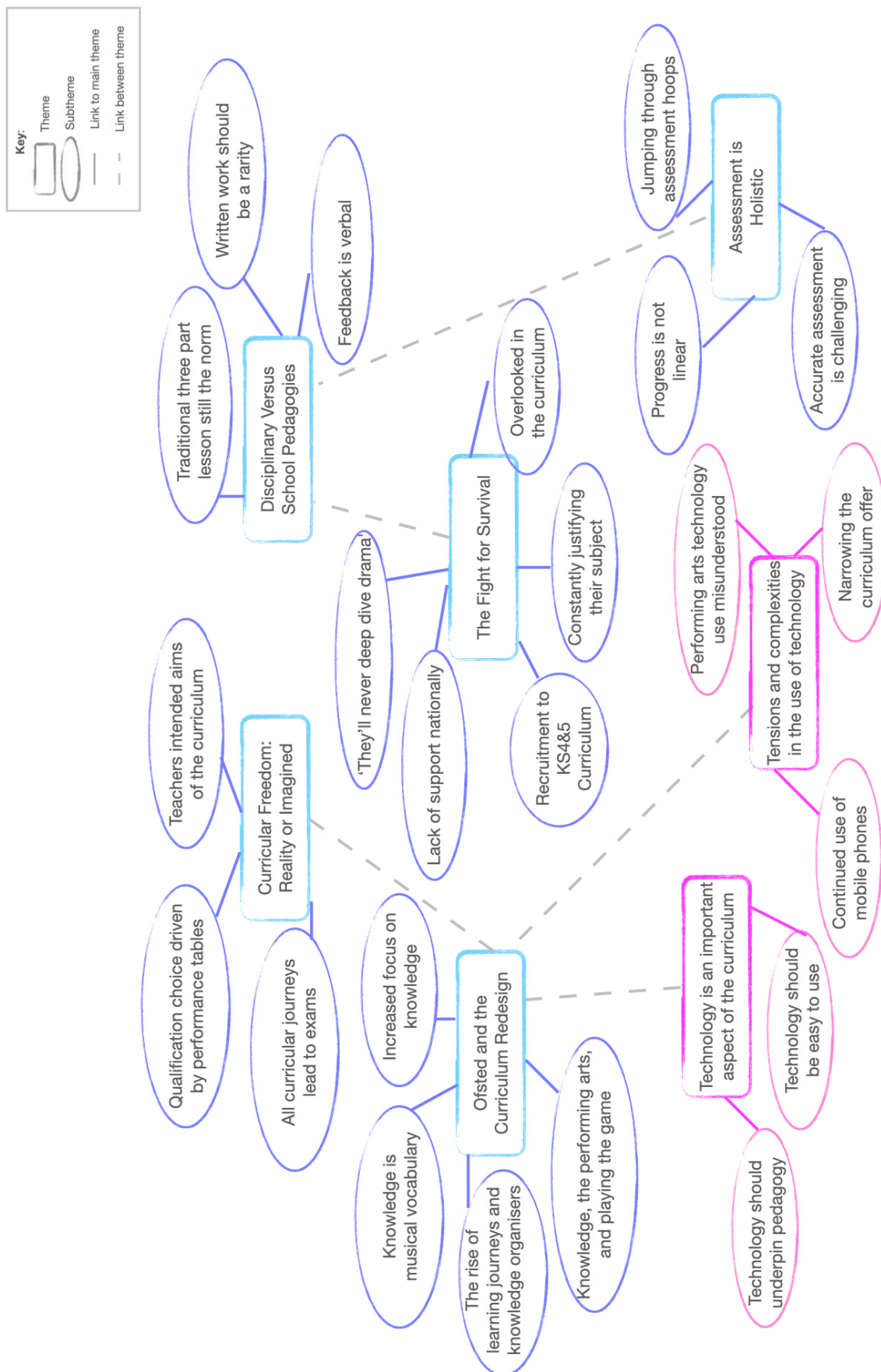
Figure 14: Thematic map

3.4.2. Gig Academy Project

This study sought to understand the potential role of technology in supporting teachers to enact their ideas of purpose in the curriculum. In this way, it aimed to understand what could be, aligned with one of the aims of critical realist methodologies (Sayer, 1999). This study used critical design ethnography as a method as it supports the design of curriculum interventions alongside taking a critical approach to observing and reporting teachers' uses of these designed interventions.

Critical Design Ethnography

Critical realism seeks to find 'practical adequacy' over absolute truth (Sayer, 2004). Knowledge in critical realist research follows that of realist scholars and is gained through both practical interventions and human interaction and communication (Sayer, 1992). In this way, design-led practices, while initially appearing to draw on a pragmatic paradigm of research, can be used with success within critical realist research (Johnston and Smith, 2010). Designed artefacts can be used as prompts at the empirical level as observing participants' interaction with these artefacts allows for empirical observations of practice.

Critical design ethnography is an ethnographic process that involves participatory design work with the aim of transforming a local context while producing a design that can be used in multiple contexts (Barab *et al.*, 2004). In this way, it draws its approaches and aims from critical ethnography, design-based research, and action research. In contrast to traditional ethnographic work, in which the researcher typically seeks to understand the conditions of the community being studied, in critical design ethnography, the researcher seeks to facilitate social change by empowering the participants they are co-designing with (Barab *et al.*, 2004). This approach has been classified as a form of action research with its iterative nature and similar intent to support social change (Barab *et al.*, 2007). In this approach, the research assumes a critical stance in analysing the data and using this to generate or augment theory (Barab *et al.*, 2007).

Critical design ethnography was used as the method to explore what could be in the second study of this thesis as it gives an opportunity to co-design digital technology interventions, use them in a specific context and then evaluate this using ethnographic methods to observe the teachers' practices when using the designed digital technologies.

To understand critical design ethnography as a methodological choice, design research and ethnography are considered briefly to understand the stance that critical design ethnography takes.

Design-based research asks similar questions to critical realism, as it looks to understand change at the empirical level but also considers 'generative mechanisms' to understand why the intervention produces that outcome (Van Aken, 2005). It often concentrates on the generation of theory and refinement of context-based practice (Van Aken, 2005). When used within critical realist approaches to research, it allows for a form of research that is comfortable in working in the empirical domain of reality to effect change while using the resulting findings to refine theories. A critical realist approach to research is one in which context is everything, as mechanisms and events cannot be isolated from their context (Pawson, Tilley and Tilley, 1997). While drawing empirical findings from methods that preference participants' knowledge and understanding, it also seeks to understand the causative mechanisms, something only possible when considering research in each context. Design-based research as a method is specifically context driven in its practices and methods, often characterised as context-specific, collaborative and focusing on theory refinement and local impact (Collective, 2003). It often engages in 'conjecture mapping', considering the complexity of external factors and their possible impact on the designed elements of the artefact (Sandoval, 2014). Such conjecture mapping encourages the separation of the empirical reality as observed in the interactions with the designed artefacts and that of the underlying causal mechanisms of society.

Ethnography typically seeks to offer a detailed or thick description of a particular context by observing a particular location or setting (Geertz, 1973). It often seeks to explain and understand social behaviour and places particular importance on situated meaning and contextualised behaviour (Pole and Morrison, 2003). Ethnography is a frequently adopted approach in educational research as a way of understanding the practices and behaviours of both teachers and pupils (Pole and Morrison, 2003). Critical ethnography has evolved out of the ethnographic tradition as an 'openly ideological' form of research (Lather, 1986). Critical ethnographers use the practices of ethnography to understand social behaviour while drawing on social theory to analyse and explain their findings (Anderson, 1989). It remains heavily

influenced by critical theories' emancipatory goals and, as such, remains theory-driven (Anderson, 1989).

Design and ethnography have a longstanding relationship, with ethnography used in various ways to complement and enhance design-based research. Baskerville and Myers (2015) suggest three main uses of ethnography in information systems research: ethnography *for* design, ethnography *to* design and design ethnography. In their distinction, ethnography for design uses ethnography to understand the context to gather specific and detailed design requirements. Ethnography to design considers ethnography as a way to understand the design process, focusing the ethnography on the designers themselves. Finally, design ethnography uses ethnographic methods to describe the results of designed interventions in each context. In education, specifically, this has further been built upon in critical design ethnography (Barab et al., 2004), which encourages not only the use of ethnography to describe the impact of the designed intervention but argues that the social agenda of the researchers and designers should be discussed and highlighted as central aspects of the research process (Barab *et al.*, 2007). This approach to using design as a form of PAR as a method of enacting social change is the one followed in the second study in this thesis.

Three classroom orchestration tools were co-designed and evaluated with a teacher as part of their teaching practice using co-teaching as a method (Nicholson *et al.*, 2022). Co-teaching is a form of co-design practice, specifically aiming to support the design of educational technology, and seeks 'to move participants from passive adopters to active participants in the design and integration of educational technologies' (Nicholson *et al.*, 2022, p. 1). Using this as a form of co-design practice, these technologies were designed and used within a UK secondary school performing arts classroom to understand the possible role of technology in facilitating teachers' visions of purpose in the performing arts curriculum (RQ4) and possible ways in which technology can shape the performing arts curriculum (RQ3). These digital technologies varied in their design and use in the classroom to understand how different digital technologies could play a role within the classroom and the extent to which this shaped the curriculum and facilitated teachers' practices. The specific aims of these designs and the design decisions made for each intervention are discussed in Chapter 6.

Participant Recruitment

The initial call for participation was sent directly to teachers rather than to schools and/or their leadership teams, as it was important to work directly with teachers in the classroom. The project aimed to understand the role of digital technology in teachers' practices. For the research to be 'legitimate', it needed to involve teachers who were free to decide for themselves whether or not to participate (Kemmis, McTaggart and Nixon, 2014). To achieve this level of legitimacy, it felt important to work with a teacher who had chosen to opt into the research freely, as it was deemed more likely that teachers would share genuine insights into the process if they chose to use and adapt the digital technology themselves. Teachers' practices and their resulting pedagogies are not mandated by senior leadership teams nor by the national curriculum, so it was important to understand the role digital technology could play within a teacher's practices when they opted to use these digital technologies themselves.

Participant recruitment was done through an existing contact, a School Improvement Adviser (SIA) for Secondary Music at North Tyneside Council. As part of their role, they run monthly networking meetings for secondary music teachers who teach in schools in north Tyneside. The SIA emailed the call for participation to the mailing list for this networking group asking teachers if they would be willing to participate. The call for participation described the project and asked if teachers were willing to participate in a research project that aimed to explore ways that technology could support the teaching of the Level 2 BTEC.

Recruitment was done through this network as it was already a space where teachers discussed their current pedagogy and curriculum and possible ways to improve or support them. In this way, it was reminiscent of a 'public sphere' used by Kemmis and McTaggart to define 'actual networks of communication among participants that are self-constituted, voluntary, and autonomous' (Kemmis and McTaggart, 2000, 2005). They argue that legitimacy arises in these public spheres, so seeking participants from within this sphere was one way to ensure the legitimacy of the resulting research.

Participant Selection

One participant was selected for this project. This was done as the aim was to design and evaluate several orchestration tools, and so working with one teacher meant comparisons

could be made between the technologies that were designed and evaluated. The participant was chosen as they had responded to the call for participation, expressed interest in working with technology in the classroom long-term, and currently taught in a UK Secondary School. Several teachers responded to the call for participation and the one who was chosen responded first and continued to engage through the initial design stages, expressing a genuine interest in working together long-term.

The chosen participant (referred to by her pseudonym Amy) was a teacher in a secondary school in the North East of England. They were Head of Performing Arts, and in the school year, the project took place, they taught a mixed timetable of music and drama, although they primarily taught music. They had been teaching for 12 years prior to us beginning to work together, and although they were an experienced teacher, they freely admitted that they were not confident or comfortable with technology. They said in their initial email when responding to the call for participation that they wanted to learn about technology, as they did not include much in the curriculum and were keen to change that.

School Context

Bassey (1981) suggests that case study relatedness is more important than generalisability. In this case, the school context is important in understanding how related the case study might be. The school is a mixed 11–18 school (school Years 7–13) and a larger-than-average secondary school with 1,203 pupils on the roll.

The school has an 'average' proportion of disadvantaged pupils, although those pupils live in some of the most deprived areas nationally. At the time of the project, the school was rated 'Requires Improvement' by Ofsted, although it has subsequently been rated 'Good' in November 2019. At KS3, students take both music and drama on a carousel together. Students get 16 lessons of drama per year and 18 lessons of music. The school offers both GCSE and BTEC music to cater to a range of students' interests at KS4 and offers BTEC acting but does not offer GCSE drama. The school has a three-year KS3 curriculum, and KS4 courses are delivered over two years (Years 10 and 11).

Data Collection

The project took place over 27 months (2 years and 3 months) between June 2018 and September 2020. Amy chose to work with her Year 10 BTEC group as she felt that she did not teach this qualification in the way that she wanted to. The Year 10 BTEC group had 14 students (12 female and two male) who had all chosen to take music as an optional subject in Year 10. The BTEC course led to a formal qualification in Year 11 taken alongside GCSEs. The project aimed to understand how technology could be used to support Amy in teaching the course the way she wanted.
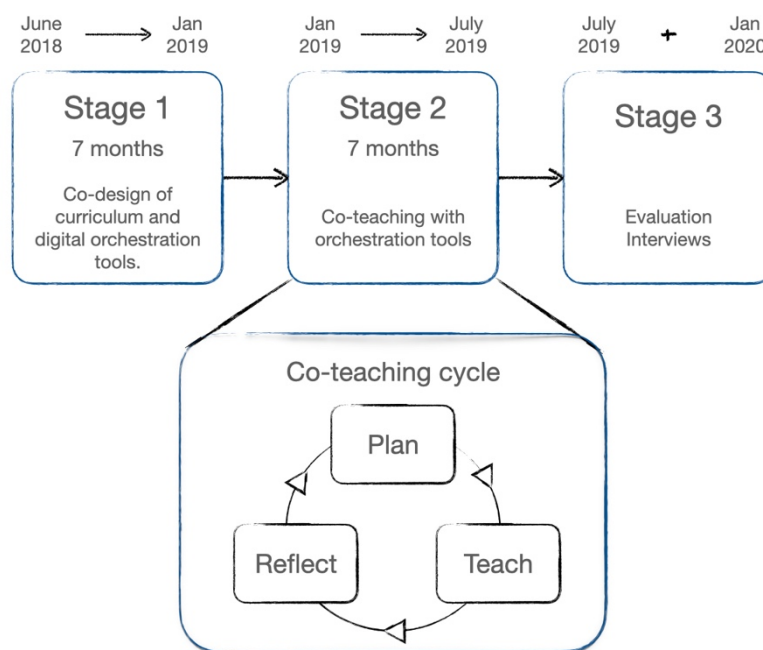
Figure 15: *Project stages*

The data collection for the project was broken up into three stages. The first design stage lasted for six months, in which the curriculum and intended pedagogies were co-designed so that they met the aims of the BTEC and Amy's desired practices (see Chapter 6 for more details). Throughout this design process there were several in person meetings and multiple emails exchanged as the curriculum was designed. Fieldnotes were taken alongside copies of the emails, and various documents were produced (e.g., lesson plans and outline curriculum plan that documented the co-design process). During this period, two of the orchestration tools—the socio-digital orchestration system and the micro bit lights—were co-designed with the teacher to suit the delivery of the curriculum.

The next stage was a period of co-teaching (Nicholson *et al.*, 2022) in the classroom. This took place over seven months, from January 2019 to July 2019. For the duration of this stage, sessions happened three times a week and lasted between 50 and 60 minutes (the school timetable had variable length lessons). These sessions were co-taught and were intended to be delivered in the same way as Amy would deliver them alone. The three orchestration tools were used throughout this period (see Chapter 6 for specific design details). Students were subject to all the same school rules and guidelines, and all the usual behaviour and school rules were upheld in the classroom. As usual in an ethnography, data was collected in various forms and from various sources (Rees and Gatenby, 2014). Fieldnotes were kept throughout the project, both in the classroom and writing up reflective notes on the process and the project after each session. These notes were augmented with a variety of photographs and videos taken during the sessions by the researcher and the students involved in the project. Students' work was kept supporting the fieldnotes and the teacher's observations. Interviews were conducted with the teacher and the students who had taken part. These interviews were conducted after the conclusion of the project and were audio recorded. Finally, documentation from the BTEC external moderator was kept to understand how well the curriculum had met the BTEC aims. It is important to note that students were initially interviewed; however, to ensure research design integrity and rich representation, the findings from these interviews are not included. Due to access restrictions due to COVID-19 and school timetabling, it was impossible to conduct further interviews with the students. This meant there was no opportunity to carry out member checking and, therefore, dialogic data generation with students. As this was not possible, the philosophical decision was made to ensure the ethical and methodological integrity of the research; thus, these findings were not included.

The final stage was two reflective interviews with the teacher (Amy), one carried out in January 2020 and the other in September 2020. The interview in January 2020 was carried out in person, and the final interview in September 2020 was done over Zoom because of social distancing guidelines. These interviews were both audio recorded, and notes were taken alongside the recording.

Data Analysis

The data collected was analysed through a process broadly following Carspecken's five stages of critical qualitative research (Carspecken, 2013). These five stages are building a primary etic record, researcher interpretation, dialogic data generation, describing systems relations to a broader context, and explaining relational systems. Table 5 details how the data collection and analysis were undertaken in relation to Carspecken's five stages.

Table 5: Data Collection Stages in Relation to Carspecken's Five Stages of Analysis

Stage	Step taken	Data analysed	What was done
Stage 1	Primary etic record	Observation notes, which included excerpts from emails as well as photographs of the process.	Reflections were written within the observation notes to make sense of the teachers' practices throughout the process.
Stage 2	Preliminary reconstructive analysis	Observation notes, which included excerpts from emails as well as photographs of the process.	The observation notes were analysed and a narrative account written of the teachers' practices with the designed technologies and processes. This is referred to in chapter 6 as the research diary notes (RDN).
Stage 3	Dialogic data generation	The RDN. The transcribed interviews.	The RDN were shared with the teacher and she was interviewed about the project and the reflections and observations in the RDN. This was done in two interviews referred to in chapter 6 as I1 and I2. The transcribed interviews were then analysed and compared against the RDN.
Stage 4	Describing systems relations to a broader context	1. The RDN. 2. The transcribed interviews.	The RDN and the interview data were used to create a critical narrative account of the use of the three orchestration tools as used in the classroom.
Stage 5	Explaining relational systems		The findings (the critical narrative account created from the RDN and the interviews) were discussed in relation to existing literature to explain the importance of the findings from stage 4.

The first stage of analysis began while taking observational notes, as these were both descriptive notes of what was observed in the classroom as well as reflections on these observed practices. While not reported explicitly in the findings, these reflections formed part of the initial stages of analysis as observations were compared and reflected on to continue to build a picture of the teacher's experiences of using digital technology to support her classroom practices. These observational notes were kept digitally and formed one dataset for the analysis.

The second stage began once the observation period concluded; these observational notes were then analysed in a preliminary reconstructive analysis. This analysis sought to offer a 'praxeological account' of what was happening in the classroom, that is, an account that the teacher accepted and recognised (Garfinkel, 2002). To do this, the notes were broken down into manageable units, each describing a distinct observed practice within the classroom. These units were then analysed and compared to each other to build thick descriptions of the teacher's practices and interactions with the orchestration tools. This data is referred to as the RDN in Chapter 6 to distinguish between the data created at stage 2 as a result of the preliminary reconstructive analysis and the initial observational notes kept throughout the project.

The third stage was dialogic data generation, which was done alongside the teacher in an interview soon after the end of the project (January 2020) and a further interview 12 months after the conclusion of the project. These interviews served as both data collection to understand how the teacher had continued to use the orchestration tools, and served as part of the analytic process as the findings from the reconstructive analysis were presented to the teacher and discussed. This was done to ensure that the descriptions were ones she recognised and accepted as true accounts of her practices and experiences of using the orchestration tools. This data was transcribed, analysed thematically and compared against the initial praxeological account developed from the observation notes.

The fourth stage was to use the RDN and the interview data to create a critical narrative account of the use of the three orchestration tools as used in the classroom. This stage involves presenting a narrative account of the findings as a result of the analysis process discussed in stages 1–4 to offer a rich description of the practices observed in the classroom,

critically analysed and contextually situated (Carspecken, 2013). This is presented as the findings in Chapter 6, section 6.3, as this is the account that reflects both the researcher and teachers' joint understanding of the practices and experiences throughout the project.

These mutually agreed-upon accounts were then used in stage 5 to situate these practices within the broader context and in relation to the Dampened Curriculum (as described in Chapter 4) to explain relational systems and offer considerations for the future design of orchestration tools. This is done within the discussion section in Chapter 6, section 6.4.

3.5. Ethics

It has been suggested that perhaps ethics is more pertinent, or at least plays a larger role, in educational research, in part because of education necessarily being grounded in a particular code of professionalism and ethics often based on principles of care and respect for individuals (Atkins and Wallace, 2012). There were a variety of ethical considerations throughout the research described in this thesis.

Fontana and Frey suggest that protection from harm, informed consent and the right to privacy are the three traditional ethical concerns in qualitative research (Fontana and Frey, 2000). These were the three primary considerations in this research, and the considerations were multifaceted and varied between the two studies. Harm may be considered both immediate and future harm (Atkins and Wallace, 2012). Commonly, this would be a consideration of breaking confidence where the information given in confidence to the researcher is of a personal nature or related to issues of individual harm (disclosures of abuse or criminal behaviour, for example).

In the interview study, considerations of harm were primarily about possible future harm stemming from the way the participants' data was used. The interviews asked teachers questions about their desired practices, current practices, and their school policies. Subsequent disclosures about school policies and how they impacted their practices were described in ways that may have led to harm if teachers were identifiable and the school was aware of the teachers' critical descriptions of policy. Some teachers made disclosures about not abiding by school policies in their classrooms, which, while not disclosures of a criminal nature, could have led to disciplinary proceedings from their schools. To mitigate the harm,

teachers' data was anonymised, and interviews were collectively analysed with exemplar quotes used for themes representative of several teachers. Identifying information, such as any mention of specific school policies where the school was identifiable, was anonymised or was not used in the findings.

In the second study, specific considerations of potential harm related to the impact on the students in the teacher's classroom. Enacting a new curriculum with students taking formal qualifications meant there was a potential impact on the students' grades, as well as recognising that there was a potential impact on the teacher as she was ultimately accountable for their grades and meeting school policies. Throughout the co-design and co-teaching, the teacher had the final decision on any areas of the curriculum that were disagreed on or where several options were available regarding suitable designs. This was to ensure that the final co-designed curriculum was suitable for use in the classroom to meet the requirements of the BTEC unit and ensure she remained in control of the curriculum when student results formed part of the accountability measures for her role.

Informed consent was another pillar of ethical practice that was important to consider in both studies. Fine *et al.* (2000) suggest the two questions to ask are who is informed and who is consenting? This is particularly pertinent where power relationships could disrupt participants' ability to freely consent. In the first study, where the information provided could potentially lead to professional consequences if the teachers were identifiable, how teachers were recruited was important. Teachers were recruited through existing teacher networks that they had chosen to join. This was done to avoid recruiting directly through schools and, therefore, through a gatekeeper. The questions were regarding their practices and, as such, did not ask or require any confidential information to be shared about their school, and as such, their school was not contacted or made aware that they were participating. This was done to ensure that recruitment was not done through a gatekeeper and that teachers who participated did so freely. In the second study (Gig Academy Project), the teacher was recruited through an independent network rather than a school. The length of the project and the potential impact on student grades, and therefore, her performance management, meant it was important to ensure that she opted into the study rather than be directed to participate. In the end, it was the teacher who asked her senior leadership team for permission to participate in the research and so it was driven by her rather than top-down.

3.6. Quality of Data

3.6.1.   Researcher's Roles and Beliefs

The work in this thesis is undoubtedly informed by my own stance and background. My own experiences as a performing arts teacher in an English Secondary School have influenced the work carried out, having had first-hand experience of working in an environment where school policy and my own practices had to be negotiated in the ways I enacted the curriculum. My own experiences of navigating policy to enact the curriculum in the way that best suited the students I taught contributed to my interest in this area. Having attended many networking meetings with other performing arts teachers and hearing their own experiences, I was interested in understanding other performing arts teachers' views, how they aligned with my own experiences, where they differed and what potential tools there were to ameliorate the impact of these policies.

PAR often lends itself to activist research as the researcher and participants co-construct an understanding of a context and possible changes to improve the context (Koirala-Azad and Fuentes, 2009). In this case, a critical realist approach and considering what might be (Sayer, 1999) and the resulting PAR both led to activism in the way they were positioned to consider potential improvements and ameliorations to the current context. Exploring possible orchestration tools and their resulting impact on practices was done with the aim of ameliorating the dampened practices exhibited by the teacher, something that has hallmarks of activism.

Although not working at the institutions the participants were working at, having previous professional experience in similar schools meant this work had similarities to insider research (Humphrey, 2013) in the sense that the first study was highly influenced by my understanding of the context these teachers were working in. Having that understanding meant a shared language and understanding of the nuances of life as a performing arts teacher. It also allowed me to gain a detailed understanding of their own practices as they often treated me like an insider and colleague when discussing their practices and school policies. This allowed me to develop a depth of understanding, as I had an existing understanding of the possible impacts but was able to elicit the subtle experiences of the teachers in the study. This aligned with a

critical realist approach as I recognised the potential events and mechanisms that existed in the context, and through shared experiences, I was able to explore and elicit the teachers' individual views and practices. Taking a critical realist approach allowed me to understand the teachers' experiences, seeing their interpretations as meaningful and central to the work. My proximity to the context also gave me a level of privilege when recruiting participants for both studies, as much of the recruitment was done through networks I was able to access through the virtue of having previously been a teacher of performing arts.

Rather than seeking to explain the 'validity' of results in the positivist sense of the word, this section offers an explanation and description of 'trustworthiness' of the data as defined by Lincoln and Guba (1985). They suggest that to be trustworthy, there are several factors to be considered: credibility, transferability, dependability and representationality. There has been some critique of these standards by Morse *et al.* (2002) in which they feel that many researchers guided by these criteria tend to determine rigour 'post-fact' rather than being guided by these criteria throughout the research process. The research described in this thesis aimed to consider these factors throughout the process, from research design to analysis and reporting. Much of the consideration of these factors is found in nursing research, which is often conducted using action research methodologies and, therefore, applicable in many ways to research in education settings, particularly in this thesis.

3.6.2. *Credibility*

Credibility has been described as the 'trustworthiness' of data (Silverman, 2019) in qualitative analysis. One way to consider this is through member checking (Silverman, 2013), aimed at allowing participants to correct misinterpretations and have a voice in the research (Neuman, 2014; Savin-Baden and Tombs, 2017). This happened throughout both studies in this thesis. In the first study, participants were interviewed about their current practices and given opportunities to give alternative explanations or perspectives. This was done through semi-structured interviews that ensured teachers were asked similar questions but allowed room for them to steer the interview if there were aspects of their own experiences they wanted to explore further. Throughout the second study, the teacher was involved at all stages of the research, with constant member checking throughout the analysis stages once the study had concluded. Data was also considered by an independent researcher with no vested interest in the data encouraging a 'fresh perspective for analysis and critique' (Byrne, 2001). They were

aware of the study's methods, aims and research questions to allow them to participate in the process fully but were not actively involved in the research project beyond the peer debriefing.

Triangulation of multiple data types happened throughout, something suggested to ensure the data's trustworthiness (Yin, 2011). . In defining the Dampened Curriculum as a potential causal mechanism, both literature, and responses to the interview questions, were guided by the literature and existing understandings of practice and the implications of certain societal pressures on teachers' existing practices. In the second study, multiple data types were collected and analysed, including observational notes, videos, interviews, and students' work, to build a detailed understanding of the context and the teachers' experiences in using the designed interventions. This second study was also longitudinal, lasting over two years, allowing for 'persistent observation', which gives depth to the analysis and findings (Lincoln and Guba, 1985).

3.6.3. *Transferability*

Transferability is achieved by being open with the methods, describing these as transparently as possible and giving detailed descriptions and rationale of the chosen methods (Lincoln and Guba, 1985). It was important to be open with methods of participant selection and details of the participants. In this case, demographic information related to the role and experience of the teachers in the first case study as this might have an impact on their practices and beliefs regarding the curriculum. A particular challenge in the transferability of qualitative research that includes thick descriptions of context and participants is to ensure that participants remain anonymised (Humphrey, 2013). The teacher in case study two was introduced as fully as possible, as was the context—in this case, the school she taught in and the designs were evaluated in. By being as open and descriptive as possible about the context and the background of the participants, the findings can be interpreted through the lens of the context to enable transferability.

3.6.4. *Dependability*

Dependability has been said to describe the stability of findings over time (Korstjens and Moser, 2018). This is intrinsically linked to understanding how the findings are derived from

the data collected and involves considerations of both the process and the product (Lincoln and Guba, 1982). In qualitative research, this is more complex as it necessarily relies on a researchers' understandings and interpretations of the data, something that has been criticised with qualitative research being labelled anecdotal and partial (Silverman, 2013; Neuman, 2014). The research in this thesis considered the dependability of the research in several ways encompassing both processual considerations and the final 'product'. There were several considerations relating to the process of the research. First, the quality of the data that was gathered initially was considered (Sullivan and Sargeant, 2011). There were concerns about the data gathered in the first interview in the way that teachers reported their practices and curriculum, leaving the data open to being influenced by social desirability (Ganster, Hennessey and Luthans, 1983). The participants were assured of confidentiality and anonymity so that their responses were not traceable back to the school they worked in. This was a particular consideration in the second study when working in an embedded way in the school; ensuring the teacher could speak freely and honestly about the aspects of the technology and curriculum that were not working was key. This was enhanced by interviewing the teacher after the end of the involvement in the classroom to ensure she had time for reflection.

To ensure these concerns were mitigated, the data was considered critically, taking into consideration the possible impact of any desirable responses. In doing so, my background was reported as openly as possible due to the potential influence this might have on the interpretation and analysis. The research design and implementation were carefully considered, drawn from case studies and recognised methodologies, and validated by experienced researchers. These methods are reported as clearly as possible, with detailed justifications for the chosen methods and subsequent analysis. To ensure the dependability of the product (outcome), the research was subject to regular member checking (Sullivan and Sargeant, 2011; Savin-Baden and Tombs, 2017). The findings were discussed with the participants, particularly in the second case study, offering them an opportunity to confirm the analysis and make changes or suggestions where they did not feel the analysis was representative of the study and their experiences.

3.6.5 Representationality

Representationality within educational research refers to the ability of the research to become much more than a narration or an observation of what is happening in the setting of the research. The design, the choices of what to include and to omit as well as the depth of what is discussed and not discussed, are all there as active parts of what Moscovici (Moscovici, 1972) would argue as supporting and consolidating the structures and processes that maintain uneven social patterns and inequalities. At every point in the research design, therefore, there was active consideration of not only faithfully representing the widest possible experience of the participants but also the milieu these social actors inhabited, as well as critiquing the divisive practices that were described; in the case of this research, the curricula that schools employed, and the policy and political reasons that the schools, the teachers, and the students, embarked upon the practices that they did. As Bar-Tal (2000) has pointed out, social science as a whole 'cannot escape from dealing with larger societal systems if it desires to be social in the broad meaning of the term and to be relevant to real problems that preoccupy people in their social life' (Bar-Tal, 2000, p. 156).

3.7. Summary

This chapter describes the methodological approach to the research in this thesis, designed to respond to the research questions and purposes set out at the beginning of this chapter. The methodology was driven by an overarching critical realist approach that allowed the teachers' practices and experiences to be explored and reported in detail while also critically analysing the events and mechanisms that led to these enacted practices. The thesis was influenced by an engaged understanding of critical realist methods (Vincent and O'Mahoney, 2018), drawing on critical PAR approaches to ensure that teachers' own experiences are reported in detail. This approach also supported exploring what might be, drawing on critical design ethnography (Barab, 2004) to support the socially engaged design and evaluation of technology interventions. This approach has been considered in curriculum theory before, but the focus is on both what is and what might be is a departure from much of the curriculum research that takes a critical realist approach.

As such, the research reported in this thesis was from two studies; the first was semi-structured interviews with sixteen performing arts teachers, all currently working in English secondary schools recruited through teacher support networks. These interviews took a

critical realist approach (Powney and Watts, 2018) and, as such, were explicitly theory-driven to understand the potential mechanisms teachers recognised as having an effect on their understanding of their practices. The second was a longitudinal critical design ethnography in which three orchestration tools were co-designed, used and evaluated by a teacher in her Year 10 Level 2 BTEC music class. These orchestration tools were used over seven months, allowing the teacher to integrate them into her practices before reflecting on their potential uses. Data collection included semi-structured interviews in the initial study and researcher notes, student work, videos, photographs, and further semi-structured interviews with the teacher. The data from the first study was thematically analysed following Braun and Clarke (2013) using both latent and semantic coding before creating themes. These themes are reported considering the three layers outlined in critical realism; the teachers' practices are described as the domain of the empirical before the school-level policy, and the impact on their practices is reported as the domain of the actual, and finally, the Dampened Curriculum is explained as an event at the level of the actual that occurs as a result of wider education policy (the domain of the real), allowing consideration for the three layers of critical realism (Bhaskar, 2013). The critical design ethnography data is reported following Carspecken's (2013) guidelines for reporting critical qualitative research methods, providing thick descriptions of the teachers' practices, and considering potential impacts on those.

The following chapters report the findings from the initial study, describing teachers' practices and school-level interpretations of policy that impact on those, before offering a description of a potential causal mechanism, the Dampened Curriculum. It then goes on to consider teachers' existing uses of technology and the current role it plays in their practices. This is concluded with a specific study conducted with a teacher who displayed signs of a Dampened Curriculum, firstly describing the design of three orchestration tools designed to ameliorate the dampening before presenting findings and evaluating the design of these technologies as a way of understanding what the potential role of technology might be.

Chapter 4.   Dampened Curriculum
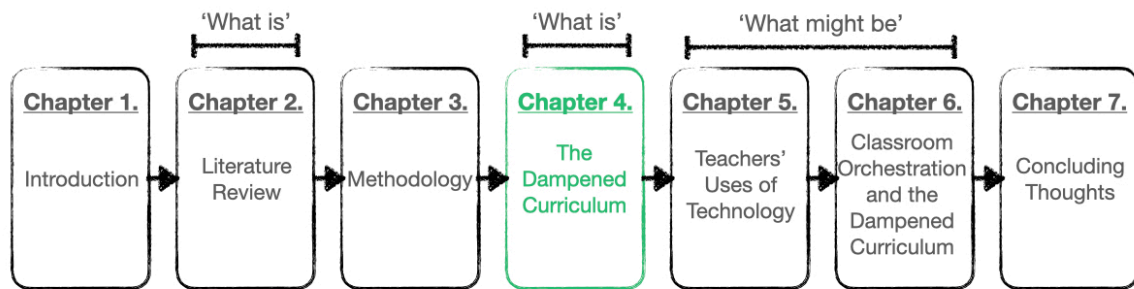
Figure 16: Thesis structure (you are here)

4.1. Chapter 4 Overview

This chapter considers the findings in the previous chapter within the context of existing literature and then goes on to describe a potential causal mechanism, the dampened curriculum.

This chapter considers the findings in the previous chapter within the context of existing literature and explicates these in relation to the theory of the Dampened Curriculum developed and discussed in Chapter 2.

This thesis has two purposes:

1. To gain an in-depth understanding of how the curriculum entangles teachers' practices and beliefs in English secondary Performing Arts classrooms.
2. To examine the potential role of technology in facilitating teachers' enactment of the English Secondary Performing Arts Curriculum.

This chapter aims to achieve the first purpose, addressing the first two research questions stated in Chapter 3:

1. What are teachers' current practices and beliefs concerning the English secondary Performing Arts curriculum?
2. How do school-level interpretations of external policy shape the delivery of the English Secondary Performing Arts curriculum?

This thesis takes a critical realist approach and as such the discussion in this chapter will seek to consider the empirical findings within the three domains of understanding: The empirical, the actual and the real. As such, this chapter is split into four subsections.

The first subsection presents the empirical findings from the interviews conducted with performing arts teachers (described in Chapter 3, section 3.4.1).

The second subsection describes and situates teachers' current beliefs about the English Secondary Performing Arts Curriculum, both the specifics of the subject curriculum and its place within the wider school curriculum landscape. This is reported as *the domain of the empirical* and describes events as they were observed and experienced by teachers. As such, this section privileges the voices of the teachers and their experiences.

The third subsection goes on to examine these experiences in the domain of *the actual* to understand the events (both observed and unobserved) that entangle teachers' beliefs and their resulting practices. This is done by examining teachers' reported practices alongside the school-level policy environment affecting those enacted practices.

The fourth and final subsection then expounds on the Dampened Curriculum, offered as a potential causal mechanism to describe why there is a change between the teachers' descriptions of their intended and enacted practices. This is done by drawing out teachers' practices in relation to their beliefs and seeking to understand the wider policy drivers that ultimately influenced curriculum design and enactment at a classroom level.

4.2. Findings

4.2.1.   Curricula Freedom: Reality or Imagined?

Many teachers described being given a large amount of freedom within their curriculum, particularly at KS3:

> *'You've seen the national curriculum for music. It might as well say, 'Do what you want whenever you want'. I do think it allows us to… It gives carte blanche, really. Go for it, as it were'. (Music T5)*

The freedom afforded to them meant most felt they were able to remain flexible in the delivery of their schemes of work, particularly their ability to adapt to suit their students' interests:

> *'We try and make it quite interchangeable that it's not usually just on one type of lesson for too long, so they don't get too bored'. (Music T3)*

While some teachers enjoyed this flexibility, others felt that it meant there were some inherent problems with this model:

> *'I, kind of, wear two hats, you know, as the curriculum designer and as the teacher. … When you're a one-person department, either you've not been given the TLR, you are curriculum designer by default. The philosophy that you hold is the philosophy that the kids see because there is no other specialist'. (Music T10)*

While this meant that they were free to design and enact the curriculum in the way they felt was the most suitable, several teachers acknowledged that this meant the curriculum was then heavily influenced by teachers' own beliefs and values.

One teacher reflected that:

> *'When teachers devise a curriculum, they have lots of things to consider. The first thing is they think about how they were taught and what their experience was like at school, they have a value system, some types of music are seen as being more valuable than others, I think. then they also have their own teaching comfort zone and what they're comfortable teaching themselves and how they're confident delivering it'. (Music T1)*

This was echoed in drama, too, with one teacher saying:

> *'What's happening in schools for me with drama is that, you know, Drama teachers are playing to their strengths, they're teaching the subject, how they feel it should be taught'. (Drama T1)*

This created some tensions within departments for some teachers, with them reporting that:

> *'I think my Head of Department, in a way, has quite traditional values in music and likes to get that traditional element of notation in and learning terms in that very kind of classical background'. (Music T4)*

Multiple teachers reflected that this meant curricula often remained similar:

'In my school, because of where we're at and the type of school that we are, we tend to just do things the way they've always been done' (Music T1)

'What's happening in schools for me with drama is that, you know, Drama teachers are playing to their strengths, they're teaching the subject, how they feel it should be taught'. (Drama T1)

For many teachers, their practices and beliefs were often influenced by their performing arts education. However, for most, this was often their extracurricular experiences rather than their classroom teaching:

'I think that it was really probably a mixture of school ensembles and the county orchestras and things that really, I think, kept me going more so than perhaps what I was doing in school'. (Music T9)

For a lot of teachers, classroom music for them was something that saw 'musical' students given different tasks, in some cases excluding students from opportunities in the department. One teacher, for example, recalled the differences between them and their brother, saying:

'my brother is a songwriter... he was never allowed in the music room and he wasn't allowed to go play the drums,... he wasn't one of the favourites, he hadn't done Grade 8 piano, he wasn't like me, basically... I felt really bad for him, because he had a really bad musical experience at school, whereas because I did a bit of the classical stuff, I was classically trained, I was then able to take advantage of everything else that school offered'. (Music T1)

Given the inequity, many saw, their own classroom experiences were often something they tried not to replicate. One teacher said:

'The way I approach it is definitely the opposite. You can understand why some teachers might even be threatened by some of the really able musicians coming in as well. I can definitely see that'. (Music T3)

Where teachers had experienced better classroom practices, they were often those that sought to offer a well-rounded experience:

'it was nice to have a teacher that was positive and actually wanted to get to know you more as a musician and a person rather than just a body that you are delivering to. Yes, I think that probably did inspire me'. (Music T6)

Or those that were personable:

'my teacher looking back now my drama teacher in school, she was a little bit melodramatic. But again, she was so different and I just thought, Oh, my god, she's brilliant'. (Drama T2)

Teachers' Intended Aims of the Curriculum

Although most of the teachers felt they had a large amount of curricula freedom when they described curriculum aims, they fell broadly into one or more of four categories:

- Encourage a love of their subject

- Create good musicians/dramatists

- Create opportunities for students to improve their soft skills

- Intended to prepare students for industry.

Several teachers said their aim was '*to just get them to love music*' (Music T7) and to '*find that enjoyment*' (Drama T1). They wanted to see students '*engaged, enthused about music*' (Music T8) and wanted to '*impart the joy of playing whatever it is, whether it's singing or playing your instrument*' (Music Group). Drama teachers, specifically, were also clear that they wanted students to see their subject as a '*discrete subject*' (Drama Group 2) or as a '*subject in its own right*' (Drama Group 2). This desire to assert their subject as something worth studying in its own right is seen throughout many of the themes and areas discussed throughout this chapter and is revisited in detail in section 4.2.5.

Teachers across both music and drama were keen that performing arts was '*for all and for everyone*' (Music T3), and that '*it's about giving those opportunities*' (Drama T1) and '*accessibility for all*' (Music T2).

Several music teachers rejected the idea that students were inherently musical, instead asserting that they saw it as part of their role to create musical students:

'in conversation with my boss—we get on really well (laughter)—we were talking about the kids in Year 9 that were going to be choosing it for Year 10. Then he was like, "Are they musical?" I'm like, "That's our job: to make them musical".' (Music T7)

Another teacher made it clear that while he would not take 'literally anybody', they felt that all students should be given the opportunity, not just those who were in Grade 5 and above:

'the ones who are being encouraged to take it, regardless of whether they are Grade 5 flute or just really good with music tech equipment, and had just taken an aptitude to something that we have done, I am encouraging them to do it. Because I think that is the right thing to do as well.' (Music T8)

Many teachers were clear that they saw the performing arts as a conduit for improving students' soft skills. This was defined in a variety of different ways by different teachers. Creativity was mentioned multiple times, with one teacher saying:

'the whole priority with lower site is enjoyment and creativity. Absolutely that's at the forefront of absolutely everything we do'. (Music T2)

Another said that if they were able to plan their curriculum entirely themselves, then:

'rather than music outcomes, it would be about developmental outcomes … I would think about problem solving skills in the music curriculum, I would think about the process of creativity … and how that can be developed'. (Music T1)

Others discussed the idea of encouraging the development of transferable skills as an aim of a performing arts curriculum:

'I think a lot of it is about building their confidence and helping them get some skills that, even if they don't take GCSE music, might help them with something else in the future'. (Music T9)

It was clear that teachers saw participating in the performing arts as encouraging reflection and understanding of the world, particularly interpersonal relationships:

'… a lot of those kind of soft skills, the, you know, the interpersonal things, I think that's really important to us.' (Drama T1)

One said the aim of their curriculum was that students:

'almost self-reflect on themselves, but also to have a bit of a outlook or understanding of everything else around them, how people are and fit, you know, different things that happen in society how that is as well'. (Drama Grp2)

For many teachers, this was an important part of studying the performing arts and formed a large part of the reason they felt it was an important subject. There was a careful balance, though, with many teachers keen to see the performing arts as subjects in their own right rather than ones that offered the opportunity for students to gain other transferable or soft skills. One teacher felt:

'I've always thought that music should be taught just for the innate nature and joy of music. It shouldn't be taught to, I don't know, benefit maths or whatever'. (Music T5)

One drama teacher, in particular, went slightly further and was adamant that *'this isn't therapy'* (Drama T2), pointing to instances where:

'you always have a parents evening when they want their kid who's really quiet do drama and you're sitting there going, "No, they're not gonna like it" and then they end up doing it. And then they end up dropping out 'cuz [imitating child] "I didn't realise you had to like perform"'. (Drama T2)

Even teachers for whom the curriculum aim was about performing arts in their own right pointed to skills as the aim of their curriculum rather than specific, measurable outcomes. Most wanted students to gain from the process of participating in the performing arts, with one teacher saying even their *'… assessment grids are designed to talk about skills'* (Music T10).

Another common aim of their curriculum was to create good musicians and dramatists, offering them a well-rounded experience of what the performing arts are and could be. Particularly lower down the school in KS3, teachers articulated aims such as:

'Years 7 and 8, the aim at that point is just to produce good musicians who have got a well-rounded education but a well-rounded practical education, I would say'. (Music T5)

Although they wanted students to gain musical and dramatic skills, the focus was less on students producing high-quality performances and more on gaining skills they could keep with

them into later life. One teacher captured a sense of this when they said, '*it should be … that they feel confident going on to explore music as they grow up*' (Music T5). Others echoed this saying that:

> '*if we're talking about creating a play from scripts, or creating a play from devising, for me teaching, I'm interested in students learning about those processes and how these things happen*'. (Drama T1)

Teachers were keen to give them a broad introduction to music, with several saying similar things, such as:

> '*Not shying away from the classical stuff, but giving them a really broad and balanced range of musical styles*'. (Music T2)

Much of this is linked back to teachers aiming to offer students the opportunity to widen their understanding of culture and society.

Alongside the development of musical skills was a sense that teachers were preparing students for the industry. This was more prevalent as an aim with teachers who taught KS4 and five students, with one teacher saying their aim was:

> '*instilling like sort of solid music skills, but it's also preparing them for the rigours and demands of being a musician*'. (Music T6)

This idea of instilling a sense of understanding of the realities of life in the performing arts was echoed by many teachers. Drama teachers often discussed 'discipline' as an important factor of drama lessons, while music teachers tended to discuss '*the physical demand of being a musician, and the tedium as well of it*' (Music T11). This was observed as a balancing act sometimes:

> '*I think that the challenge is trying to make everything feel engaging and exciting. But then also, being realistic with the kids and saying look it might not be the most fun task you're ever going to do. But actually, let's see why it's important and try things out*'. (Drama T1)

All Curricula Journeys Lead to Exams

Although teachers collectively described aims as outlined above together with a large amount of freedom in terms of deciding their curriculum content, when they were asked to talk

through and describe their current curriculum, they mostly described a curriculum that was *'very much informed by specs'* (Drama T2), explaining that while their aims remained the same, they *'also have, maybe part of an eye towards the skills that are required for GCSE and A level'* (Music T1). This was even though many teachers, when describing their aims, referred to the fact that *'ultimately, such a small percentage of the cohort will go on to take it [at GCSE]'* (Music T10).

Many teachers discussed the design of their curriculum with reference to ensuring that students were prepared for GCSE. Teachers described a large step up in terms of ability and a disconnect between what was expected at KS3 and at GCSE. One said:

> *'going from Key Stage 3 to GCSE is a huge, huge, huge leap anyway, and if you haven't got any of that 'theoretical appraisal' side of things down, then it makes it an even bigger leap'. (Music T4)*

Teachers, therefore, described changes to the curriculum to overcome that gap. Teachers outlined how they had *'rejigged the curriculum so there is this onward progression up to GCSE'* and that *'the aim was to develop a learning journey through Key Stage 3 to progress into a vocational qualification in key stage 4'* (Music T6). These qualifications and the focus of those assessments formed a large part of most schools' practical planning of curricula content. Some teachers described a balancing act between their aims and preparation for KS4. For example, one teacher, having outlined their aims, went on to say:

> *'the other side of it is that balance of, you know, preparing for Year 10 and 11. And actually, it's exam-based understanding of the subjects'. (Drama T1)*

Others echoed the idea of *'exam-based understanding'* with several drawing on terminology from exam boards to describe their success criteria for students. One teacher outlined a curriculum based on GCSE assessment criteria saying:

> *'if students cannot verbalise or move from their lower band, … they are never going to be able to get to the point later on where they can be able to talk about music with some sense of coherence and in a musical way'. (Music T8)*

This idea of defined ways to talk about music in a musical way was drawn from the requirements of this teacher's chosen specification at GCSE level and formed the basis of the

trajectory of their curriculum. They went on to describe Year 9 as '*a purely foundation year to build skillsets to ensure that they are ready to take GCSE*' (Music T8).

Teachers' curricula were designed in this way despite an overall feeling that formal assessments taken at KS4 were not the best way of assessing students' skills, nor did they entirely suit their students' or curriculum design goals. Teachers felt that the exam boards offered GCSEs that were limiting in both their content and their idea of what drama and music were. One teacher described this at length having felt this keenly themselves as a script writer as well as a teacher. They pointed out that:

> '*when you look at the assessment criteria, you've got a lighting designer, sound designer, set designer and a costume designer, they're your options, and you can't be assessed for script writing, you can't be assessed for directing*'. (Drama T1)

Other teachers described GCSEs going expressly against aims they had described initially, with one saying they:

> '*… get frustrated with the GCSE, as well, because GCSE music is supposed to be access for all … but it can be quite elitist*'. (Music T7)

Its requirements for performance standards based on the Associated Board of the Royal Schools of Music grade levels were seen as elitist and, together with a focus on a narrow range of possible performance options at GCSE, was seen as problematic.

Qualification Choice and Performance Tables

Teachers often mentioned that although they were looking for more appropriate qualifications at KS4, they were concerned about how long they could continue to offer them as:

> '*you can go a BTEC or a Rock School way and thankfully, because they are both on the performance tables it's okay, but the minute one of the loses it and it isn't on the performance tables it's a problem*'. (Music T6)

Many had turned to vocational qualifications, with one teacher who had moved to UAL saying:

> '*UAL is far more student friendly. It's written by teachers who currently work as teachers so that's a bonus. And you can be a little bit more flexible and a little bit more creative*'. (Drama T2)

There was a feeling, though, that even these vocational exams were not quite what they were looking for, particularly BTEC, which, although a vocational qualification, was described as not fit for purpose, especially the written exam:

> 'The music industry is all over the place. Depending on where you work depends on what your job role and your job description is. You cannot just put them all into a box and make it is a multiple-choice question'. (Music T6)

Teachers also felt a lack of ability to vary the course appropriately depending on where they taught, with several teachers noting that performing arts education should be place-based and have relevance to the area in which students live:

> 'If you are in Bristol you do an informal route of music because that's everything that is about Bristol music, is that informality and things. Yes. I think it depends regionally for sure'. (Music T6)

Others noted that opportunities varied to fully engage with aspects of the GCSE course were often dependent on where students were based:

> 'I think there's huge differences, depending on where your education is based, you know, Norwich is great as a city. And there's some nice little theatre groups, but actually nothing like some other parts of the country'. (Drama T1)

4.2.2.   Ofsted and the Curriculum Redesign

Curriculum was observed to be a significant focus of their teaching practice in recent years, with every teacher having made changes to their curriculum, ranging from reflecting on their curriculum and altering some of the content to rewriting the whole curriculum from scratch. One teacher said that:

> 'It wasn't a massive restructure or anything, but it was just looking a bit more at continuity between years, rather than within a year'. (Music T2)

While others had undertaken more substantial changes saying:

> 'we've literally just gone through a massive curriculum rebuild for KS3 which is then having a knock on effect to KS4 so KS4 is going to change'. (Drama T3)

Several teachers said their school had specifically employed them to undertake a curriculum review describing previous curricula as '*patchy*' (Music T8) or somewhat outdated, with one teacher saying:

> '… the curriculum has not moved and is very much like what you and I probably saw when we were at school'. (Music T6)

When asked what had prompted those teachers who had been in roles for longer to undertake a review and change of the curriculum, several teachers pointed to school-level changes being encouraged: *'We were doing a whole school overhaul anyway so we kind of that was one of the things that prompted it'* (Drama T3).

Most schools that had made school-level policy changes to curriculum guidance were doing so in response to recent Ofsted guidance for inspections that place a renewed focus on the curriculum design and implementation in schools, with a specific framework designed to assess and inspect schools' curriculum designs.

Most teachers identified the recent Ofsted changes as a prompt for the changes they had made to the curriculum:

> '*I think it's [the Ofsted curriculum focus] made us tweak how we teach things and to make sure we're developing with different tiers of vocabulary and actually looking at the threads that run through the curriculum*'. (Music T3)

For some schools, this guidance had become a large focus for the schools with teachers who had seen that '*the Ofsted changes have been a massive focus*' (Drama T3), particularly for those who identified that their leadership team were concerned about how well their curriculum would be perceived in an inspection, with one saying:

> '*they're very conscious that actually, under the new framework, we'd potentially not come out so glowingly, especially in curriculum*'. (Music T10)

The renewed focus on curriculum forming part of the Ofsted inspections and guidance meant that teachers reported an increased level of accountability for the curriculum.

Teachers, overall, reported that they are '*… being made more accountable now for our schemas of work and our curriculum design*' (Music T6).

Senior leadership teams were meeting more often with middle leaders, specifically about the curriculum:

'Our head teacher is meeting with every middle leader across the next few weeks and asking them very specific Ofsted based questions about their curriculum to make them think through those particular points. Knowledge-rich is one of them'. (Music T6)

'There's a head of the subject and … they spend a lot of time in curriculum planning meetings across the whole school'. (Drama T1)

Some teachers said their schools had shied away from labelling Ofsted as the prompt for the curriculum changes while still ensuring that they had the necessary documentation in place:

'The word "Ofsted" is never mentioned. I've never had to write the intent statements. They did all of that for us'. (Music T9)

Several teachers, although they were aware of the Ofsted changes, said that the Ofsted change had not influenced their curriculum redesign, but rather it had just prompted them to reflect on their existing curriculum:

'obviously [with] the new Ofsted guidelines, everyone was encouraged to look at their curriculum a little bit, but I think inevitably we'd have done that anyway'. (Music T2)

Increased Focus on Knowledge

Curriculum changes that teachers had made often included a much greater focus on including knowledge in their curriculum designs. Teachers discussed knowledge as a key aspect of ensuring that their curriculum was of high quality, with one reflecting on the old curriculum at the school before they made changes:

'If you asked the kids about it they'd say they loved it but they didn't have an awful lot of knowledge about it as a subject'. (Drama T3)

Some had ensured there was an increased focus on the history of their subject:

'I completely redone (sic) the whole Key Stage 3 curriculum, and I've put a lot more focus on drama as a subject in its own right. We've got a lot more theatre history in there. Where's it come from? Why do we do this? How does it link to other subjects? But this more kind of how does it influence the other subjects?' (Drama T4)

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Others had placed a bigger emphasis on students understanding the context of a topic beyond being able to play that genre of music:

> *'whatever topic I teach them, whether it's reggae or whether it's music tech, I do make sure there is knowledge in there in terms of context and keywords and understanding of that, just because I want it to have meaning'. (Music T9)*

A regularly used phrase was ensuring that curricula were '*knowledge-rich*' (Music T6); this was repeated regularly by teachers who were all aware of the use of this phrase and said it was something that Ofsted was looking for in their inspections of the curriculum from now on. This idea that a curriculum should have a focus on knowledge was accepted by all teachers as something that they should be providing to students. Teachers felt that '*knowledge is important in whatever way we want to deal with it*' (Music T8), with teachers feeling that ensuring a curriculum was knowledge-rich was what they should be aiming for, saying:

> *'I'm quite confident that we can ensure that that curriculum is knowledge-rich. But I'm not quite sure if the rest of the school is quite at that point yet'. (Music T6)*

Having previously talked at length about the aims of their curricula being skills-based, whether musical or dramatic skills or transferable skills, the increased focus on knowledge was somewhat surprising, particularly in the way that it appeared to have been accepted as the sign of a good quality curriculum offer.

Knowledge is musical vocabulary

Teachers were asked what they thought knowledge was within the performing arts curriculum and how they incorporated this. For many, including knowledge in the curriculum meant ensuring that students were able to use specific keywords or able to talk in a musical way:

> *'I think that is where the knowledge-rich bit comes from, is that especially from the beginning of my lessons ensuring that they have always got that basis of studying and making clear what those elements are, and reminding them of that every time they listen to a piece of music so they can talk about it and talk about it in a musical way'. (Music T6)*

For most teachers, this focus on musical language and often key words and vocabulary was the way they ensured that they incorporated knowledge into their curricula. For some, this focus on musical vocabulary was now incorporated into every lesson:

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'for every lesson, they've got their keywords that they're learning. Luckily, we are not forced to do all those official knowledge organisers that seem to be the latest trend, but definitely we do build the key vocabulary'. (Music T7)

These keywords were also included in some teachers' curriculum plans with a list of the ones students should know by the end of the topic:

'when I have to do my curriculum overviews, I have the list of, like, the keywords that they need to, I guess, know or try and understand by the end of the topic to give them that knowledge'. (Music T9)

Teachers reported being asked by their schools to ensure that they have keywords for each half-term listed as part of their schemes of work:

'We've had to give our key terms for each half term, for example. I was thinking, we do African drumming, but I'll find loads of key terms … School wants all of these key terms up on the school website and these knowledge organisers'. (Music T3)

Many schools were then focused on this as a way of measuring how well students were gaining knowledge, with one teacher saying:

'We must always have two or three particular keywords that you are focusing on that day so that that returns back as part of your driving question to ensure that knowledge is building'. (Music T6)

This included making these key terms visible to a wide range of stakeholders in a way that meant everyone was aware of what students should know at key points in their school life:

'There are these posters in the classrooms that are all the key terms'. (Music T3)

Although teachers did not always point directly to the inclusion of knowledge within their curriculum, many used terminologies from learning and cognitive science domains discussing various pedagogical practices predicated on a cognitive sciences view of learning and cognition:

'I was doing lots of interleaving and making sure that I was recovering stuff that they'd done before but without it being boring'. (Music T6)

'We do quite a bit of retrieval practice and things along that and cognitive learning theory and all that'. (Music T5)

Others also talked about embedding powerful words within curricula:

'in the classroom there's been the use of what they call powerful words and finding ways the powerful words can be embedded across different subjects'. (Music T8)

The language being used by schools to describe curriculum documentation had shifted in line with this, with many schools referring to schemes of work as 'learning programs':

'By the end of this year we're supposed to have learning programs, which is just our school's name for schemes of work, and knowledge organisers'. (Music T3)

The Rise of Learning Journeys and Knowledge Organisers

Ensuring that students were constantly building on their existing knowledge was seen as important for a lot of teachers. Many talked about ensuring that their curriculum was better sequenced or that the continuity of development of skills and knowledge was better supported:

'That continuity and development across the Key Stage was maybe a bit of a focus'. (Music T2)

'We are always trying to see a direction running through everything, through curriculums'. (Music T8)

This was mainly seen through teachers developing 'learning journeys', created to act as a visual representation of the curriculum and the knowledge students should gain by the end of the curriculum. Often these learning journeys were created by teachers with the aim that '*kids were seeing kind of how their learning journey works*' (Drama T3).

The aim in most cases was to make it clear to students how their learning is sequenced throughout their time at school:

'one of the things I'm doing at the moment is kind of creating a curriculum map for the students … we're trying to adapt it so the students can look at every single year group and have a greater understanding of what they study in that particular term, and where it moves on to as they go through the school'. (Drama T1)

Knowledge, the Performing Arts, and Playing the Game

Although most teachers were creating learning journeys, many of which charted a journey towards gaining and using keywords and terminology, teachers also reflected that while this

was expected, there were tensions between what they were planning and what they felt was a performing arts education:

'I don't want students to just have glossaries of key terms, that's not a musical experience. If they can understand them, then that's great'. (Music T3)

Others were keen that the idea of what knowledge was in music should be broader than simply key terminology:

'What we need to recognise is that knowledge in music does not necessarily need to be written. It does not need to be just words'. (Music T8)

Although many teachers described demonstrating the inclusion of knowledge in the performing arts as including key terminology, many teachers' definitions of knowledge were much broader than this and encompassed some form of skills:

'I think there is the skill in knowledge. You can't play a ukulele without knowing how to play a ukulele, how it's formed, how it creates the sound, all those things. I think a lot of it is that practical skill and then the understanding that underlies all of music'. (Music T6)

Others felt that:

'musical understanding, whether that is demonstrating musically about polyrhythms or various other things, is a completely legitimate way of us showing our knowledge'. (Music T8)

It became increasingly clear that this tension was felt by many teachers who felt that performing arts had been left out of the school-level curriculum conversation:

'When that discussion was happening at HoDs and SLT level, that was more, as always, geared towards English, Maths, Science and Modern Foreign Languages than it was to Art, Performing Arts and Technology, or PE [Physical Education] as well'. (Music T10)

As a result, teachers felt that the performing arts struggled to fit within this framework at times:

'I think it is a lack of understanding of how sort of how pupils can learn … because the teaching's different and the learning's different'. (Drama T2)

This tension between what they saw as the potential of a performing arts curriculum and what they were being asked to do at a school level meant that many teachers described aspects of their curriculum that were there to simply tick a box.

One teacher summed this up by saying, *'I'll play the game but I don't see it as meaningful'* *(Music T3).*

Many teachers recognised this tension, and it manifested in different ways, from feeling that they had to:

> *'Put showy things in, not necessarily for the kids or for ourselves or for their futures, but for someone else, and that feels very self-defeating'. (Music T10)*

Others said:

> *'There are some subjects who are really jumping through crazy shaped hoops to try and fit the mould'. (Music T3)*

Many teachers had found ways to partially reconcile this tension by ensuring the curriculum ticked the right boxes at a surface level while ultimately following the curriculum plan they felt made the most sense:

> *'I think for us, it was a case of just dressing it up really in the words that were there, knowing full well that the methodology behind it was sound, and I know that sounds incredibly arrogant, 'Look at me with my methodology, it's incredibly sound', but it made musical and dramatic sense'. (Music T10)*

Despite finding ways to teach in a way that made sense for the performing arts, many still felt that they had been forced to make compromises with their curriculum to ensure that it met the expectations of the school:

> *'[It] wasn't necessarily my totally my vision I think I had elements of written in there but not necessarily as rigid as it was ... I've had to compromise to be able to get my way in other things'. (Drama T3)*

This rigidity was reflected elsewhere, with another teacher feeling that it had curtailed their ability to ensure the curriculum was relevant saying:

> *'In music we like to respond to what's happening musically. I've always liked the freedom to (it would still be under a topic) but to go in a certain direction. The*

language that might come out in those lessons could be quite different. School really wants it to be quite prescriptive'. (Music T3)

The feeling that they were just ticking boxes was one they saw as a problem specific to the arts, or at least to non-STEM subjects, mainly because whole school initiatives were often seen as being based around STEM subjects:

'I think there are whole school initiatives across the whole of education, which are designed with STEM subjects in mind. They are data-driven. We cannot provide that data in the same way.' (Music T8)

Overall, there was a feeling that Performing Arts as a subject did not and could not fit the desired formula for curriculum-making schools were looking for. Some described schools that recognised this disconnect, with one teacher saying:

'They created this role, this arts coordinator role that wasn't created before. It's brand new, because they know that music, art, drama, photography cannot be always consistent with the rest of the school'. (Music T6)

Others, however, described senior leadership teams that were less aware of disciplinary differences:

'Ultimately, when senior leaders walk into a room and you've got your lesson observation, it's very hard to argue when something looks a bit rubbish by the aesthetic view that person has. It's very hard to argue, 'Yes, but you don't see all the work that goes into it''. (Music T10)

4.2.3. Disciplinary Versus School Pedagogies

All teachers identified that pedagogies employed in the performing arts differed from those seen in other subjects. These differences were at the root of many teachers' reflections, and they felt they were making compromises in their curriculum planning and delivery. Teachers described a school environment where they were expected to demonstrate that students were building on existing knowledge and how they were sequencing the development of this knowledge to reach specific and identifiable aims. When asked about performing arts pedagogies, however, they described pedagogies that did not lend themselves easily to fitting this type of framework in which knowledge outcomes were routinely measured.

Performing arts pedagogies were identified first and foremost as practical. Teachers, without exception, focused on ensuring that lessons were practically based and that students were given as many opportunities for practical music-making as possible:

> 'We try and make it as practical as we can. Despite there being an emphasis on some of the theoretical side of things, we try starting with as much practical work as we can'. (Music T4)

Teachers felt this set performing arts subjects apart from more traditional STEM subjects:

> 'I think it's probably unique because of the practical element'. (Drama T2)

This practical pedagogical focus was also seen as a way to deliver the more theoretical elements of the curriculum:

> 'It's strongly practical, but thoughtfully reflective, too, incorporating things such as composition diaries and reflective writing or reflective statements'. (Music T1)

> 'It's similar to the BBC 'Ten Pieces', ... we work through pieces like that, so, yes, that's like teaching the theory through playing'. (Music T7)

Several music teachers referred to musical futures approaches emphasising practical music-making at the core of the lessons. Although these approaches were employed within the classroom, there was much discussion of more structure being applied to the traditional approaches. Many felt that a lack of theory meant it was not entirely suitable as a pedagogical method without some alteration:

> 'My reservation with [Musical Futures], which I share with my departmental colleagues, is that I worry about the lack of theory with that'. (Music T4))

One teacher still maintained a focus on musical futures, although they, too, included more structure:

> 'It's all based around Musical Futures and the curriculum pedagogy that is practical at the heart of every lesson, but there is slightly more structure to it than historically what has been in Musical Futures'. (Music T6)

Traditional Three-Part Lessons Still the Norm

Despite teachers feeling that performing arts pedagogies differed from those observed in many other disciplines, many teachers still followed traditional three-part lessons as the usual

way they enacted their curriculum within the classroom. Almost every music teacher used starters to introduce listening tasks into the lesson:

'We always have a starter task that is listening, so they are listening to a wide repertoire'. (Music T6)

These starters were mostly followed by a demonstration of the skill students were going to work on that lesson with a performance or some form of reflective activity offered at the end as a progress check for both students and the teacher.

It's working on that skill and, at the end of the lesson, we often come back together and we do some performances and we scatter across the middle with some performances too'. (Music T5)

Drama teachers described a similar format to their lessons as music:

'It's interesting as a subject, we're kind of always in a room. And we're kind of so, sort of set in our ways in terms of, you know, kids rehearse, and they show work at the end of the class, and they perform'. (Drama T1)

Written Work Should be a Rarity

Focusing on practical music-making and skill development means that most teachers aim to avoid written work within the curriculum:

'In Year 7 and 8, there's no writing at all. In Year 9, there's the tiniest bit of writing'. (Music T5)

For both music and drama, part of this appeared to be because they felt students were looking for lessons in which they were not expected to write a large amount:

'There is more of a discussion and I think that's what happens with the learning as well and I think because things are much more verbal particularly the kids who don't particularly like writing loads'. (Drama T3)

Writing was seen to impinge upon the practical aspects of performing arts lessons:

'I try and not do a lot of writing, because I think it has a massive infringement on musicality and the practicality of the lesson, and that is what students are looking forward to'. (Music T8)

Some of this was seen as an issue with time:

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'I don't do written work with Year 7 and 8 because there's not enough time'. (Music T9)

Despite a consensus that performing arts pedagogies are primarily practical and that written work is kept to a minimum, many teachers discussed including at least some element of written work that students complete. Most were clear that it was not a pedagogical choice, but rather a way of demonstrating that students are making progress throughout lessons. Most of the written work was in the form of a journal or log that students filled in when reflecting on their progress within lessons:

'We've revised our learning journals, so that there is an evidence of written progress in that, and our listening journals at each Key Stage'. (Music T2)

'We have a learning log. Their written work in music is they write in a table at the end of the lesson, they just write a statement or two about what they've learnt in the lesson. Other than that, there's no need to do anymore writing in class. That's our normal'. (Music T3)

The learning logs or journals were mostly introduced to ensure that performing arts lessons met the expectations of the school marking or feedback policies:

'I've got them kind of they're going to do some zonal marking but just literally where they pick a bit, check through, check they've got keywords and things … it fits in with the school policy but I've still got the bulk of what I wanted with the verbal feedback'. (Drama T3)

'I think the learning journals, to a degree, is a bit of jumping through hoops. But if it's what needs to be done…'. (Music T2)

One teacher said that the journal was a form of evidence, and students were writing down her verbal feedback usually:

'Those are things that I've literally verbally said to them and they need to write it down. It's a bit of a pain that they have to write it down every time and they need to have this evidence'. (Music T6)

As with other teachers, they said that:

'Initially I did it as, 'This is proof. If they want to do a marking scrutiny this is their proof. I'll just do it for that''. (Music T6)

Although, for them, this had become something that they felt was a useful pedagogical tool rather than solely an exercise in evidence generation:

> '[I'm] now realising what the students are like and that they actually need to be able to do that to have understood my feedback is actually a very useful tool'. (Music T6)

Not having a book or completing written work was seen as a performing arts-specific element of pedagogy. While it was noted that Physical Education did not usually write things down in books, teachers felt that it was more expected that classroom-based subjects would do this. The majority avoided having exercise books, preferring instead to create their ownbooklets. Where performing arts lessons were taught by non-specialists, exercise books were more common, described by one teacher as a comfort to non-performing arts specialists:

> 'A lot of our non-specialists are English and history teachers and particularly the history teachers were like "no they need exercise books" … I suppose they needed the comfort of a book so yeah so that was why we kind of ended up kind of going more that way'. (Drama T3)

Feedback is verbal

The reason most performing arts teachers avoided written work primarily was that they pointed to verbal feedback as the norm in performing arts pedagogies:

> 'I do think that's a feature of the arts, yes. I think that, by its very nature, we can give a quick piece of verbal feedback that's then implemented straightaway'. (Music T5)

> 'That verbal feedback is super important and the most valuable type of feedback we give'. (Music T2)

> 'I've been quite vocal that we don't do at KS3 written feedback that it is verbal'. (Drama T3)

The large focus on verbal feedback within the performing arts left some teachers feeling tension with the need to provide proof of feedback. One teacher talked about having to record themselves giving verbal feedback:

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'In a previous school. Almost they didn't believe that we were giving verbal feedback. We would go around, and you know we had the mp3 recorders. The kids would perform and you'd keep the thing running while you gave them their other feedback'. (Music T6)

Others were more insistent that:

'There's no need for the proof. The proof of the feedback is that they can now do it right. That's all'. (Music T5)

'We do not need to have something in a book every single lesson. That is not going to achieve anything and it is just going to take 10 or 15 minutes out of the lesson in the first place. What students need to see is progress over time'. (Music T8)

This tension was because of school policies that did not fit the performing arts:

'I've struggled in performing arts to make the school marking policy work in general'. (Music T9)

The struggle to fit school policies was something echoed by several of the teachers who identified a larger tension between school and the performing arts; where several teachers talked about balancing being a part of the school community while teaching performing arts in a way that was true to their aims:

'it's that it's that balance, isn't it a part of you, you want to teach drama in a way that a school would expect you to teach drama'. (Drama T1)

'I want to be consistent with the rest of the school. I want to match up with the school because I want to be part of the school community'. (Music T6)

4.2.4. Assessment is Holistic

Assessment is holistic in the arts and focuses on more than measurable, fixed expectations of the outcome. This was regularly raised as something specific to the performing arts and was described as different by almost all the teachers both in the ways that it is offered and the content of that feedback. Most teachers talked about being unable to fit performing arts assessment into the ways that schools typically wanted teachers to manage assessment. They often pointed to a renewed focus on the sequencing of the curriculum and how it encourages progress and builds upon past knowledge. Teachers described this turn in opposition to many

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of their assessment practices within the context of performing arts education, feeling that the new linear models of progression and assessment as a way of being held accountable for the progress students were making were at odds with the models of pedagogy and assessment within their subjects.

Teachers described school policies where they had steps of progress that students were supposed to follow:

'One person is in charge of all of the steps of progress for year seven. When key stage levels or national curriculum levels went, we've got these steps of progress from one to nine, very loosely showing progression that are supposed to follow through to GCSE and A-level'. (Music T3)

Teachers talked about how performing arts are generally different in their assessment practices:

'We can be consistent to a certain degree but when it comes to things such as assessment they have to understand that we are different'. (Music T6)

This was felt particularly keenly in discussions about student progress and using assessment to measure that progress over time. Progress is often discussed within school policymaking as something that should happen linearly and on a constant upward trajectory; however, many music teachers struggled to fit their subject into these understandings of progress and assessment. Teachers compared assessment in the performing arts to that in other disciplines, such as STEM subjects feeling that assessment expectations and guidelines were often designed with STEM subjects in mind:

'I think with science and maths, there is very much this quick, 'You need to learn this and you didn't do it well enough. Therefore, when you've learnt it, you will then be this number ... with English, and any art form, I think you're saying it's this nuance of all these things make up a stronger skill level'. (Music T2)

This feeling of difference was not seen as a solely performing arts issue, with teachers grouping performing arts alongside subjects such as English.

Teachers talked a lot about measurements of pupil progress within the performing arts reporting that they felt progress was more nuanced because of the skills that were needed and how students developed those skills. Even when teachers spoke with more confidence about their assessment of progress, they still went on to say:

'…but I don't think our measurements of progress they're [senior management] very happy with'. (Music T2)

Other teachers struggled more with how to demonstrate that students had made progress:

'…it [progress] kind of almost discretely happens in the performing arts and I think if you're a performing arts teacher you can see it and the problem we've got is we've got people coming in who aren't from a performing arts background at all and they can't see it'. (Drama T3)

The same teacher went on to say that what performing arts teachers consider progress might look different to those who are coming in to observe them:

'And I think that's the bit that the non-specialists find quite difficult to understand and especially if I've gone out and I'll think I've had a great lesson but someone's maybe come in and gone like there wasn't 'there is this this and this'. (Drama T3)

This meant that teachers felt it was hard to demonstrate progress in the way that observers (often senior leadership teams or Ofsted) were looking to see:

'I think it's a really difficult thing to show progress … when you're trying to measure this progress, you can take them through an assessment, and actually, you can say, this student has been able to demonstrate this, this and this. And that could be in year seven, you can actually get to year eight and actually a child loses confidence or they don't feel so secure in the work. And actually trying to evidence that they've made that progress previously is really, really difficult'. (Drama T1)

Teachers described many outside factors that impacted students' progress both within lessons and in end-of-term assessments. Many teachers felt that their assessments were based on more than solely academic achievement in a measurable way, with many teachers drawing on factors such as engagement, effort, or self-efficacy in their assessment practices. Engagement was seen to be a factor:

'I really take it down to engagement, it's about students connecting with certain pieces of work or connecting with certain people'. (Drama T1)

This was something discussed by other teachers, although in slightly differing terms, with one saying that:

'The only way that students are going to make progress is if they have got self-efficacy, feel like they are making progress and can recognise it themselves. If they cannot do that, then there is no point at all'. (Music T8)

Others talked about the amount of effort students made as a measure of progress, with one using markers of effort over progress scores as a way to assess student progression:

'At Key Stage 3. It's more about the amount of effort and application that you've put into the task, rather than the outcome, really'. (Music T1)

Accurate Assessment is Challenging

The introduction of measures such as self-efficacy and engagement meant that assessment was then seen as less robust in its applications and uses within the performing arts classroom as a measure of student progress. Teachers themselves critiqued their own assessment practices at KS3, with one teacher admitting:

'For Year 7 and 8, it's definitely a ropey one, and something I've just got away with really, but it's been quite nice at the same point. It's nice not to have that pressure, I think'. (Music T9)

Another said that they were unable to give accurate assessments given the amount of time dedicated to music on the curriculum plan in schools:

'The truth is, in year seven and eight they're not accurate because we haven't got the time to get to know a student. With one hour a week with year eights, for example and a five-week half term, the fact they need a data drop in there'. (Music T3)

Others agreed that the lack of time in the classroom with pupils had a detrimental effect on their ability to assess students accurately:

'So, they're given a minimum target and, if I'm really honest, because I don't do formal assessment, it's a bit of a guessing game and I've, kind of, got away with it because I see them so infrequently'. (Music T9)

At KS3, teachers often talked about general assessments based on teachers understanding of students' achievements rather than having formal assessment guidelines:

'In terms of assessment and in terms of creating a, sort of, pathway for the children, it's just a general loose build-up of musical skills. We don't actually have a tight assessment structure that's written out'. (Music T1)

This was partly down to teachers feeling they were unable to quantify measures of progress that they felt were important such as effort or self-efficacy:

'it's much more than a bit of paper because you can't really quantify that personal growth so that's what makes it difficult for people to understand'. (Drama T3)

Some also saw this lack of specific assessment guidelines as a way of ensuring that assessment remained something that drew from various sources of evidence of student progression:

'The large assessment is some kind of recording, either a performance or a composition. But there is holistic assessment around that of their listening diaries and their booklets as we mark them through as well'. (Music T6)

Teachers overall agreed that their assessment was based more on skill development than it was on the outcome, particularly at KS3:

'The way we assess at Key Stage 3 is we're assessing them on the skills that they're learning at that particular point anyway, so it is a bit up and down'. (Music T2)

Progress is Not Linear

This idea that measurement was different and so there was room for more peaks and troughs within the progress students demonstrated was something repeated by many teachers. Teachers were emphatic with their rejection of the idea that pupils make linear progress within their performing arts education:

'I do not think it [progress] is ever linear and I think we try to make it linear'. (Music T8)

'No, that doesn't sit comfortably with me at all, because music progression isn't linear'. (Music T3)

Different skill sets

Much of the inability to make linear progress in performing arts was seen because of the nature of performing arts as a discipline and the ways in which they are conceptualised and

taught within the UK secondary classroom. Much of the focus on the curriculum at KS3 is introducing students to a breadth of musical styles and instruments, and while this builds generalist skill levels, the specific achievement levels are seen to vary from topic to topic:

> *'I think that progress can be measured differently in music and the arts subjects because there is so much variation within them'. (Music T5)*

> *'I know in maths, you start a new topic, you start from scratch, but it's not in the same way'. (Music T4)*

One of the fundamental aspects of performing arts and how they are conceptualised in the UK curriculum is the delineation of each discipline into three distinct strands: Performing, creating and analysis. In music, this is taught as performing, composing, and listening; in drama, this is taught as performing, devising and analysing plays. Teachers felt that this was one of the reasons that performing arts see students make non-linear progress:

> *'In history or English, not that the skills transfer more, because all skills in music transfer, but in music, there's three very separate disciplines already that you have to master, composition, performing and listening, and only your top musicians, I guess, are amazing at all three'. (Music T9)*

Teachers highlighted the differing skill sets needed for each strand of the curriculum, with each strand requiring students to master different skills:

> *'Who's to say that, like I say, they've done very well on a piano module at the beginning of the year and then the next module that we do is a composition one and, even though they may have some integrated elements, they do really poorly in the composition one, does that mean that their progression has got worse or does it just mean that we're using a different skillset that needs to be judged separately?' (Music T5)*

This led to teachers often being asked to justify the assessments and progress made by students with one teacher saying:

> *'We've sometimes had it questioned, 'Why has that child gone backwards?' It's like, they haven't gone backwards, they were performing and now they're composing'. (Music T3)*

Alongside the challenges with measuring different skills, teachers also highlighted that a curriculum that offered a breadth of study meant that they opened themselves up to further questions about progress if students were given opportunities to play different instruments, it would not be possible to consistently make upwards progress:

> *'How do you assess progress of a piano against a guitar? If you're doing brilliantly at a piano module and then you try the guitar and you do absolutely rubbish, does that mean you've not progressed well? Not necessarily'. (Music T5)*

Teachers felt this though that this was reflective of the reality of the discipline with themselves, identifying that this was true for themselves as well as their students:

> *'I cannot play the drums for the life of me. I am not able to coordinate the hands and the feet. Now, that is nothing to do with my musicality, because I can identify what is going on in a drum beat and I can play the rhythms. But I cannot physically coordinate all those parts together'. (Music T8)*

This idea that ups and downs in progress were natural within the discipline and professional life were discussed by multiple teachers who had seen this in their career as well as with the students they taught:

> *'like anyone, you know, think about your acting career or whatever else, I can tell you about plays, I've written that have been really good. And I can tell you about plays I've written that have been dreadful'. (Drama T1)*

These dips in progress were also attributed to the fact that performing arts pedagogy encourages students to make mistakes and take risks:

> *'I think that's where I think drama, music, arts, they're kind of slightly different because actually, we kind of always encourage students to, to try things and make mistakes. And if they make a mistake, then nothing bad happens, you know?' (Drama T1)*

> *'We want that of the kids, don't we, as music practitioners and as teachers, we want them to take musical risks and be creative and try new ideas'. (Music T2)*

Teachers all felt that students made progress in the performing arts, but this did not necessarily fit in with the school's or Ofsted's view of how and when progress happens. Within

performing arts, there seemed to be agreement that this progress is observed over a longer period and that progress within a single lesson is often unrealistic:

> *'You can definitely see progress within a half term of lessons. The idea that you'd see progress within a lesson all the time, actually see it and be able to document it, I'd struggle with as well'. (Music T3)*

> *'The idea that you'd be observing the staff at the end of a lesson, and you could demonstrate the progress being made, when we know, you know, from any single study done into performance, that there is a period where, before something gets better, it gets worse'. (Music T10)*

Teachers, by and large, felt that progress between years was more realistic within the performing arts, whether there was progress in understanding keywords or progress in skills. The idea that the skills that were being assessed were fundamental skills and vocabulary that take years to understand and develop the confident use of was one shared by several of the teachers:

> *'Students do not just immediately know keywords and will not just pick it up with one project. It is over time that they will get that knowledge and information'. (Music T5)*

> *'Even then, we would traditionally do at least one composition module in Year 7 and another one in Year 8 and another one in Year 9 and it may be more effective to compare them between the years instead of comparing across the length of a year, if you see what I mean'. (Music T8)*

Jumping through assessment hoops

Despite the differences in performing arts assessment, teachers were largely still obligated to follow school assessment procedures and demonstrate student progress. This disconnect meant that teachers often described assessment practices that did not seem congruent with their pedagogical practices. One teacher talked about the process of assessment within their drama lessons:

> *'The whole principle is that you've got lots and lots of different criteria that are matched to, you know, working towards GCSE level. And that's what we're assessing the children against each term … the students are able to set themselves*

targets based on these things, so they can see the progress they're making. But I suppose I've questioned its validity sometimes'. (Drama T1)

While for this teacher, their students could see the progress they were making, it appeared that this progress was to all intents and purpose meaningless, given the teacher was questioning the validity of the methodology used to make these assessment judgements. That same teacher went on to say that they felt that it *'often it feels slightly disconnected to the reality of the student' (Drama T1).*

Teachers described meetings with senior leaders in which they looked to do things differently as a department. One described that they saw the whole school policy as box-ticking rather than as something that worked for them as a department:

'In department meetings I'll say, 'I get why they're doing it to tick a box. Actually, it doesn't make any sense, and can we do it like this?''. (Music T3)

Other teachers described their end-of-term assessment by saying:

'The end of the term project where it might test some knowledge that has been learnt during that project, along with an overview approach. But keeping that to the absolute minimum'. (Music T8)

Then went on to say that the test of knowledge for students was game playing:

'So, yes, I am just trying to play the game as much as I can at the moment because I want to make it work'. (Music T8)

4.2.5. The Fight for Survival

Teachers felt left out of many of the national and school-level conversations of curricula, feeling that performing arts as a subject was not valued. This lack of value offered some sense of curricula freedom for teachers at some points while also constraining it at others

Lack of Support Nationally

The teachers, almost without exception, highlighted a lack of support nationally for the arts:

'I think that just what I see and what I read and everything, I just think there's a devaluing of performing arts. Just because of the national conversation'. (Music T1)

Generally, exclusion as a subject from the national policy was identified as a big factor for the lack of support:

> *'I do not have a clue [why arts isn't in EBACC], because I think there are enough people that would call for it'. (Music T8)*

> *'I think that the fact that feature drama doesn't feature the national curriculum is a massive thing'. (Drama T2)*

Other factors raised by teachers were curriculum time and a lack of funding:

> *'Generally, I worry for it. It seems definitely to be being squeezed more and more, one, with funding, and two, with the value in the league tables and curriculum time'. (Music T7)*

Some teachers felt that the attitude towards the arts was dependent on place. For some, that variation was regional:

> *'I think it massively depends regionally and the understanding of what the arts can provide for you, and in Bristol and South Glouc, whilst Bristol is obviously great for music, they are not seeing that in this area. They are not realising the potential of it'. (Music T6)*

> *'We're in West London where they have a view that performing arts is not necessarily the most important of the things'. (Music T10)*

For others, they identified differences even between schools in the local area:

> *'Sitting there with heads of music that just, they don't have the same… their issues are very different issues. You know, if your issue was, 'I can't find an oboe teacher this term', if that's the level of issues that you've got, that's a very different set of priorities to my pupils'. (Music T10)*

Valued For Extracurricular Activities at School Level

Most teachers in this study initially said that they felt music was valued at their school despite the national picture, with many of them describing that they were lucky to be supported at their school or expressing a sense of disbelief when they received support:

> *'We were really lucky. really fortunate. Yeah, we were. Yeah, we were really supported'. (Music T2)*

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'They are very supportive actually. I'm astounded'. (Music T6)

'It's been really nice, one of the senior leaders has really backed me'. (Music T3)

When they continued to describe the ways their subjects were valued in their relative schools, it became clear that in most cases, the school valued the performing arts for the extracurricular activities, with much less value and support for the performing arts as a curriculum subject:

'I think we're viewed as a nice add on … and a bit as in we can do a nice school production or something nice to market the school and get people in'. (Drama T3)

'Where I am, we are lucky. It is very valued by the school, but it is often valued the extracurricular more than the classroom because it's, 'Right, let's put this on because this makes us look good. It's great in the photos, and the brochures, and when people are looking round'.'. (Music T7)

'I think that they [performing arts] are appreciated in school context. I think that they are enjoyed by many and will often be used as the school promotion material and various other things. I think they are considered highly in an extracurricular capacity'. (Music T8)

'It's always had a very high profile in the school. Weirdly, at times it's the extracurricular that overtakes more than the curriculum. Especially when you get into a period like Christmas or Easter where there's so much going on'. (Music T3)

As a curriculum subject, teachers felt that the school did not know what was happening in the curriculum and, for the most part, showed little interest:

'It is really valued. It is hugely valued, but I don't think they're particularly bothered about what we do in the classroom'. (Music T7)

'A lot of people say it's a very good music department, but weirdly they mean it for the concerts. They don't actually mean it for the music because they don't know what's going on in the classroom at all'. (Music T3)

'They will never deep dive drama'

Performing arts teachers generally felt they were left alone, and for the most part, they enjoyed the freedom that typically came with this:

'We're kind of an exception to the rule, which is quite nice. Again, we can do our own thing. No-one has told us not to, so we kind of- Until someone says no, we're going to carry on doing that'. (Music T2)

For some teachers, this meant they had a physical separation from the rest of the school, either in dedicated rooms, often above Physical Education departments or sometimes in separate buildings:

'We've got one music room, with your keyboards around the edge, 15 keyboards, and it's an old- What's the word? It's a corrugated iron building, which was where they kept the old biplane in the First World War. So, it's like this outbuilding, it's rubbish, it's awful'. (Music T2)

Some teachers liked this separation as it afforded them a certain sense of pedagogical freedom, particularly when it came to students using practice rooms:

'It used to be public when sending kids to practice rooms … It makes such a difference to have dedicated space. If people are passing, no one is looking in and being nosy, which is what used to happen … Whereas now we're out of the way and no one bothers us, apart from for good things, which is nice'. (Music T3)

Most teachers felt that they were allowed the freedom because they achieved good results:

'We are quite a successful department and the numbers kind of speak for themselves, so we're kind of left to it. Which is great. It's really good, because it gives the freedom'. (Music T2)

'We're lucky that we have that freedom. Nobody has ever really looked at the music department. Because we get good results and we do good concerts, they don't touch our curriculum'. (Music T7)

'I think the results have almost spoken for themselves and that affords the department that extra time to do what they like'. (Music T5)

Recruitment to KS4 and KS5 Important

The understanding of what made a successful department among the teachers interviewed was almost entirely based on the number of pupils they could recruit into their subject for KS4:

'We are a successful department and numbers speak for themselves' (Music T2)

I think we are judged by the students that we manage to take. Because everybody gets to take science. Great'. (Music T8)

Feeling that the judgement of whether or not they were a successful department came from the numbers they recruited meant that teachers were conscious that recruitment had to be a focus. This included comparing themselves to the national average to work out how successful their recruitment had been:

'I think my numbers will be close to 30, which is brilliant, out of a cohort that is 180, I think. So, that will be really strong. Nearly 20%, which is above national average, if we can get there. But where have those numbers been taken from?' (Music T8)

One teacher had struggled to maintain the numbers taking performing arts at KS4 as her curriculum time at KS3 had dropped to once a fortnight:

'I worked really hard to recruit and the numbers went really high again, but the one hour a fortnight definitely does impact on the numbers'. (Music T9)

Teachers talked about having to market a course, and one felt that the course name did not do them any favours:

'I think we've got a bit of work to do on getting them to understand digital music production. Weirdly, I think it's because music is only sandwiched in the middle of that. If it was called BTech in music technology, I think it would get more interested. It's really hard that we have to work out how to market that course'. (Music T3)

Numbers ultimately matter hugely at KS4 and KS5, as in most schools; if subjects do not recruit the required numbers, the courses will not run:

'IB music has now stopped. So, I've got a Year 13 cohort at the moment, I don't have Year 12s and they're not running it in September. It doesn't make enough money because we don't get the numbers'. (Music T9)

Many teachers highlighted a sense of constant pressure to ensure that they kept their classes at key stages 4 and 5:

'There's an element of, you know, we've got to justify our existence. You know, we're fighting to have Key Stage 4 or Key Stage 5 classes, whereas, you know, a maths teacher will never fight'. (Music T10)

'It's a constant struggle, I think. It's like every year, when you have options for GCSE, you're a bit nervous. Every year, isn't it? You know, that's never going to go away'. (Music T9)

Teachers shared a sense that they needed to invest heavily in their department to ensure its survival:

'I think, in a sense, you've got to invest in your own department in terms of what you're doing to almost justify your subject, which I suppose you shouldn't have to, but it's just almost a necessity, I think'. (Music T4)

Even in departments that were fairly positive about recruitment in music, they saw a different picture in drama and dance:

'We're going to have to fight quite hard for over the coming weeks. So, it's not all positive, there are still some battles to fight … I'm now fighting really hard to get drama and dance back into the Key Stage 3 curriculum'. (Music T2)

The constant concerns about recruitment appeared to have fostered a sense of competitiveness between departments in many schools, with one teacher mentioning the regular animosity between physical education and music:

'We're all fighting the same battles, though, let's just get on with each other', you know? 'Let's just schedule hockey for when choir isn't on or vice versa. Just do it'. It's not hard'. (Music T1)

Teachers who had improved numbers reflected on which subjects had lost students:

'Who has lost out? What impact has that had? Because I think they have used to the last couple of years of music not getting its numbers and other subjects being bolstered up by that. But actually, what impact is this going to have?' (Music T8)

Whether music was successful in recruiting high numbers, teachers were still concerned about the potential impacts on the wider school curriculum offer.

Overlooked in the Curriculum

Alongside this sense of freedom that teachers discussed earlier; there, was also a feeling of being overlooked:

> 'We could just be left to go along the background. Yes, as long as we keep turning out the shiny performances for Open Morning and that sort of thing'. (Music T7)

Alongside being overlooked, the lack of support for curriculum music became very apparent as a result of many schools' changes to the time allotted to performing arts at KS3:

> 'The slimming down of hours is where I guess they're not valuing it … the year that I started, they changed from once a week music at Key Stage 3 to once a fortnight. Key Stage 3 is only Year 7 and 8 at the moment. Year 9 is GCSE option. So, it's only for two years… even though it sounds quite a drastic measure, they'd already done the same thing with drama. So, drama had had their hours reduced, and we also have dance on the curriculum which takes up another hour'. (Music T9)

Another teacher described a struggle with KS3 drama, where they had a significant take-up at A-Level for theatre studies, and yet drama had been removed from the KS3 curriculum:

> 'Theatre studies A-Level here is phenomenal, they've got 32 in Year 13 doing theatre studies A-Level. Whereas lower down the school, there isn't that perception … It's got a brilliant reputation at A-Level, but there isn't drama provision lower down the school to the extent that I want it to be'. (Music T2)

Other teachers struggled more at KS4 as they found that options choices became more limited at their schools. One teacher described how at their school, the number of options students could pick had been reduced as the pressure on the school increased to get good results on what they felt were harder GCSEs:

> 'At my school, they can only pick nine GCSEs. So, you've got double English and then if they want to do the three sciences and then maths. So, it basically leaves one option for them to pick'. (Music T1)

Another described how they lost their key stage 5 music group when the school did not advertise it:

> 'We did a physical open evening and virtual. Music was on the list, but they didn't promote it. They didn't even put signs up. They didn't put anything up. They didn't

want it to run because they knew the numbers were going to be so small. So, I took that on the chin a little bit'. (Music T9)

Where performing arts remains an option at key stage 5, common to many teachers' experiences in various regions was a 'fourth A-Level mentality'. Many teachers described this as a problem within their A-Level cohort when it came to performing arts subjects choosing it as their fourth A-Level as parents viewed it as the subject students can do because they enjoy it, rather than it having any benefits academically:

'Mummy and daddy have told them to choose three academic A Levels, 'But you enjoy your music and we've invested £20 a week in your instrumental lessons, so your fourth A Level you can choose yourself, because you enjoy it''. (Music T2)

Those students are often then advised to drop their fourth A-Level:

'They'll often pick it as a fourth A-Level and then be pressured into dropping it so they can focus on their real subjects. Yes, so that's tricky'. (Music T7)

Teachers often find that parents encourage students to take 'proper subjects' over performing arts subjects:

'The arts generally at the school I'm at—I'm including English literature with that, as well—we tend to find that the parents, because they want them to go on to be rich and successful in their careers, they go, "Darling, yes, you're wonderful at music. You can carry on doing it as extracurricular, but you need to do a real subject".' (Music T7)

Some teachers even find that senior leadership teams can add to this pressure:

'He was flatly told by the headteacher, 'Are you sure you want to take music as your third option?' (Music T8)

Constantly Justifying Their Subject

Teachers talked about a constant feeling of justifying their subject, to colleagues, to senior leadership teams and pupils and parents. Every teacher we spoke to in this study said that they felt performing arts was misunderstood as a subject:

'I don't think, like I said, I don't think the other teachers realise. They don't know what it is'. (Music T7)

Others felt the misunderstanding lay more in the performing arts as subjects in their own right:

'I think there is a massive lack of understanding of it as a subject and not just of it as a teaching tool or a pedagogy'. (Drama T3)

Teachers felt that the biggest misconception people had was that it was a solely practical subject with little underpinning theory and, therefore, not academic:

'I think, generally, people are just like, 'Oh, yes, music, you just have a bit of fun and you just do this', or, 'It's nice to have a bit of fun, nice to have a bit of a break, nice to do something that isn't academic', it's all that kind of thing'. (Music T1)

'They think we just play. Most of them don't realise that there's any written element'. (Music T7)

'I think they think that it's more of a practical subject, where we all flounce around a little bit and, as you know, it's not'. (Music T2)

'You don't just get to come, dick about in a practice room for an hour and get an A-level in Music at the end of it'. (Music T4)

'They don't understand, hang on you don't understand what Performing Arts is because they are the ones who are in the corner going 'oh performing arts is it being a tree' actually it isn't'. (Drama T2)

Teachers felt this left other colleagues feeling unsure about what performing arts lessons look like:

'I think they're probably a bit unsure about what lessons look like, and whenever I've been observed in lessons, they've always been, 'Oh, wow, I didn't quite realise how intense that was or how hard you had to work''. (Music T4)

Many pointed out that other teachers struggled to understand the pedagogy used in the classroom, with one teacher saying:

'They feel that it's, you know, a really noisy environment, or the kids are out of control or whatever else. And I think it's, it is a misunderstanding, I don't think enough people get it in terms of what you're asking the students to be able to do'. (Drama T1)

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This meant that a lot of teachers said they were unsure about asking colleagues to cover lessons, with one saying:

'I wouldn't want to inflict, say, a performance lesson on someone who doesn't really have experience of that. But generally, they say, 'Oh, wow, that was much harder work than I expected''. (Music T4)

Teachers said this misconception affected the attitudes of other colleagues when it came to choosing options:

'There are still teachers who will angle students away from it or even, 'You have some behaviour issues, we'll push you towards doing arts and so forth''. (Music T5)

'We often get kids, strangely, choosing biology and music—I'm not entirely sure the crossover—and the biology teachers in particular telling them that they should drop music to focus on a real subject'. (Music T7)

'In my previous school, which was a very academic-driven school, there was a lot of pressure. 'It is just music'. … I think there is perhaps a lack of knowledge. I think there is a desire for all institutions to play it safe. I think that is also then reflected in what the students choose and what parents advise as well'. (Music T8)

4.3. Discussion

This section discusses the findings described in section 4.2 within the context of current literature. The first subsection focuses on the *domain of the empirical* and describes events as they were experienced and observed by teachers. This data used within the domain of the empirical is qualitative data about events that teachers observed and experienced as a teacher of performing arts and was gathered through the interviews conducted as described in Chapter 3 (Methodology), section 3.4.1. The second subsection goes on to examine these experiences in the domain of *the actual* to understand the events (both observed and unobserved) that entangle teachers' beliefs and their resulting practices. This is done by examining teachers' reported practices alongside the school-level policy environment affecting those enacted practices. The third and final subsection then expounds the Dampened Curriculum, offered as a potential causal mechanism to explain the differences in teachers' described and enacted practices. This is done by drawing out teachers' practices in

relation to their beliefs and seeking to understand the wider policy drivers that ultimately influenced curriculum design and enactment at a classroom level.

4.3.1. What are teachers' current practices and beliefs concerning the English Secondary Performing Arts Curriculum?

The findings from the first study of 16 secondary performing arts teachers offer a detailed and up-to-date understanding of their current practices and beliefs about the English Secondary Performing Arts Curriculum. The performing arts teachers in this study described the performing arts as a set of unique subjects in the way that they approached all three aspects of the curriculum as conceptualised by Ofsted (2019), intent, implementation and impact. They outlined aims (intent in Ofsted's conceptualisation) for their curricula that included wide conceptualisations of knowledge, what it meant to know within the performing arts and how this influenced their curriculum design. The findings show that when teachers design their performing arts curriculum, they are engaged in a careful balancing act to ensure a wide variety of knowledge is included. This includes balancing the three 'pillars' of the performing arts (O'Toole and O'Mara, 2007), as well as more fundamental epistemological considerations of propositional versus procedural knowledge such as balancing theory with practical music and drama-making opportunities.

Their implementation of the curriculum was described as unique, with all the teachers in this study clear that the performing arts have signature pedagogies (Shulman, 2005). The findings from this study demonstrate that performing arts teachers see performing arts pedagogies as highly practical, prioritising verbal over written feedback, including holistic assessment, and where mistakes are actively encouraged. When it came to their impact, they described subjects that did not make linear progress, and the findings demonstrated that teachers did not feel progress was ever linear in the performing arts, mainly as a result of their signature pedagogies that included holistic assessment practices, where students' personal development competencies such as confidence influenced their progress. The findings showed that this, coupled with pedagogies that encouraged students to make mistakes, led to assessments of progress that resulted in the appearance of regressions. The teachers in this study strongly believed that the performing arts was misunderstood as a subject within their

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school, feeling that their subjects were often marginalised as they were not considered 'academic'. The findings suggest that the teachers believe that this marginalisation was primarily as a result of their disciplinary differences and the complexities of curriculum implementation and measuring of impact.

Performing Arts Subculture

The performing arts teachers in this study felt overwhelmingly that the performing arts as a discipline is unique with its specific subculture (Ball and Lacey, 2019; Goodson and March, 2005). This feeling of uniqueness was ever-present in their discussions of the performing arts curriculum and their classroom practices. Many teachers felt that many performing arts practices were misunderstood, particularly by Senior Leadership Teams (SLT). This was particularly evident in their concerns about how their practices appeared to senior leadership, for example going back to one teacher's quote:

> *'when senior leaders walk into a room and you've got your lesson observation, it's very hard to argue when something looks a bit rubbish by the aesthetic view that person has. It's very hard to argue, "Yes, but you don't see all the work that goes into it"'. (Music T10)*

This teacher particularly felt their practices did not meet the 'aesthetic view' their SLT had of what good practice should look like while being observed. This idea accords with Bernstein (1990), who speculated that 'generic' modes of education often came into conflict with the 'singulars' and, therefore, offer a challenge to the sacredness of subjects. This was observed in this study as there were many times teachers demonstrated a need to maintain disciplinary integrity, particularly when describing how they had designed and implemented their performing arts curricula. This and other comments regarding the way that performing arts was misunderstood as a non-academic subject, often by other teachers, suggested a feeling by the teachers interviewed in this study that performing arts was a unique subject with its own disciplinary identity, built through their subject loyalty (Bernstein, 1990). These disciplinary differences were manifest in the teachers' descriptions of their approach to teaching and learning, both what it means to know within the performing arts and what constitutes successful pedagogy.

Teachers' practices and beliefs in this study appeared to be influenced heavily by their performing arts education both inside and outside formal educational settings. For most teachers, this educational identity (Bernstein, 1990) was developed through their own educational experiences, particularly their extracurricular ones. Many described extracurricular experiences as where they learned to love the performing arts and where most said they had discovered their aptitude and interest in their subject. What was particularly interesting was that when asked about their performing arts education, the majority gave more detail about their extracurricular experiences of performing arts both at school and outside school than they did about their classroom-based teaching. Where teachers recalled their classroom-based performing arts education, this was often to highlight practices they had experienced while at school that they sought not to repeat in their classroom. This was particularly evident in their discussions of inequity they had experienced as pupils, for example, the teacher who recalled that her brother was not allowed in the practice room as he 'wasn't one of the favourites' (Music T1).

It seemed for the teachers in this study that their beliefs influenced their practices, something supported by existing literature (Burnard, 2009). What was interesting was that many of the experiences performing arts teachers drew on when discussing their education were from extracurricular activities, something that has been suggested by previous literature that considers the complexity of performing arts teachers' practices, including the influence of experiences outside formal education (Schmidt, 2012). The teachers in this study and their discussions of disciplinary differences and influences indicated that their early influences in forming their own educational identity (Bernstein, 1990) appeared to be drawn from the modes of teaching enacted in extracurricular settings. This may be one of the reasons for the findings that teachers of performing arts feel they have their specific discipline subculture drawn from teaching practices experienced outside formal education.

Ultimately, teachers in this study described their disciplinary differences with respect to three fundamental aspects of curriculum design: what constitutes knowledge, their assessment practices and their pedagogies. These three aspects are mapped almost exactly to the current curriculum guidance from Ofsted (Ofsted, 2019) that seeks to inspect schools' intent, implementation, and impact—that is, the knowledge that teachers aim to teach (intent), their

pedagogies (implementation) and how they assess (impact). These specific aspects are considered in turn below.

Ways of Knowing are Highly Situated and Complex

Teachers in this study were clear that within their understanding of their discipline subculture (Bernstein, 1990), and that for them contextual knowledge is distinctive and complex. This was evident primarily in the findings relating to teachers' aims for their curriculum when trying to outline 'knowledge and skills to be gained at each level' (Ofsted, 2019).

The performing arts teachers in this study acknowledged the skill versus knowledge divide present in current educational policy (Muller and Young, 2019; Hirsch, 2006), and it was often raised when discussing their aims for their performing arts curriculum. Many teachers suggested that the performing arts is uniquely positioned in its combined approach to including knowledge and skills in the curriculum. In discussions about what constituted knowledge and what constituted a skill (see section 4.2.2), most teachers struggled to separate the two, pointing out that they were so intrinsically linked in their subjects that to remove one was impossible. This understanding of knowledge as something intertwined with skills and understanding has been discussed in a music context previously (Savage, 2021); however, it is clear from this study that this understanding of knowledge as both skill and understanding is something also observed in drama, not solely within music as suggested previously by McPhail (2016). This suggests these are not debates reserved only for the secondary music classroom but rather are relevant to the performing arts in general.

In trying to balance both propositional and procedural knowledge (Bruner, 1996), many of the teachers described aiming to design curricula that balanced both, describing how they introduced students to the history and theory of their subject alongside ensuring that they had the opportunity to develop specific skills such as how to play particular instruments or how to devise a piece of drama. Many teachers discussed the development of knowledge and skills as something that happened side by side in the performing arts classroom, with little opportunity to separate them. For the teachers in this study, embodied and emotionally-affected ways of knowing were also considered important in their conceptualisations of knowledge development in the performing arts. The teachers' conceptualisations of knowledge discussed in this study appear to have moved away from just considerations of

measurable skills and knowledge as a body of disciplinary 'truths' (Winch, 2013), instead aiming to ensure their curriculum also offered students 'soft skills' (Drama T1), opportunities for 'building confidence' or ways to support their 'developmental outcomes' (Music T1)

Questions of what knowledge development looks like have been considered in music, but little literature discusses them in a drama context. In music, musical knowledge is considered multilayered (Swanwick, 2002b), and theorists have sought to understand the various knowledge structures, particularly to describe how musical knowledge is enacted from conceptual understanding. Philpott and Evans (2016) considered three types of musical knowledge: knowledge *about* music, knowledge of *how* in music and knowledge *of* music. This has been said to be unique to music within the secondary curriculum (McPhail, 2016); however, this study saw that both music and drama teachers expressed the same conceptualisations of what knowledge is within their respective subjects with similar considerations of the intertwined nature of procedural and propositional knowledge. This suggests these are not debates reserved only for the secondary music classroom but rather are relevant to the performing arts in general.

Alongside the combination of procedural and propositional knowledge considerations, another reason that all teachers felt performing arts was unique was its conceptualisation as three distinct but interconnected strands. This is referred to by O'Toole and O'Mara as making, presenting and responding (O'Toole and O'Mara, 2007) and by Swanwick, as performing, composing and listening to music specifically (Swanwick, 2002a). While teachers referenced this as something unique to the performing arts, there are examples in other subjects, such as English, where we see reading, writing, and spoken language strands to their subject (Education, 2013). While English, as one example given by the teachers in this study, does demonstrate similar conceptualisations in terms of strands of the subject, teachers in this study clearly identified stronger delineations between these strands in the performing arts. This was particularly evident in the findings relating to progress (see the findings in section 4.2.4), where they felt that it was only in exceptional cases that a student was equally proficient or skilled in all three strands. As a result, the teachers in this study felt that the knowledge and skills needed for each strand should be more disaggregated in teachers' assessments of pupil progress.

The aims for the curriculum outlined by the teachers as their intended curricula in this study seemed most closely aligned with those of process-based curricula models (Kelly, 2009). However, they also exhibited some signs of an objective-based curriculum. Where they were aligned with process-based curricula, many teachers (as discussed above and observed in the findings in section 4.2.1) demonstrated a focus on ensuring that developmental processes were supported, such as soft skills. However, this was discussed as a strand of their curriculum. One teacher discussed that if they could plan the music curriculum completely themselves, it would be about 'developmental outcomes' (Music T1), while another saw drama as a way for students to 'understand …everything else around them' (Drama Grp2). These aims may suggest that some of the performing arts teachers in this study were conceptualising curriculum as pedagogy, which Philpott (2022) suggests is the outcome of a process-based music curriculum. For them, their aims were seemingly to move away from teaching topic-led curricula as is common in the performing arts, particularly music (Anderson, 2021), and towards one based on developmental processes, including musical or dramatic development. Alongside these competency-based considerations of development, however, the teachers were not solely focused on developmental outcomes as there was universal agreement that the performing arts were subjects in their own right, and as such it seems unlikely that they would seek to enact a curriculum which positioned the performing arts, either music or drama as pedagogies in the way that Philpott suggests (2022).

Alongside discussions of developmental outcomes, most teachers described their intended curriculum as one that should be focused on teaching students an understanding of the *process* of creating work within the performing arts with much less focus on the product or outcome (see the findings in section 4.2.1). Partly this was as a result of seeking to prepare students for life as a musician or dramatists, and this could be interpreted as an objectives-based curriculum (Kelly, 2009). When the teachers later elucidated these aims, many of them discussed wanting students to leave with an understanding of the realities of the industry more than to train them for a specific role, and as such, this then seemed to align more closely with the idea of learning how to learn within process-based curricula models. Drama teachers, for example, particularly wanted their students to understand 'discipline' while music teachers talked about preparing students for the 'rigours and demands of being a musician' (Music T11). The teachers were clear that although they required students to produce a performance, their interest was much less in the quality of that performance than it was in

ensuring students understood the process that led to that performance. These discussions appeared more in line with teaching students' skills and understanding of the industry, rather than just how to be a good musician in isolation.

What is clear is that teachers in this study were aligned with Fautley (2012), who suggested that music education should be based on 'understanding, not mere regurgitation'. Both the music and drama teachers echoed this understanding of what a performing arts education should be, seeing it as a fundamental aim of their performing arts curriculum. In response, teachers mostly sought to design curricula that had specific skills and disciplinary knowledge as their aims rather than specific topic and subject matter outcomes. For example, music teachers wanted students to understand and recognise rhythm and pitch, how they were organised and ordered, and how they could be put together in a performance. Teachers all agreed that these were two important fundamentals of a KS3 secondary curriculum, but the musical context in which these were explored varied between teachers and schools, with teachers in this study clear that it less about the specific music that they were learning about and more a focus on the skills and disciplinary competencies that students were learning. This view of the curriculum as a way of developing particular skills and competencies was more aligned with an objectives-based curriculum (Kelly, 2009) in its aims to 'train' students to be musicians or dramatists.

Performing Arts have Signature Pedagogies

It was clear in this study that the teachers exhibited signs of signature pedagogies (Shulman, 2005) and that they recognised them as such. Although they did not use the term 'signature pedagogies', they clearly recognised their practices as distinct and related to their discipline subculture (Bernstein, 1990). This study offers insights into these signature pedagogies, which are not something that has been explored by secondary performing arts teachers previously, only in other contexts, for example, composer-teachers (Love and Barrett, 2014), creative practitioners (Thomson et al., 2012), or with teacher educators (Baumann, 2010).

This is interesting, particularly in the performing arts as some scholars have asked whether we should be debating curricular content or whether the questions are really about the methods of teaching (Cox and Stevens, 2016). These teachers talked at length about their pedagogies as something that was woven into their curriculum designs and was often given a higher regard than questions of content. When asked what their curriculum's aims were, many of

them referred to pedagogical and content-specific aims. The discussions of process over product ultimately led to teachers giving as much, if not more, consideration to their pedagogies than the specific content they were teaching.

Practical Pedagogies

The performing arts teachers in this study took a practical approach to pedagogy, ensuring that practical music and drama-making were central to their curriculum. They unanimously discussed the importance of ensuring that students were partaking in as much practical work as possible and that learning in the performing arts should take place through practical experiences, which aligns with previous calls in the literature (Hargreaves, 1986; Paynter, 2002). For many teachers, their curriculum was built around ensuring that practical activities should be given as much time as possible and the belief that students would learn propositional knowledge through their practical explorations and discussions. This is perhaps unsurprising, as this mirrors pedagogies found in both music and drama as disciplines where the learning of instruments or practical aspects of drama and theatre are predicated on a master-apprentice model (Daniel and Parkes, 2015).

When describing their intended pedagogies, many music teachers in this study specifically referred to following a musical futures approach (Green, 2001). Although most teachers said that while they had taken inspiration from this approach, they had developed and adapted it, creating a more structured way of offering practical music-making in the classroom that included theory development and practical skill development. Mariguddi and Cain (2022), in a study conducted around the same time as that reported in this thesis, found that teachers were adapting the musical futures approach. In this study, teachers did not mention the underpinning theory of musical futures, instead, they used the approach to embed practical music-making in the classroom and adapted it to ensure musical theory was included, which as Mariguddi and Cain (2022) found, move away from the initial aims of informal, primarily aural learning. There are several possible reasons for these adaptations, and it was not wholly clear whether this was done with the knowledge of the original theoretical aims of musical futures or whether this was more akin to practices seen in a community of practice (Lave and Wenger, 1991; Wenger, 1998), where a shared repertoire of resources was adapted and altered to suit the current teaching practices and context. Many teachers, for example, explicitly mentioned the need to ensure that theory as a form of musical knowledge was

embedded in their curriculum (see the findings in section 4.2.2), and as such it would seem that the adaptations of musical futures, rather than necessarily a misconception on the teachers' behalf, could also have been an adaptation to ensure they met the current requirements of the national curriculum and school-level expectations, as informal practices are often censured in national policy (Mariguddi and Cain, 2022).

Verbal Feedback

The desire to use practical pedagogies meant that ways of offering feedback, currently prioritised in secondary education (Kerr, 2017), had distinct considerations for performing arts teachers. As a result of placing practical pedagogies at the forefront of their curriculum, all the teachers in this study described using verbal feedback as their preferred mode of formative feedback. This has been observed as common in other settings such as conservatoires (Fletcher, Davidson and Krause, 2021), or US secondary settings (Warnet, 2020); however, English secondary education is somewhat unique in its approach to offering a wider conceptualisation of music education.

Despite a different context to those explored in the literature previously, verbal feedback was something that teachers described as commonplace and continuous throughout every lesson and was considered the most effective form of feedback within the performing arts classroom, supporting prior arguments in the literature (Kulik and Kulik, 1988). Teachers felt that this was specific to the performing arts, forming an important element of their signature pedagogies (Shulman, 2005). Although seeing it as specific to the performing arts, they did suggest that it was something they felt other subjects could learn from as feedback in their classrooms was responsive and delivered 'in the moment'.

These teachers described this ability to deliver feedback 'in the moment' as a key reason for their use of verbal feedback. Teachers in this study felt that offering written feedback was less effective as the time between the performance and students receiving the feedback often meant that teachers felt the specificities of the performance had been forgotten. This need for immediate feedback and correction highlighted by the teachers in this study, aligned with suggestions that written feedback is frequently summative (Fautley and Colwell, 2012). They agreed that feedback offered after the final performance or submission of a composition or a script would be feedback offered on the final product, at which point the process is rendered

invisible, as the only part available for comment is the final product. Verbal feedback offered 'in the moment' allows teachers to guide and develop skills and comment on the process more readily.

Assessment is Holistic

Assessment in the secondary performing arts classroom is known to be nuanced, with a long history of delineating 'learning' from 'doing', and it has been suggested that music teachers are particularly skilled at separating the two (Fautley, 2018). As previously discussed within the literature, teachers regularly consider both the students' contribution to the task at hand as well as being able to assess what a student has demonstrated that they have learned from that task (Fautley, 2018). For example, students might perform a piece as the task at hand, but teachers are looking to see what they have learned by identifying skill development and competency on the instrument or demonstrating their grasp of a particular aspect, such as dynamics. One of the central problems is that musical development has no clearly definable goals and, therefore, is difficult to identify (Lamont and Meyer, 2009). As such, ways of evaluating musical progress have always been contested within the literature, with some advocating for assessment to consider musical behaviours, while others consider identifying stages of skill learning as central to assessment practices in music (Hallam, 2006).

For the teachers in this study, their approaches to assessment were multifaceted, assessing both propositional and procedural knowledge, which music teachers particularly have a long history of (Fautley, 2018). This was seen in both music and drama teachers' approaches to the curriculum in this study and followed the earlier discussion (see earlier in this section) that ways of knowing in the performing arts classroom are distinct and multilayered. Their assessment practices regularly considered student competencies and dispositions seeking to understand the role of 'engagement' (Drama T1), 'self-efficacy' (Music T8) and 'effort' (Music T1) and teachers believed this was a key aspect of assessment in the performing arts, seemingly in disagreement with those who advocate for assessment to centre on musical behaviours (Mills, 2005). The measurement of specific competencies, such as confidence, was seen as a way of ensuring their assessments were able to measure musical or dramatic development, with teachers pointing to aspects such as confidence as a marker of students beginning to master certain skills. As such, the teachers' practices in this study are much more aligned with those, who advocate for identifying the stages of skill learning as the central aspect of assessment (Hallam, 2006). For many teachers, assessment also considered

students' 'personal growth', which they felt developed in tandem with musical ability or competency, which mirrors calls for 'subtle' assessment strategies (Philpott, 2017). Ultimately teachers wanted their assessment to privilege students' understanding of the process of making music or drama over simply the outcome. As discussed above, this focus on process over product was a central aspect of their curriculum, particularly at KS3, and the teachers all felt it was important that their assessments reflected that.

Mistakes are Encouraged

Performing arts was also seen as a discipline where mistakes happen regularly, and linear progress could not be expected. While there have been some discussions about the power of making mistakes in the classroom (Gartmeier *et al.*, 2008), this has primarily been to identify errors that can then be avoided in future. The teachers in this study, however, discussed mistakes differently, framing them as something that wasHowever, the teachers in this study discussed mistakes differently, framing them as something to be encouraged and repeated. Teachers described many practices within the performing arts, both in professional life and in the classroom, where failure was an expectation as part of the creative process such that constant linear progress was impossible. One example given regularly by drama teachers was that when preparing a piece of scripted drama, there will always be a session where actors are not working from scripts for the first time, and the expectation is that this session will include many mistakes and the standard of the performance will drop drastically. Even beyond this, they pointed to times when mistakes and failures are almost celebrated and hoped for pointing to the age-old superstition that to have a bad dress rehearsal means that the performance will go well on opening night. This attitude to mistakes and failure as part and parcel of the disciplinary approach to progress in the performing arts meant that for many teachers, they expected, and sometimes encouraged, moments where progress not only stalled but often went backwards. Teachers felt that this was part of the creative process and central to many of the performing arts pedagogies in the secondary classroom, not least because this helped students understand what a successful process was like.

Progress is not linear

Establishing ways of recognising and understanding development in the performing arts has been central to discussions of assessment in music particularly. Swanwick and Tillman's (1986) spiral, for example, remains one of the few conceptualisations in the literature on musical

development, although it has been widely critiqued for its reliance on the sequential and hierarchical conception of musical development. Mills (2009) argues that musical learning characteristics are not inherently sequential and questions the validity of the spiral to determine musical progress.

Teachers in this study, both music and drama, were equally clear that progress in the performing arts is not linear in nature, which echoes Mills' (2009) arguments that musical development is not inherently sequential. Many of the teachers said that aspects of what one teacher called 'personal growth' such as confidence and self-efficacy, went hand in hand with their development of skills in the performing arts, and as such, the complexity of assessment, together with the interplay of skill and personal development, meant that students made variable progress that was not always linear. Teachers gave examples of students having made significant progress one year before the next year losing confidence in themselves. The nature of the performing arts and its requirement of an audience was highlighted as a challenge for teachers who saw this impact even on the most confident performers. To further complicate measurements of progress, the teachers in this study all focused on including a breadth of performing arts experiences which meant a range of topics and activities that covered all three strands of performing arts. This breadth meant students were introduced to a wide range of instruments and styles of drama as well as all three strands of the performing arts. As such, teachers expected to see differences in ability and progress as students were introduced to new styles and instruments and different strands. Teachers did not feel it was unusual to see students prefer composing over performing or vice versa.

Performing Arts, Misconceptions and Disciplinary Differences

Teachers' beliefs regarding the Secondary performing arts curriculum were unanimous in their descriptions of a wider curriculum landscape where the performing arts were marginalised, aligning with previous literature (Daubney and Mackrill, 2017). The findings demonstrate that despite the commitment to a 'broad and balanced' curriculum (Ofsted, 2019), it appears that the performing arts still struggle for space in the curriculum. The teachers in this study, while recognising the marginalisation of their subject (Savage and Barnard, 2019), were resigned to the fact that the performing arts were generally 'bottom of the priority list' in terms of both timetabling and resources within English schools, with many reflecting that this had always been the case and they did not expect to see a change in their careers.

What was more frustrating for the teachers in this study was that they felt the reason their subjects were often marginalised was because they were routinely dismissed as not academic by many of the people they worked with including other teachers and senior leaders, as well as some parents. Generally, the performing arts was seen as an attractive extra to have, both at a school level in terms of extracurricular opportunities and the curriculum. Teachers did not feel that performing arts was seen as a vital or central part of school curricula in any of their schools, finding the curriculum had narrowed in similar ways as reported by Ofsted (2018a) and recent research (All-Party Parliamentary Group for Music Education, ISM and University of Sussex, 2019). These teachers, however, put this down to the differences in disciplinary subcultures feeling that this led to the performing arts being misunderstood and undervalued, rather than as a direct impact of progress 8 and EBacc as previously suggested (Fautley, 2018). They felt that their lack of status (Bernstein, 2003) resulted from a wider misunderstanding of the value of the arts, ultimately leading to them not being given space in the curriculum. Part of this misunderstanding was a mismatch between their subject and the current measures of accountability, something that ISM has suggested is a concern previously (Bath *et al.*, 2020).

The impact of this for the teachers in this study meant that most of them described spending time having to market their subject as valid or valuable, which they described as exhausting, while other teachers themselves felt marginalised and undervalued simply by virtue of teaching the performing arts. Beyond simply working in an environment where they felt their subject was not valued (Bath *et al.*, 2020), many teachers described working in a context where misinformation about the performing arts was rife, particularly their potential to disrupt the educational trajectory of young people. More than simply being observed as a subject that would offer a distraction, teachers pointed to wider and more pernicious rhetoric in which performing arts was positioned as a subject that would harm the educational futures of students who chose to take it as a subject.

This section described teachers' beliefs about the secondary performing arts curriculum and their intentions as it related to their curriculum design. It primarily reported teachers' lived experiences of implementing the performing arts curriculum in the domain of the empirical (Vincent and O'Mahoney, 2018). The next section seeks to develop this further, examining these experiences within the domain of the actual in order to understand the events (both

observed and unobserved) that entangle teachers' practices. Section 4.3.1 therefore considers teachers' experiences as outlined in section 1 alongside the school-level policy environment to examine where it impacts teachers' enacted practices. This is done using Thijs and Van Den Akker's (2009) conceptualisation of the layers of possible interaction with the curriculum.

4.3.2. How Do School-level Interpretations of External Policy Shape the Delivery of the English Secondary Performing Arts Curriculum?

In this study, an ecological understanding of curriculum interaction was used following (Thijs and van den Akker, 2009), and as such, the data demonstrated how macro (or national level) policy intentions were interpreted through meso (or local level) policy guidance as well as micro (or school-level) curricular practices. All teachers in this study discussed their concerns about the marginalisation of the performing arts in the curriculum, recognising the role of national-level policies, such as EBacc and Progress 8 (Department for Education, 2017) (Department for Education, 2020) and their accountability metrics as one of the primary instigators. Some had already felt the impact at a micro-level and had observed their subject lose hours, with several moving to a carousel model of teaching where the performing arts was taught in rotation with other arts or design technology subjects. Moving to a carousel model greatly impacted the curriculum for those teachers, with compromises having to be made about the depth or breadth of the curriculum on offer, which is in opposition to the new Ofsted curriculum guidance (Ofsted, 2019). For many, the compromise they had reached was to maintain breadth in their curriculum, but they felt that less time in the curriculum meant students were introduced to topics in less depth than before.

This study saw that schools had implemented policies at a micro-level in response to the new Ofsted guidelines at a macro-level (Ofsted, 2019), with all teachers in this study having carried out a curriculum redesign within the last year. Not only had existing teachers undertaken a redesign of the curriculum, several had actually been hired by their school with the specific role of redesigning and improving the curriculum. Despite the timing of the Ofsted policy and its implementation in relation to the teachers' curriculum redesigns, what was important was that very few teachers said that the Ofsted changes had influenced the curriculum changes they made. Instead, the majority referred to school-level policies, describing a school environment where all departments were currently evaluating their existing curriculum and being encouraged to strengthen it. Although teachers were aware of the broader macro policies such as progress 8 and EBacc and the subsequent impact, the micro-level interactions

were those that teachers most often recognised as having directly influenced their curriculum practices in the classroom.

Curricula Tensions, Cruel Optimism and Playing the Game

What was very apparent in this study was that, although teachers had firm beliefs that did influence their ideal curriculum (as discussed in section 4.3.1), their enacted curricula were more complex and the descriptions of their enacted curricula did not always align with those beliefs. While this confirms existing literature that suggests beliefs influence teachers' curriculum design (Richardson, 1996; Schmidt, 2012), for the teachers in this study, it was not as straightforward as simply enacting their chosen curriculum based on their beliefs. In discussions about their enacted curricula, it was clear that the teachers had to take into account more complex considerations when designing and enacting the curriculum. The findings suggest we see a different intended curriculum to the one enacted, which accords with previous literature (Kelly, 2009). This study aimed to understand why these differed and at what level influences were seen that impacted the curriculum as enacted.

There was a sense of a curriculum in flux (Maw, 1993) with teachers reporting that they had all made changes to their curriculum over the last year, ranging from small adjustments to those who had undertaken complete redesigns. When redesigning their curriculum, the teachers initially said they had a large amount of freedom, often pointing to the lack of a national curriculum in the case of drama or a national curriculum 25 words long for music (Department for Education, 2013). Given that most of these teachers were the subject expert in their schools, this ostensibly meant they had a large amount of freedom in designing their curriculum; however, as they discussed their enacted curriculum in more detail, school-level constraints outside their control became very apparent. These school-level constraints often impacted their practices, so although their beliefs were important and played a part in their curriculum design, it was much more complex than simply enacting these beliefs in the classroom. The feeling from many teachers in this study was that they were simply 'playing the game' to reconcile school-level policies with their beliefs about what the performing arts curriculum could be. Although some teachers saw this as a way of maintaining a sense of disciplinary integrity, others described this constant need to compromise as 'self-defeating' (Music T10). Teachers also demonstrated a tension between wanting SLT to understand and recognise their disciplinary differences and subculture (Bernstein, 1990), while also wanting

to be taken seriously as a subject and as a teacher, which often required demonstrating how their subject could conform to the school policies. This desire to be taken seriously, both in terms of their own professional capabilities but also their subject, was often a major driver for many of the compromises teachers found themselves making in their curriculum designs. This ongoing sense of tension and compromise suggests they are experiencing what Berlant (Berlant, 2011) describes as 'cruel optimism' (Moore and Clarke, 2016) in their struggle to enact their identity and beliefs within the classroom. This was particularly disheartening for the teachers in this study, given that many of their beliefs were tightly bound in their sense of suitable disciplinary practices within the performing arts.

One clear example of the tension between disciplinary practices and school-level policies was the need for many teachers to create and display curriculum maps and knowledge organisers (Miller, 2019; Perry *et al.*, 2021) within their classrooms. For the teachers in this study who had created them, these knowledge organisers tended to consist of lists of key terms that students would know and be able to use at given points within their school curriculum and were then used by teachers and students as a benchmark for their ongoing progress. These were created despite many teachers being highly critical of curricula that simply encouraged students to learn specific key terms, as they felt this was not a 'real' performing arts education and certainly was not the way that they conceptualised its purpose within the secondary school curriculum. The inclusion of the requirement for these knowledge organisers was one very clear example of school-led interpretations of national policy impacting on these teachers' practices. Knowledge organisers are not a requirement at a national policy level, with no reference to knowledge organisers either in the Ofsted documentation or in the policy guidance. They have, though, become widely used thanks partly to their discussion in blogs and at ResearchEd events, with EEF discussing them in their review of cognitive science approaches in schools (Perry *et al.*, 2021). In this way, they appear to have become folk pedagogies (Bruner, 1996) in secondary schools as one way of outlining and tracking key knowledge in the curriculum.

The teachers also reported many examples of having 'schooled' their assessment practices (Spruce, 2002) to align with school-level marking and assessment policies. In this study, teachers described school-level assessment policies that they felt were written to suit STEM subjects, where students were regularly tested on their knowledge and understanding of fixed

concepts with the right answers. In response, as suggested by Spruce (2002), many teachers had shaped their assessment practices to align with the school policies. The teachers in this study differed in that many discussed 'hidden' assessment criteria with holistic aspects of assessment such as confidence affecting the assessment grade awarded to students. While on the surface, they had seemingly 'schooled' their assessment practices, this also suggested they were simply playing the game, offering assessments aligned with school policies while using more holistic assessment criteria to award students' grades. This, too, suggests it is reminiscent of the notion of cruel optimism (Berlant, 2011; Moore and Clarke, 2016) as for many, although this was seen as a compromise to enable them to maintain a sense of disciplinary integrity, the need to ensure that these were not explicitly outlined in assessments meant many teachers felt concerned that their assessment practices were 'ropey' (T9). In attempting to fit their assessment practices into the school-level policies, in many cases as an attempt to demonstrate their subject was able to align with those policies, they, in fact, created assessment practices that they were concerned were not rigorous.

The Route to Curricular Freedom was Through Having Good Data

As a response to the tensions between teachers' disciplinary practices and beliefs and school-level policies, many teachers in this study described being able to maintain a certain level of freedom if they were able to demonstrate 'good data' to prove their subject's worth and ongoing place in the curriculum. This accords with existing literature that suggests music teachers use assessment as 'didactic strategies for self-defence' to justify music as a subject and their ability to grade fairly (Almqvist *et al.*, 2017). In this study, we saw that not only was assessment used in this way, but rather a wide variety of data was used as self-defence, with GCSE and A level cohort numbers and results used as shields. This data enabled them to maintain a sense of freedom in their curriculum design and enactment as they were left alone as long as they had reasonable results and a good cohort number.

As a result, teachers in this study spent a lot of time focused on the number of students taking performing arts at GCSE, as they were aware that the national picture was that entries and curriculum time had fallen (Daubney and Mackrill, 2017). Where they could point to a large number of students taking performing arts subjects at GCSE and A-Level, they were more likely to also point to a degree of freedom in designing and enacting their curriculum. Maintaining the size of the GCSE or A-Level cohort was seen by many teachers as the route to survival in

the school curriculum. To do this, many talked about aspects of their KS3 curriculum that they had designed with engagement in mind rather than specific musical development. While linked to some of their aims of ensuring a love of the performing arts, this engagement was also heavily linked to ensuring that students enjoyed the subject enough to pick it at GCSE. These practices were reminiscent of assessment washback (Nusche, 2016) in the way that teachers were seeing GCSE courses as the end goal. Unlike the practices described by Nusche, where content choices were made to ensure good final assessment outcomes, teachers were designing curricula to ensure students chose a performing arts subject at GCSE. Teachers felt constant pressure to ensure that their KS3 curriculum was developed so that it led to an engaging and exciting Year 9 (the year when most students pick their options for KS4).

Alongside this pressure to ensure good cohort numbers, there was also the general pressure described by many teachers in the English secondary system to ensure students got good grades and met targets (Ball, 2003). Where teachers were able to maintain good results, this data was often enough for them to be seen as a successful department, and therefore, they were left alone to plan and enact the curriculum as they saw fit in the classroom on a day-to-day basis. This data, therefore, acted as a shield to ensure that they could find the gaps and freedoms that being at the bottom of the hierarchy afforded them.

Data was clearly a priority for all the teachers, as suggested by previous literature in secondary education (van Dijck, 2014). This created a difficult balance between ensuring appropriate data generation while maintaining disciplinary integrity was an ever-present discussion in this study. Sequencing of the curriculum, particularly, was a large focus in many of the teachers' schools, which can be traced back to the central focus Ofsted places on curriculum sequencing (Ofsted, 2009). Previously, Ofsted guidance for 'effective' music teaching suggested that the main direction of individual lessons needs to be clear, but newer guidance suggests it should be progress over time (Ofsted, 2019). As discussed in section 4.3.1, the performing arts teachers in this study did not see linear progress within the performing arts. As such, when demonstrating progress students had made, there were clear delineations made by the teachers between the actual progress made by students and their ability to demonstrate this, particularly to non-specialists. This delineation between the progress made by students and the opportunities to demonstrate that progress was a tension expressed by many of the teachers. As such, this data became a signifier (Hanson, 1993, 2002), given the importance of

this data in ensuring disciplinary freedom within their curriculum. The result was that teachers described changing their intended practices to ensure that the necessary data was generated. One clear example of the schooling (Spruce, 2002) of teachers' practices to ensure that signifiers (Hanson, 2002) of progress were created was the teachers' discussions of written work in their curricula. All the teachers in the study felt that the performing arts should be a practical subject, with students exploring the performing arts through practical hands-on activities and being given verbal feedback (as discussed in section 4.2.3). Most teachers did not feel that explicit written work was necessary for students to progress in the performing arts and many cases, felt that written work was, in fact, detrimental to students, particularly at KS3. Despite this, many teachers described enacted curricula incorporating aspects of written work to create signifiers (Hanson, 2002) of student progress. Rather than teachers choosing to enact this as something suitable pedagogically for the performing arts classroom, many teachers were clear that they included these aspects to ensure that they 'jumped through the hoops' set by the school. As an example, the insistence on written feedback and marking from their schools meant that many teachers gave examples where their ongoing feedback practices were no longer as meaningful as they could be, having altered them to fit into the school policies. To do so, many teachers discussed incorporating written feedback even where they felt this went against what was more appropriate pedagogically. This accords with previous literature (Clark *et al.*, 2018) that where the need for good data dominates schools, pedagogy takes on new forms. Rather than specifically new forms, in this case, teachers have reverted to more traditional written forms of feedback in line with other subjects, rather than enacting what they earlier described as a feature of their signature pedagogies (Shulman, 2005). Teachers described videoing performances and offering feedback that students either had to write down themselves or that teachers wrote down and gave to students later. This was often at the expense of offering 'in the moment' feedback and, as such, comments were made solely on the end performance rather than the process of creation, with the feedback being more summative than formative (Fautley, 2019). This written feedback, however, was deemed necessary by the teachers as a way of demonstrating that students had both made progress and responded to previous feedback, something teachers felt they needed to ensure that they could maintain the curriculum's practical aspects. This cycle of ensuring data to maintain disciplinary freedoms and the subsequent frustrations was encapsulated by one participant who said putting 'showy things in for

someone else, not necessarily for the kids or for ourselves or their futures … feels very self-defeating' (Music T10)'.

4.3.3.   The Dampened Curriculum as a Possible Causal Mechanism

This section aims to understand how and why these teachers' enacted practices differ from their initial stated aims and intended practices. To do this, it considers a potential causal mechanism that acts on teachers' practices, using a process of retroduction (Danermark, 2002; Sayer, 2004). The aim is to understand the structures that act within the given context, which together can be considered an assemblage (DeLanda, 2006). The assemblage described in this section is not simply a collection of entities but a set of interconnected entities that act, enact, and interact to generate events, in this case, altered curriculum practices. As such, we can consider three distinct aspects, the context, the outcome and the mechanism (see Figure 17).
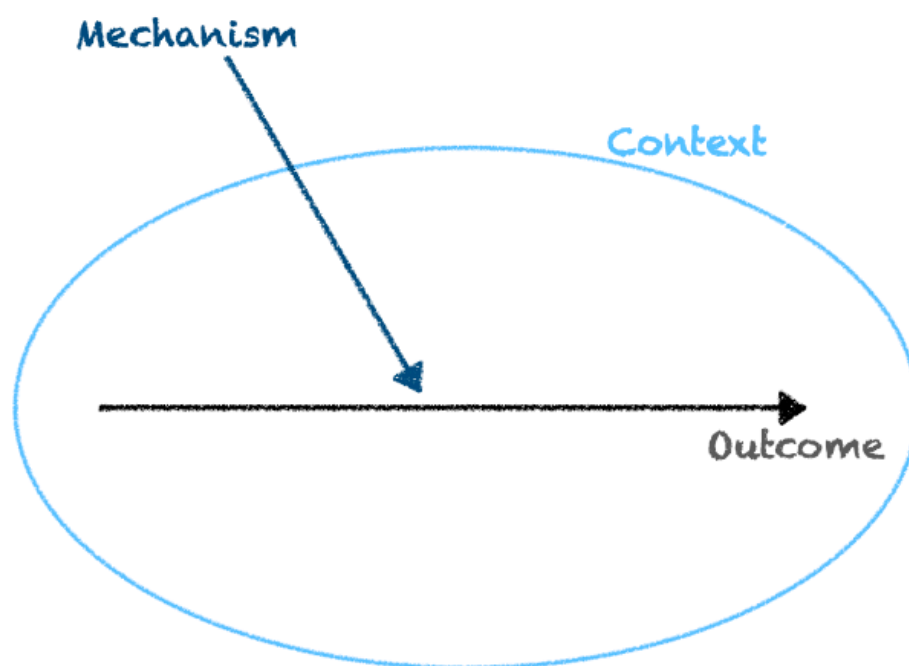
Figure 17: Critical realist mechanism (from Pawson, Tilley and Tilley, 1997)

Performativity, educational effectiveness, research-informed education, datafication, and high-stakes assessment (the system dynamics discussed in Chapter 2, section 2.2.2) are the entities that this thesis argues are an assemblage of structures that act within the current educational context. Within these structures sit causal mechanisms, and this is the focus of this section. This section presents a description of one tentative potential causal mechanism that results in the outcomes described in the previous section, suggesting that at the

confluence of these structures is a causal mechanism termed (by this thesis) a 'Dampened Curriculum'. That is a mechanism enacted at school level where the outcome are curriculum practices that have seen a general loss of vibrancy, from a narrowing of curriculum subjects to calls for students to be silent in the corridors and a persistent focus on knowledge and learning over all other aspects of education. This term arose out of three concepts that began to coalesce as the literature and conceptual development was clarified: the restraint of teachers by the curriculum and their institutions; the expectations of particular practices and data-driven ways of working; and finally, the emotional and personal energy needing to be continually expended to maintain their identities as professionals. The structures that coalesce to form the assemblage discussed in this section are considered in detail in the literature review. Some key aspects of these are briefly outlined again here in order to highlight their current relevance and interconnectedness as an assemblage before going on to consider the possible causal mechanism (the Dampened Curriculum).

High-stakes testing has long been a feature of English schooling (Jerrim, 2022), and in England, GCSE examinations are the culmination of students' educational experiences and are widely used to not only certify students' educational achievement (Machin, McNally and Meghir, 2004) but are also used to determine school accountability (Prior *et al.*, 2021) As a result of the use of high-stakes tests are used as the outcome for school accountability, there is a rise in 'datafication', the quantification of human behaviour (van Dijck, 2014), in this case reducing students to their GCSE and A Level outcomes. This datafication leads to an increased emphasis on the production of good data, and as such, the data takes on its sense of importance, where Bowker suggests, 'if you are not data, you do not exist' (Bowker, 2013). This emphasis on data and its subsequent sense of importance leads to a system in which performativity is rife (Ball, 2003). This performativity seeks to find 'proof' of output within the system (Lyotard, 1984), with literature suggesting it had become pervasive even where the teachers themselves had expressed a distaste for target-driven culture (Munday, 2018). Following the rise of data and the subsequent need to offer proof of output within the system, there is an increased emphasis on the use of metrics to measure educational effectiveness (Biesta, 2009, 2010), with research in this area seeking to understand the causal links between interventions and school outcomes (Hargreaves, 1995). This interest in potential interventions and their links with outcomes has also been seen in the rise of research-led educational practices, where several highly influential organisations such as ResearchEd (2021) and the EFF (2021) have

placed a focus on quantified, cause and effect pedagogical interventions seeking the most effective pedagogies or curriculum structures. These five entities are highly interrelated and form an assemblage within the context of these teachers' practices (see Figure 18).
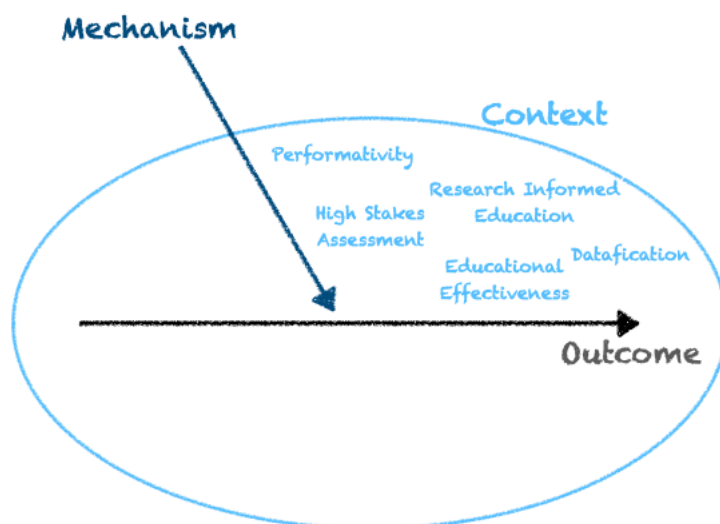
Figure 18: Context

One suggested mechanism for the outcome seen in the empirical data discussed in section 4.2 of this thesis is that at the confluence of these entities, school approaches to curriculum could be described as a 'dampened curriculum'. This thesis suggests that this mechanism is a curriculum model enacted by schools at a micro-level in which data is used as governance, knowledge is seen as emancipatory, which aims for self-improvement, and which has centralised (often hidden) control. This model is not one that this thesis asserts should be enacted, nor is it one that will always result in the outcomes described in this thesis. In considerations of causal mechanisms, these are highly influenced by middle range theory (Merton, 1949), and it is recognised that these cannot be considered in isolation, rather they have contingent qualities (Smith, 2010) seeking to explain phenomena or events, not predict them (Bygstad, Munkvold and Volkoff, 2016). As such, the dampened curriculum as a term is used to offer a potential mechanism that may have led to the practices discussed by the teachers in this study, not to suggest that if other schools enacted this type of curriculum and in other subjects, it would result in exactly the same outcomes, and in addition, not to suggest that this mechanism can in any way be aimed for as an implicit or explicit policy.

This suggested causal mechanism (the dampened curriculum) will be discussed in detail in this subsection with respect to the empirical data to understand this mechanism within the reality of teachers' practices in the performing arts.
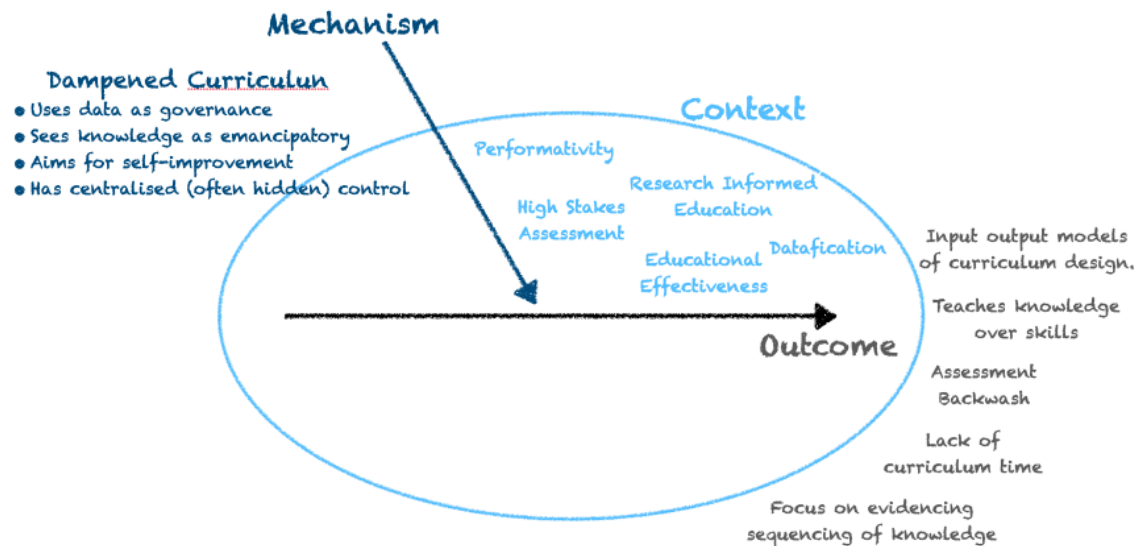
Figure 19: Context and mechanism

Uses Data as Governance

This thesis suggests that the dampened curriculum uses data as a governance tool for the curriculum to evaluate and make judgements on the success of the curriculum. This is seen in the use of GCSE data to evaluate students' outcomes and school effectiveness (Machin, McNally and Meghir, 2004; Prior *et al.*, 2021). This use of data as a way of evaluating and determining the success of the curriculum was observed in the teachers' practices in this study. In section 4.3.1 above, it was discussed that teachers used the production of 'good' data as a protective mechanism. Data was seen to form the basis of decision-making about the curriculum, particularly as a marker of the relative success or not of the teachers' curriculum design. This is also seen in the recent Ofsted EIF (Ofsted, 2019), which seeks to inspect the curriculum sequencing and outcomes. Schools privileged data-driven ways of tracking pupils' progress, with regular data drops throughout the year and multiple assessment points to inform this data. The teachers in this study overwhelmingly saw data as the key to survival as it governed what subjects remained on the school curriculum and was used in decisions about the quality of the curriculum on offer in particular subjects. In this way, particular, quantifiable data markers such as the number of students taking the subject at GCSE or the assessment scores became signifiers for the success of the curriculum and,

ultimately, the department. To generate this data, though, teachers were seen to make many compromises in both their curriculum and pedagogy, and in this context it ultimately led to a dampening of teachers' pedagogical practices, where pedagogies were enacted to generate this data rather than necessarily those which made the best pedagogical sense.

When discussing classroom data, teachers regularly distinguished between their ability to assess student progress and demonstrating this to senior leaders. Teachers agreed that this demonstration of progress in a linear, quantifiable way was not something that came easily or naturally in the performing arts. As a result, many of them described having to alter or compromise their pedagogies to ensure they were able to demonstrate this progress in a way that their schools recognised as valid. Teachers described introducing written elements into their curriculum to ensure that both their feedback and student progress were demonstrable. This was often done at the expense of their own beliefs about the best pedagogical way to teach such as a loss of verbal feedback, something seen as key to good performing arts pedagogies. Encouraging students to respond to feedback in writing sees a dampening in the vibrancy of the performing arts where the response would usually be to respond musically or dramatically, and more than that runs the risk of dampening the actual progress students make in favour of ensuring progress has been demonstrated.

This change in pedagogy to produce data is not a new phenomenon. Clark et al (2018) identify that when the need for good data dominates schools, we see pedagogy take new forms. Rather than specifically new forms, however, this study found chosen pedagogies being altered to suit the generation of good data rather than for the benefit of the students. In the case of the performing arts, this was not new pedagogies but rather the alteration to fit pedagogies perceived as successful in terms of school policies. Teachers recognised that these policies were developed with subjects in mind that suited a steady progression of knowledge acquisition measured by quantifiable data that could demonstrate a continual level of progress. The need for subjects such as the arts to alter their assessment practices so that they may be assessed within privileged knowledge constructs alongside subjects such as maths and science has been referred to as subjects having been 'schooled' (Spruce, 2002). While the assessment practices of the teachers in this study had been affected by this (see discussions in section 4.3.1), the findings suggest that it was more than assessment that had been schooled and that, in fact, it was the wider curriculum too, including changes to their

pedagogy and having to choose between depth and breadth in their curriculum choices as a result of moving to a carousel model. These wider 'schooled' practices led to changes both in their assessment practices and the teaching leading up to them.

Sees knowledge as emancipatory

This thesis also suggests that the dampened curriculum sees knowledge as emancipatory, drawing from conceptualisations in the new Ofsted inspection guidance (Ofsted, 2019) which places a specific focus on the sequencing of knowledge in curriculum designs, while the national curriculum for music together with the MMC suggests that classroom music should be about introducing students to music that they would not otherwise hear (Department for Education, 2013, 2021a).

As we have seen, this focus poses a unique challenge for the performing arts, where knowing is complex and multifaceted (see discussions in section 4.3.1). When teachers in this study shared their conceptualisations of knowledge, they discussed various ways of knowing within the performing arts. This accords with existing literature suggesting several forms of knowledge in the performing arts (Franks, 2016). The teachers in this study, similar to Franks (2016), described a wide variety of knowledge in the performing arts, particularly visible in their treatment of assessment as holistic rather than solely focused on declarative knowledge. It was clear that the teachers preferred knowledge *in* the performing arts (Franks, 2016), with all teachers describing their aim to create a curriculum model that sought to offer a range of practical experiences for students. Many teachers also felt that knowledge *of* the performing arts was important for students to situate themselves and understand the art forms they were participating in. While these two forms of knowledge were observed to be the focus of performing arts curricula, it was very clear that this did not fit many school policy conceptualisations of what should be taught, often drawn from cognitive science literature (Perry *et al.*, 2021).

This was seen in the practices of the teachers in this study, who described their use of knowledge organisers (Bransford, Brown and Cocking, 2000), a practice that draws heavily on cognitive science theories of retrieval and dual coding together with powerful knowledge (Miller, 2019; Perry *et al.*, 2021). Teachers in this study were all familiar with knowledge organisers, with many being asked to implement them as part of their curriculum redesigns.

For some teachers, this included schools asking them to identify powerful words used within their lessons linked to the ideas of powerful knowledge (Young, 2013). For most teachers, this meant that they sought to include specific keywords and terminology into their lessons to satisfy school policy, with many adapting their curriculum to include more of a focus on forms of knowledge that the school accepted. Those that had redeveloped their curricula had all included more opportunities to ensure that the new curriculum was 'knowledge-rich' and included more opportunities for students to learn about the history of the subject. This seemed to be influenced by a feeling from all the teachers in this study that there was a constant need to prove their worth as an academic subject, even though doing so meant dampening what a performing arts education was. For example, teachers often included more opportunities for students to become proficient with keywords, even though they were clear that this was not what they saw as a real performing arts education. It became clear that because declarative knowledge lent itself to being more easily quantifiably assessed, this was what schools remained focused on to the exclusion of wider skill development.

Aims for self-improvement

Almost in tandem with the push for data to be used as governance, the dampened curriculum is one that aims for self-improvement alongside school data generally (Jones and Tymms, 2014) curricula, and schools, more broadly, should be self-improving. For most schools, this improvement concentrates on assessment data with the aim of improving learning outcomes (Creemers and Kyriakides, 2015). This sense of constant improvement was felt by the teachers in this study, where the findings suggested that the curriculum was in flux (Maw, 1993), with every teacher in the study having made changes in the year preceding the interviews. Many also felt that improvement in examination results and uptake of their subject at KS4 were what would see them survive on the school curriculum.

Given this focus on a constant need for improvement within schools, there has been a turn towards evidence-informed teaching to ensure teaching is 'effective' (Coldwell et al., 2017) (ResearchED, 2021). As such, this has seen a rise of organisations such as ResearchEd, led by Tom Bennet, who strongly advocates for using positivist research methods echoing those in the educational research field. As with knowledge organisers, other forms of pedagogy based on cognitive science approaches, such as interleaving and dual coding, were discussed by teachers in this study as something their schools advocated the use of. These approaches,

however, were not always aligned with their signature pedagogies, which focused on process and procedural knowledge (as described in section 4.3.1). scholars are critical of trying to find 'what works', pointing out that it often excludes the context and instead focuses on causal research models (Biesta, 2007). This study found that this was the case for many teachers who often felt that school-wide curriculum models were not designed with the arts in mind. This has seen many of the performing arts teachers in this study having to decide whether to align their teaching with school policy, or to continue enacting pedagogies in the way that is congruent with their disciplinary beliefs.

Centralised (Hidden) Control

While the teachers in this study discussed the brevity of the national music curriculum (Department for Education, 2013) and the freedom that this ostensibly gave them in designing their curriculum, they later described practices that were altered by the school-level policy. This thesis argues that the curriculum models enacted by schools are in fact subject to centralised, often hidden, control. The move towards academisation of schools in England has ostensibly moved control back into the hands of the school when it comes to choices about curricula. Academies are not required to follow the national curriculum, and with the changes in Ofsted inspection focus, the design and implementation of the curriculum are back in the hands of individual schools (Ofsted, 2019), particularly for Performing Arts teachers who are commonly in single-person departments and are more likely to be responsible for the curriculum development than teachers of commensurate experience in other subject departments (Daubney and Mackrill, 2017).

What the teachers in this study described, rather than the curricular freedom they wanted, was an environment in which they had much less control of the curriculum than it might have first appeared. Many teachers described battles in their schools as they struggled to keep the performing arts on the school curriculum, and where the performing arts did remain on the curriculum, they had often lost time to make way for subjects that appeared on Progress 8 or EBacc measures. Several of the teachers in the study were working in academies and, where they should have seen curricula freedom in the way that their school was able to make decisions about subjects and timetables (Department for Education, 2014a), it was clear that schools were bound by external, centralised control mechanisms. The experiences of teachers in this study accord with those who suggest that Progress 8 and EBacc as accountability

measures in secondary schools have resulted in a reduction of entries at KS4 (Fautley, 2019) alongside many secondary schools cutting back on performing arts provision (Jeffreys, 2018). We saw in section 2.4.1 that many teachers were facing reductions in the hours allotted to performing arts subjects with several moving to a carousel model of teaching. This loss of hours had severely restricted the curriculum, with teachers seeking to find subjects and topics within the performing arts that were self-contained or that worked within a much-reduced timetable. With teachers so focused on ensuring that their numbers at GCSE and their grades are good, this meant that many discussions of the curriculum were focused on ways of ensuring that their KS3 curricula were preparation for KS4 and the exams taken.

Alongside the impact on hours and KS4 entries, many teachers in the study were critical of the options available to them as KS4 examinations. Teachers felt that they were not reflective of either the current context of the performing arts industry or particularly sensitive to place-based curricula models (see findings in section 4.2.1). Teachers were clear that they felt there were other more suitable options for potential assessment at the end of KS4 than those they were currently able to offer, but for many, this choice was severely constrained by the school and the wider policy environment they found themselves in. For student outcomes to count towards school metrics, the qualification must appear on the approved list of qualifications (Department for Education, 2020). Many GCSEs underwent an overhaul in 2017, with the then Education Secretary suggesting the aim was to ensure arts subjects were more rigorous in line with other subjects. This move meant that there became much more focus on declarative knowledge about the performing arts, with a renewed focus on the canon. For many teachers in this study, this move prompted concerns about the suitability of these GCSE courses, and many of the teachers in this study had considered a wider range of qualifications that might be more suited to their given cohort and context. Teachers were constrained in the options they had to choose from; they had to ensure that the qualifications chosen remained on the approved list to contribute to the school's overall outcomes. Many discussed making decisions based on what they felt would stay on this list the longest rather than decisions that were purely pedagogically or suitability based. This saw a constraining of not only the KS4 curriculum in several schools, but thanks to assessment washback (Nusche, 2016) also saw the KS3 curriculum narrow and dampen as a result of ensuring that students were suitably prepared to take their GCSE exams should they opt for the performing arts as a subject. What this study demonstrated, then, was that instead of teachers being able to make curriculum

decisions that best suited the learners, teachers instead had to choose from a narrow range of qualifications on a centrally-mandated list. To ensure that students were well prepared for the requirements of these qualifications that teachers were often critical of, they influenced the KS3 curriculum, ultimately dampening the choices and breadth of KS3 options.

The outcome of this causal mechanism was that teachers described curricula that were more reminiscent of objectives-based mixed with content-based curricula models (Kelly, 2009). The teachers' use of knowledge organisers to guide and describe their curricula was far closer to content-based curricula that organise knowledge hierarchically (Kelly, 2009). This was despite many teachers describing their aims as curricula models that were much more in line with process-based curricula. The focus in teachers' enacted practices on ensuring demonstrable progress towards specific objectives suggested a curricula model somewhere between objective-based and content-based in the ways that they aimed to ensure students met objectives both procedural and processual. This was not purely objectives-based as they sought not only to demonstrate skills but also ensure that their curricula were knowledge-rich. In this way, if we imagine Kelly's curricula models as a scale with content-based at one end and process-based at the other, the findings suggest that teachers have moved along the scale from intended curricula at the process-based end towards enacted curricula at the content-based end. That is not to say that content-based curricula are by their nature 'dampened', however teachers in this study were clear that they did not see the value in a performing arts education that privileged the learning of knowledge about music over the practical application of knowledge in music. As such, their practices have been dampened to ensure they meet their school-level policies.

Wider Applicability of the Dampened Curriculum

The Dampened Curriculum has been discussed in this chapter specifically in relation to the performing arts; however, it is clear from existing literature that it is not only the performing arts that have discipline-specific pedagogies (Shulman, 2005). Literature suggests that many secondary school subjects have signature-specific pedagogies (Hanley *et al.*, 2018). Very little of the literature considering such pedagogies is discipline-specific; rather they reference many disciplines in descriptions of differences. The ideas and literature discussed in section 4.2 of this chapter regarding curriculum conflict has also been discussed in reference to education as a wider context, beyond specifically the performing arts. While this thesis does not make

specific claims, as the empirical data and findings are all in the context of the performing arts, it is suggested that the Dampened Curriculum as a construct could be more widely applicable than solely to the performing arts. For example, it would not seem a stretch to suggest that the visual arts might encounter similar concerns. There are also specific disciplinary practices within STEM subjects, such as design practices within design and technology subjects, that also focus on process over product, emphasising practical ways of teaching and learning that seem likely to encounter similar conflicts.

4.3.4.   Summary

This chapter sought to address the first two research questions outlined in Chapter 3:

1. What are teachers' current practices and beliefs concerning the English secondary Performing Arts curriculum?

2. How do school-level interpretations of external policy shape the delivery of the English Secondary Performing Arts curriculum?

This was to achieve the first purpose of the thesis: To gain an in-depth understanding of how the curriculum entangles teachers' practices and beliefs in English secondary Performing Arts classrooms.

As this thesis takes a critical realist approach, the discussion in this chapter sought to consider the empirical findings within the three domains of understanding: the empirical, the actual and the real. This was addressed in three subsections.

The first explored teachers' current beliefs about the performing arts curriculum, considering both the subject curriculum and its place within the wider curriculum. This was reported as *the domain of the empirical* (observed and experienced events), and as such, reports the lived experiences of the teachers in this study. This section discussed performing arts discipline-specific beliefs in relation to the current Ofsted curriculum guidance and the findings that showed performing arts teachers' disciplinary practices differ at all levels of the Ofsted guidance, intent, implementation, and impact. The intention or aims of the curriculum for performing arts teachers centre around ensuring students develop both discipline-specific skills and knowledge as well as wider personal development skills such as confidence or collaboration. When implementing this curriculum, performing arts teachers seek out practical approaches to their delivery, aiming to teach domain-specific knowledge through practical, hands-on experiences. Finally, their approach to assessment is unique in how they

seek to ensure assessment is holistic, focusing on whether students have grasped the process of musical or dramatic expression rather than assessing the end product.

The second subsection examined these experiences in the domain of *the actual* to understand the events (both observed and unobserved) that entangle teachers' beliefs and their resulting practices. This section considered teachers' reported practices in relation to the school-level policy environment that affected those enacted practices and highlighted an ongoing tension between the teachers' disciplinary beliefs in this study and school-level policy. This tension often resulted in teachers dampening their disciplinary practices to ensure that they were able to align with school policies before going on to describe how these teachers often use data as a mode of self-defence, allowing them to demonstrate their worth as a subject and creating a shield that allowed them to enact their disciplinary practices more freely in the classroom.

The third and final subsection expounded the Dampened Curriculum, offered as a potential causal mechanism. This section drew out teachers' practices in relation to their beliefs and described the wider policy drivers that ultimately influenced curriculum design and enactment at a classroom level. This section described a Dampened Curriculum as one which uses data as governance, sees knowledge as emancipatory, aims for self-improvement and has centralised (often hidden) control. It described how the curriculum can become a tool to ensure the production of necessary data, privileging quantifiable absolutist knowledge and a need for constant improvement guided by central control mechanisms such as school accountability metrics. It was then suggested that the Dampened Curriculum as a potential causal mechanism might be applicable beyond simply the performing arts, given they are not the only subject known to have discipline-specific practices.

Following a critical realist approach outlined by Sayer (1999), this chapter offered critical explanations of 'what is' with the next two chapters going on to examine 'what might be', by firstly exploring teachers' current uses of technology before considering the potential role of technology in orchestrating teachers' disciplinary practices within the complex policy environment that has just been outlined in this chapter.

Chapter 5. Teachers' Uses of Technology
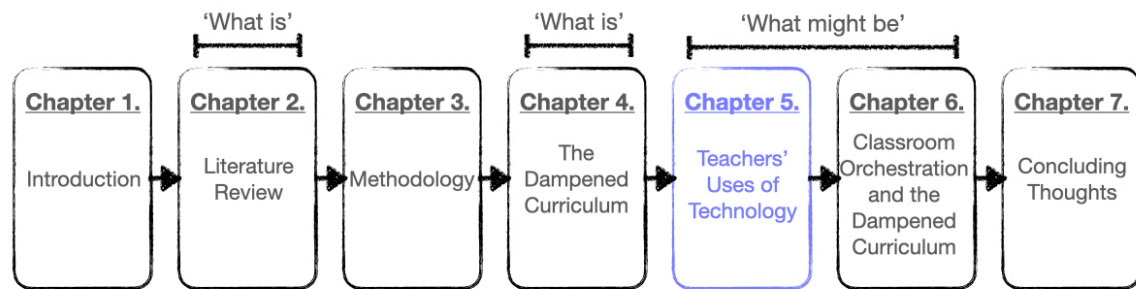
Figure 20*: Thesis structure (you are here)*

Chapter Purpose: to offer insights into the current practices of teachers through the use of interviews, before suggesting two potential uses of technology in the classroom based on the findings from these interviews, to consider 'what might be' (Sayer, 1999).

5.1. Chapter 5 Overview

In taking a critical realist approach and following the method outlined by Sayer (1999), this thesis offers critical explanations of 'what is' and examines 'what might be'.

The previous chapter addressed the first purpose of this thesis: to gain an in-depth understanding of how the curriculum entangles teachers' practices and beliefs in English secondary performing arts classrooms. In explaining 'what is', the previous chapter outlined teachers' current beliefs about the performing arts English secondary curriculum finding specific collective beliefs about the unique nature of the performing arts and its disciplinary subculture. It also demonstrated ongoing tensions between this subculture and school-level policies before describing the concept of the Dampened Curriculum, drawing out teacher' practices in relation to their beliefs and describing the wider policy drivers that ultimately influenced curriculum design and enactment at a classroom level. It then went on to suggest that performing arts teachers' practices are regularly dampened to align with school-level policy, which is often implemented as a reaction to national-level policy changes. The following chapters consider 'what might be' by exploring the potential role of technology to orchestrate teachers' disciplinary practices within the complex policy environment that was outlined in the previous chapter, thus addressing the second purpose of the thesis: to examine

the potential role of technology in facilitating teachers' enactment of the English Secondary Performing Arts Curriculum.

As discussed in the literature review chapter in section 2.5.1, educational technology has many affordances that lend themselves to supporting new forms of pedagogy, particularly those that are constructivist and student centred. Many of the performing arts pedagogies discussed by the teachers in this study share similar constructivist, student-centred aims, which suggest technology might offer a way to support these pedagogies. Literature also suggests that performing arts teachers were one of the first adopters of technology in the classroom, using and adopting a wide range of technologies in the classroom (Mills and Murray, 2000). This remains true today as many performing arts teachers have access to a wide variety of technology, including discipline-specific technology such as amplifiers, sequencing technologies, or theatre sound and lighting. Given that technology is present in many performing arts departments, it offers the opportunity to understand how this can be used to support teachers' practices in the classroom. However, the understanding of technology use in the performing arts varies between subjects. Technology use in the music classroom has seen extensive explorations and conceptualisations in the literature, particularly its use in supporting composition pedagogies (Gall and Breeze, 2005). In drama, however, research into technology use has been limited (Carroll and Cameron, 2009). Generally, the literature regarding technology use in the performing arts has been in the education field, and very little HCI literature has considered performing arts as a context. The Education literature has focused primarily on existing pedagogical practices, often documenting where technology disrupts teachers' practices or clashes with their values.

This chapter first considers teachers' current uses of technology in their classroom practices, with the aim of understanding its use in both music and drama classrooms specifically addressing Research Question 3: How does technology shape the English Secondary Performing Arts Curriculum? It also briefly considers what teachers see the future role of technology could be, thus addressing Research Question 4: What is the potential role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum?

The first section presents the findings relating to teachers' current uses of technology in their classroom practices and the second section then discusses them in relation to existing literature to understand how technology might be used to support 'what might be'.

5.2. Findings

5.2.1.   Technology is an Important Aspect of the Curriculum

All the teachers in this study agreed that technology use was important within the performing arts curriculum, and they all discussed ways they integrated it within their curriculum and pedagogy. Most discussions regarding technology use within their curriculum were about teaching students how to use discipline-specific software and hardware such as lighting and sound equipment or DAWs. This was as opposed to considering ways they used technology that specifically underpinned their pedagogies and might be more traditionally considered educational technologies. When discussing their intention to include technology in their curricula, most teachers included it primarily in recognition that this better reflected the current realities of the music industry.

For many, this was linked to ensuring that their curriculum reflected the music students were listening to outside the classroom:

> *'I think when they're doing music tech kind of work, it's about them understanding the processes that go into the music that they listen to, because they all listen to music'. (Music T9)*

For others, this was directly linked to raising students' aspirations and demonstrating possible roles in the performing arts industry they might not have considered previously:

> *'If I don't have any [technology] then not only am I doing them a disservice, I'm not providing them with any career aspirations for the future, or a very limited amount'. (Music T6)*

Teachers' use of technology in the classroom was, for the most part, directly linked to understanding current industry practices in music and drama. As the importance of technology was rooted in offering students an understanding of the performing arts industry, teachers were clear that the technology they used in their classrooms should be industry standard.

In drama, teachers were clear that technical theatre skills should be taught in line with industry standards, with one teacher saying:

> *'I don't believe that schools should be teaching kids technical theatre skills that aren't actually how it's done in industry'. (Drama T1)*

This meant, for example, ensuring that students understood how sound effects in stage shows are cued by using specialist technologies rather than simply pressing play or stop on a sound system. In music, teachers were equally adamant that students should be using technologies that were in line with what they were likely to see used in the industry. For music teachers, though, this was linked to matching student expectations in a way that drama teachers did not mention:

> *'the entertainment industry is one of the biggest in the world, and for them not to be matching with the things that they are showing you on YouTube tutorials and wherever you see it, it just then shows people that they can't access what other people can when they are in the industry'. (Music T6)*

Music teachers referred to students already having exposure to the ways technologies are used in music production and creation and felt that their curricula needed to align with students' existing knowledge and understanding.

Technology Should be Easy to Use

Most teachers were clear that technology that was successfully integrated into the classroom was technology that was easy to use. For many, the focus was ensuring that the design meant it was usable in the classroom:

> *'design is really, really important. If you can't get your head around it within 20 minutes there is no way that you can deliver a scheme of work on it for the students because they will not listen'. (Music T6)*

It became clear that balancing their desire to introduce students to industry-standard technology and yet trying to ensure that technology was simple or user friendly was challenging. As teachers pointed out:

> *'Using a clunky system like Cubase just really doesn't work, I think, in a modern classroom … you'd get a kid not doing anything for the entire lesson because*

something dodgy had happened with Cubase. It's not designed to be used by 12-year-olds in the music classroom, it's too complex'. (Music T1)

Using overly complex technologies was a concern, given the constraints of the classroom and multiple students. Many teachers agreed that:

'You have to be really realistic in what you can deliver, what they are going to be able to understand'. (Music T6)

While industry standard was considered the ideal, it was clear that technology needed to be chosen for a specific purpose and for some teachers, that changed whether complex industry-standard tools were necessary:

'There is no point having, okay, fine, key stage 4 need it, but there is no point using Logic, for example, with amazing use of synthesisers and understanding sound waves and samplers and all this stuff if you just want them to be able to record an instrument onto a software. Use something easier'. (Music T6)

Alongside concerns about students' abilities to grasp these complex technologies, it was clear that teachers often felt they lacked the necessary skills:

'We don't have access to a technician so it relies on us knowing about the technology and so I think some of it is kind of our own knowledge can cause a barrier'. (Drama T1)

Some went as far as to say the use of technology made them nervous:

'I'm an organist, I'm a classical musician, and jazz, but the whole music tech side is a bit of a scary part for me'. (Music T4)

Others felt that although their knowledge was passable, the knowledge needed to teach students how to use the technology was lacking, particularly the knowledge needed to troubleshoot when things went wrong:

'I can fix when the keyboard is not reacting to what's happening on screen, and I can fix the headphones not working, but sometimes kids press buttons, I haven't got a clue'. (Music T9)

That same teacher said they were not surprised when people said they avoided the use of technology sometimes:

'it makes the lessons hard work if they're using technology. I could see why people would avoid it because there's always something going wrong'. (Music T9)

5.2.2. Technology Should Underpin Pedagogy

Regardless of the ease of use or whether technology was the industry standard, teachers were adamant that technology should come second to pedagogy. In the case of using nonstandard technology, this was sometimes a pedagogical choice despite their belief that industry standard was the ultimate aim. The teachers in this study agreed that they planned their curriculum and pedagogy before looking for technology:

'I think that I would not choose the software if it would not work pedagogically in the first place'. (Music T8)

This meant that for most teachers, they were clear that the focus should be on learning rather than engagement, with one teacher saying:

'you can see some people just going, 'Let's use technology, because it's exciting', but I try not to use it just because it's exciting. I try to make sure it serves a learning purpose'. (Music T7)

Many teachers displayed a similar aversion to what they deemed 'shiny' technology, their term for technology that they felt sought to encourage engagement over supporting students to achieve specific learning outcomes:

'Kids love something that's shiny, something that's got buttons on it, and those are the three questions that we had. We, kind of, boiled it down to the fact that we don't want anything that's just shiny because it's like ticking a box'. (Music T10)

This was usually because they felt that 'shiny' technologies were often not utilised beyond some of the more simplistic functionalities:

'What's the point of having this massive big shiny thing if they are not going to learn how to use it? You've got to think about the outcome that you want'. (Music T6)

In ensuring that technology came second to pedagogy, it was clear that teachers felt technology should play a supporting role in the classroom:

'I like making sure it works and making sure it supports what I'm doing in the classroom rather than it overbears that'. (Music T4)

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This was a particularly prevalent consideration for music teachers; specifically, many of whom were careful to ensure they were able to strike a balance with the amount of technology that they incorporated into their lessons:

> *'I think there is a balance that you need to strike between the two of getting kids away from screens, away from the computers and getting their hands on the instruments and getting them singing and things'. (Music T6)*

This idea of balance often saw teachers put technology to use in opposition to practical music-making leading one teacher to remain cautious about their use of technology:

> *'we've got to be just so careful with using technology, too, because it's going back to my early experiences, but at the end of the day, if kids are just sitting, clicking stuff into a machine, is that music-making?' (Music T1)*

Although teachers wanted to ensure students were given opportunities to understand how technology was used in the production of music, they still felt it was important to gain musical skills independently of their use of technology. This was often in relation to descriptions of their composition pedagogies with one teacher saying:

> *'that's what I'm trying to instil into the kids, that there is nothing wrong with sitting with a guitar'. (Music T2)*

Some of this caution seemed to result from many teachers feeling that the use of technology reduced music to a solitary activity:

> *'I think they're doing more work individually because we do have that technology and because they'll have Chromebooks where they can access that technology. I think, in one way, there's less collaborative work going on'. (Music T4)*

The individual nature of working with technology led several teachers to feel uncomfortable with the resultant lack of noise in the classroom. One teacher felt that you missed out on collaboration as you were no longer drawn in by the noise of music:

> *'I think that actually when people are doing practical, you are automatically drawn because you hear it and so people start to have conversations about what they've played or what they've heard, whereas the moment you have got headphones on it becomes your own thing'. (Music T6)*

Others echoed this sense of uneasiness when technology rendered performing arts classrooms too quiet:

'I think there is a danger that computers are back in the classroom and it's all a very sterile, quiet environment and music classrooms should really be, kind of, noisy and vibrant, you know? I think they should be, anyway'. (Music T1)

Although the teachers in this study were all clear that technology should form a key aspect of their curriculum, it was clear that this remained a complex aspect of their curriculum decision-making.

5.2.3.   Tensions and Complexities in the Use of Technology

Alongside considerations of the ways technology could best be used in their disciplinary practices, teachers also discussed the complexities of using technology within the confines of school policies. Ultimately, their current technology use fell into three broad categories; First, technology for its own sake, which primarily meant teaching students to use recording and mixing software in music or lighting and sound technology within drama. Second, technology used to support pedagogy which included the use of whiteboards and PowerPoints as well as using orchestration technologies such as google classroom. Finally, technology used as a way of engaging students, including the use of quiz software such as Kahoot:

'We sort of came up with three questions. Are we teaching it for technology's sake? Are we using it as a way to enrich something that we're already delivering? So, is it a case that in music, you know, we're using DAWs to give pupils the ability to enrich what they'd normally create, or, three, are we doing it as a hook? Are we doing it just for the sake of the technology itself?'. (Music T10)

Most teachers described similar uses of technology within their daily practice. Interactive whiteboards were named several times, although they were typically used to show examples or a PowerPoint rather than for their interactive capabilities:

'The interactive whiteboard is often used for showing videos of… I say interactive whiteboard, we don't really use it as an interactive whiteboard, it's just a screen'. (Music T5)

Most teachers used PowerPoints to structure lessons:

'We'll use video quite a lot as kind of to watch examples and things and there are PowerPoints as part of our curriculum, some of its based on PowerPoint

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presentations, and, and kind of using those as the kind of structure of the class'.
(Drama T1)

Technology use beyond PowerPoints and showing videos focused mainly on discipline-specific technologies. In music, this was primarily digital technology used to record and to compose music, whereas in drama, this was ways to use theatre technologies such as stage lighting in the classroom.

The two main ways teachers tended to implement technology within the music classroom were quite traditional, using it mainly in composition tasks and to record students' work:

> *'We often record students so we have various recording devices around and we do*
> *have a small recording studio that we use too for that. That's probably where we*
> *lie most with technology, I would say. That's where most of it is used'. (Music T5)*

The use of technology within composition was a large focus for most of the music teachers in the study:

> *'Technology, we could use it even more, but it's mainly GarageBand at Key Stage*
> *3 for composing'. (Music T7)*

The amount of technology currently integrated within their curriculum differed between the performing arts subjects, with music teachers reporting the inclusion of more technology within the classroom than drama. Music teachers mainly talked positively about the effects of integrating technology within their curriculum, with some saying it had transformed their current curriculum:

> *'For us, technology, we've definitely become really reliant on it. It's transformed*
> *our curriculum'. (Music T3)*

Performing Arts Technology Use is Misunderstood

Although technology was integrated into many teachers' curricula in some way, they remained critical of their uses of technology, primarily as they identified several barriers to freely integrating it into their practices in the way they wanted to.

Many felt that given the particularities of the role of technology in the performing arts, it was misunderstood at a school level:

> *'I think it is kind of thought why do you need that sort of stuff and they can't see*
> *actually how it would help and enhance the subject better'. (Drama T3)*

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Teachers raised the particular and central role of technology in creating high-quality performances, both as part of examinations and putting on extra curricula shows:

> *'I think with the performance nature of Performing arts that is an extra issues with technology that other subjects wouldn't have'. (Drama T3)*

For them, technologies such as lighting and sound equipment were essential assets of a performing arts department, which they needed to deliver their subject well. Many felt that this misunderstanding meant a lack of support in ensuring the necessary technology was available and up to date.

Teachers all pointed to the fact that technology was often prohibitively expensive, which often stopped them from using their first choice of technology:

> *'Because of the number of users, we'd need and the cost of music technology is so much, it just wasn't possible'. (Music T3)*

With a small yearly budget, teachers' choices of which technologies they could use were often limited, describing decisions that were *'budget oriented'* (Music T10), despite their earlier insistence that decisions about which technology to use should be pedagogically driven. These budget concerns were compounded by the need to ensure that technology was available for both supporting pedagogies in the classroom and supporting performances.

The lack of budget meant that even where teachers felt confident about their ability to use and teach with technology, they were often unable to implement this in practice as they lacked access to the required hardware or software in their classrooms:

> *'You can't afford technology anyway. It's like one special thing a year if you can just about manage it'. (Music T6)*

Many teachers said they only had one classroom that contained suitable technologies and this often presented problems with access:

> *'In Key Stage 3, we have two music classrooms, four practice rooms, and only one of those rooms is a technology room, has got computers in it'. (Music T10)*

Even when teachers tried to integrate technology into their curriculum, ensuring access for all students was often problematic. Even where teachers had enough physical pieces of technology to enable access for their students, they often said that these were older devices:

'We've got a keyboard, which is set up with Macs and GarageBand. They're old Mac minis. They're not the greatest, but you can just about get the class in pairs on the computers and them doing some music technology'. (Music T3)

As a result, they often had older versions of technology that were slow or did not work as well pedagogically:

'We've got computers in the music room … we've got Apple Macs but they're not kept up to date so they've not got the latest technology'. (Drama T1)

The lack of updates was a problem for those teachers who were still using and working with Mac computers. Most teachers who used Macs said their school IT systems and staff were not supportive of their continued use. One teacher described that her Macs were slowly disappearing from her classroom:

'When one of the Macs breaks a technician comes and collects it and then says, 'It has died. We can't fix it. It's gone forever'. Which is not, I don't feel, necessarily the truth … I think that where we are changing to a Google school I think they are not investing in trying to get a technician to fix a Mac computer, and therefore, they are going to a graveyard when they shouldn't be'. (Music T6)

The use of Macs in school was seen as a problem peculiar to music, with teachers highlighting ongoing attempts to navigate school IT policies that were moving towards centralised implementations of technology. With schools moving towards including more technology across subjects, many were networking computers to ensure cohesiveness across the whole school. This meant that music teachers struggled to make the case that they needed to keep their current hardware. This presented specific concerns when schools were moving to use Chromebooks:

'My only battle at the moment is the technology, which is something we are moving forward with hopefully next term … we are a Google school and that is our statement so we have Chromebooks everywhere, and I don't feel that that is enough for a music department because they only work virtually'. (Music T6)

In this move to Chromebooks, many teachers felt the performing arts had been disregarded, as had their need for specific technologies, describing repeated tensions between the technology they needed in the classroom and school IT policies.

Narrowing of the Curriculum Offer

This meant that, overall, schools were often working with outdated technology and this in turn influenced both pedagogical and curriculum choices regarding the inclusion of technology within their practices. One teacher said the lack of up-to-date technology meant a narrowing of their curriculum offering, saying they were:

'… still going to avoid the teaching music tech as a discreet thing because of the problems that we've got, but we are going to embed the two, sort of, stems of music technology, at least.' (Music T10)

In drama, the lack of access to technology also led to a narrowing of their curriculum offer, particularly when they tried to include theatre technologies as part of their curriculum. Some described significant challenges because they only had access to one desk for lighting and sound:

'The limitations, I suppose, are that I could never teach a class of 30 kids how to be a lighting designer, because I think, you know, we're a school with one decent lighting desk, and it just wouldn't be feasible'. (Drama T1)

Others, however, were often working with older and potentially outdated equipment:

'For students to pick up lighting design, there's no point because you know, what, what are they going to do? Move it or put a gel in it? That's about it, really, and then maybe a bit of fading it's so limiting'. (Drama T1)

The older equipment could not support a wide range of lighting designs and techniques and ultimately, the lack of equipment meant that teachers no longer offered students the opportunity to do lighting design as part of their courses:

'When I started I was like 'yep we can do lighting design', now I talk them into doing more the costume or the set because that's easier'. (Drama T3)

Many schools also had significant safety fears about including stage lighting in the curriculum. In some cases, much of this fear was related to dated equipment that included unsafe live patch bays:

'The school hall has got a very aged lighting rig, all the, all the lighting fixtures have got old five amp plugs. You know, you look at the patch bay, and it's massively

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dangerous. And, of course, the kids can't touch it, because it's so far away'. (Drama T1)

Those that tried to still offer it as an option could offer it to a limited number of pupils:

'I think those opportunities are kind of extracurricular things or for Year 10 or 11, they work because you might only have one or two students signing up for lighting, you know, to be assessed against lighting'. (Drama T1)

The lack of inclusion in mainstream curricula meant that some viewed stage lighting as an 'easy' alternative that was saved for students with special educational needs and as a gendered role:

'Some students who take drama can do the sound and lighting. Now, that usually, I think, gets reserved for students who feel like special educational needs, can't really do the acting, but I've never seen a girl do that in our school ever'. (Music T9)

Continued Use of Mobile Phones

Several teachers utilised mobile phones within their pedagogy, which was usually against school policy:

'The school policy is no devices in lessons but, within the music department, they're allowed their phones, yes, to either record or sometimes I'll set a Google Docs questionnaire, that they can do on their phone or whatever'. (Music T2)

This was seen in the practices of both music and drama teachers, who allowed mobile phone use in their classrooms despite school policies to the contrary:

'We are a no phone school and they're not supposed to have their iPads and things in school however I know there are several subjects and we're included where we will allow them to use their phones for work'. (Drama T3)

The same teacher did say that this had caused some tension at times as:

'I've had people come in and particularly Year 11s when they've been using their phones for their work, for their portfolios and whatever I've had senior leaders walk in and absolutely destroy the lesson by shouting at a kid because the kid was doing their work on a phone'. (Drama T3)

Despite this ongoing tension, many teachers continued to allow the use of mobile phones, feeling that the benefits to pedagogy outweighed the potential tensions with the school:

> *'If she waited for the teacher to show her which chord it was next. You know when you're circulating, it takes ages to get round. Some of our students are so resourceful, a lot of them are learning from YouTube anyway'. (Music T3)*

5.3. Discussion: How Does Technology Shape the English Secondary Performing Arts Curriculum?

This discussion section initially answers RQ3: How does technology shape the English Secondary Performing Arts Curriculum?, before beginning to consider RQ4: What is the role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum? in section 5.3.3.

This study found that technology is interwoven in most performing arts teachers' pedagogies and deeply ingrained in many of these teachers' practices. This is in opposition to previous literature that has suggested that music technology 'further specialist work' (Henley, 2011) or called for improved teacher training in the uses of technology (Dorfman, 2008). While one possible reason for this is that this study offers a more up-to-date exploration into teachers' practices with technology in the performing arts classroom, perhaps indicating a possible change in practices, a recent call for evidence from the Department for Education suggested that the use of technology in music education specifically still had a long way to go until they considered it effective and consistent (Department for Education, 2021b). It would seem then that it is not simply a change in practices over the last 10 years. One possibility for the difference in findings is that is suggests a potential difference in how technology is conceptualised in these various studies.

Conceptualising technology use in the performing arts classroom is complex, and where technology use is critiqued, teachers and policymakers tend to refer to technology as encompassing only discipline-specific technologies such as DAWs or theatre technologies such as stage lighting (Dorfman, 2008; Henley, 2011; Department for Education, 2021b). If technology is defined solely as the use of discipline-specific technologies, this study found many barriers to integrating this technology in the classroom. This study, however, considered technology as having a wider definition, including all forms of digital technology used within

teachers' practices as enacted in the classroom. Conceptualising technology in this wider way might explain some of the inconsistent findings that while previous literature (Henley, 2001; Department for Education, 2021) suggests the use of technology is not well integrated or commonly used in the performing arts classroom, this study suggests the opposite.

When using this wider definition of technology beyond solely music-specific technologies, the findings demonstrate that technology features regularly in these performing arts teachers' daily classroom practices, particularly their assessments. This finding accords with (Mills and Murray, 2000), who identified music teachers as among the earliest users of ICT in education. Despite integrating technology in many ways within their pedagogies, most teachers in this study were critical of the amount of digital technology they currently included in the performing arts classroom describing only the times students worked with technology as instances of technology use in the classroom and many had aims to include more in their curriculum. The focus for the majority of teachers in this study was in line with many existing studies; for example, Gall (2017) found that teachers aimed to include more opportunities for students to learn how to use discipline-specific technology, particularly in composition or arranging activities. What was not clear and deserves further exploration is whether the teachers descriptions of technology focusing primarily on students' use of technology is because performing arts teachers conceptualise technology use in the classroom as only those practices that involve students actively using technology or whether some of their pedagogical practices that involve technology are so routine such as recording student assessments that they no longer notice them as classroom uses of technology.

The findings demonstrated a complex mixture of first- and second-order barriers (Ertmer, 1999) that were currently preventing the teachers in this study from using technology within the performing arts classroom in ways that were congruent with their intended practices.

5.3.1. Technology Access as a First-Order Barrier (RQ3)

Teachers in this study reported first-order barriers (Ertmer, 1999) to the use of digital technology in the performing arts classroom, with the findings demonstrating that monetary constraints meant budgeting for the purchase or upkeep of suitable technology affected access, something reported previously in other literature (Crawford, 2009). Teachers in this study, for example, referred to technology purchases as luxury items, often pointing out that they could afford one thing a year if they were lucky.

Beyond monetary constraints, the findings demonstrated that the teachers in this study felt there was a lack of access to suitable hardware that would allow them to use discipline-specific technologies within the classroom. The findings demonstrated many problems at a school level because of a lack of understanding or support for the discipline-specific technologies teachers wanted to use. Teachers regularly found that school-level IT policies were a barrier to integrating technology in the classroom, with a lack of available technical support. The findings demonstrated this was particularly prevalent in schools seeking to integrate more technology into the classroom, especially in schools that were moving to cloud-based services such as Google Classroom. The use of cloud-based services is something that is becoming more prevalent within English schools (Van Dijck, Poell and De Waal, 2018) given its promises of supporting teachers' pedagogies and often comes hand in hand with the use of Chromebooks to regulate and consolidate existing technology to ensure consistency of access across subjects. However, this push for consistency posed new barriers for performing arts teachers who required access to alternative or specialist technologies with teachers unable to use Macs even where their software was dependent on the operating system. Although concerns at a theoretical level have been highlighted with 'platformisation' (Nieborg and Poell, 2018; Van Dijck, Poell and De Waal, 2018; Perrotta *et al.*, 2021b), this study demonstrated a wider practical impact on the performing arts specifically, with teachers struggling to utilise discipline-specific technologies.

These findings also demonstrate disciplinary differences in the types of technology used within the classroom, with the performing arts requiring particular hardware affordances other disciplines did not need. It could be said that there are disciplinary subcultures (Ball and Lacey, 2019) within the use of technology, and it seems that the growing move towards platformisation (Nieborg and Poell, 2018; Perrotta et al., 2021; Van Dijck, Poell and De Waal, 2018) and the use of tablets and Chromebooks reported by the teachers in this study does not take this into account. Research elsewhere, for example, in Australia, has suggested that the lack of esteem given to music as a subject directly affects the availability of digital resources (Crawford, 2010). Although it was clear in this study that the lack of funding was a clear barrier to the use of technology within the classroom, it would seem that, at least in part, this was due to a school-level misunderstanding of the disciplinary subculture around the use of technology in the performing arts classroom. This meant that although technology strategies

are being created across England at a school level (Department for Education and CooperGibson Research, 2021), these do not always consider the particularities of disciplines such as the performing arts and their specific technological needs.

One area seen as particularly challenging to the point of excluding it from curricula was the use of stage lighting in the classroom, specifically for teachers to teach technical stage lighting skills. This accords with existing literature suggesting stage lighting is rarely taught at the secondary school level, with most teaching happening in specialist colleges (Reid, 1998). Although Reid (1998) wrote 24 years ago, this study suggests that stage lighting is still not taught regularly in the secondary classroom. The move towards centralised technical support in schools meant that most performing arts teachers no longer had support for maintaining their specialist technologies. In the case of stage lighting, the inherent safety risks posed meant many schools were reluctant to allow even the teachers to work at height and maintain the stage lighting. With often ageing and outdated lighting rigs, teachers were unable to support students taking technical options at GCSE and A-Level. Where they still tried to support it, this was often only for a limited number of students and regularly only for those unable to access the more traditional practical elements of a performing arts qualification. This narrowing, or dampening, of the curriculum, was something many teachers lamented, feeling it offered a very narrow conceptualisation of what the performing arts was, leaving students unaware of the variety of careers available.

The findings also demonstrated that there were place and space-based barriers to using technology within the performing arts classroom. These barriers often varied between music and drama classrooms and were initially presented as first-order barriers (Ertmer, 1999) in the way that there was sometimes a lack of physical access to technology. Some teachers in the study had music rooms that contained computers or other digital technologies, but for most, the use of technology necessitated practical physical changes to their classroom space and often to timetables.

Commonly teachers had access to a specific music classroom that contained computers or technology, but this was often a different space to their usual teaching room and was often lacking in the amount of equipment needed to teach a whole class. Where these classrooms were equipped to allow them to teach a whole KS3 class, teachers reported many occasions

where multiple classes in the same year were timetabled at the same time. This meant that to use technology, teachers had to choose how to split this between the classes. They then reported having to choose between technology used at the right point of the curriculum pedagogically versus ensuring all students had access to try the technology at one point in the school year. These challenges in access and curriculum sequencing meant that these barriers became a second-order barrier for most rather than simply a first-order barrier (Ertmer, 1999).

As a result of the lack of consistent access to digital technology, many teachers in this study discussed the inclusion of digital technology as something distinct in and of itself rather than as a support for practical musical or dramatic activities. It was often discussed as a separate and distinct topic that was included within their existing topic-based curricula (Anderson, 2021) so that it could be offered on a carousel with other topics and ensure access for all students. The separation of technology in this way into a distinct unit may mean that the teaching is more inclined to become an introduction to the use of specific technologies, as seen in previous studies (Wise, 2016). In this way, technology appeared to be a second-order barrier (Ertmer, 1999) in that rather than seeing technology as a natural part of or even an extension to their pedagogy, teachers saw it as 'other'—something to be included within the curriculum but outside the norm of teaching and learning within the performing arts classroom.

5.3.2.   The Technology Versus Practical Work Dualism (RQ3)

Alongside practical barriers to the integration of technology were ongoing concerns raised by most of the teachers in this study of the balance between the use of technology on the one hand and practical performance on the other. These were clear second-order barriers (Ertmer, 1999) in their descriptions of disciplinary practices and beliefs regarding the place of technology within the classroom. Previous research has suggested that teachers see digital technology use in the performing arts classroom as a way of moving away from the traditional understanding of the performing arts, offering an opportunity to update classroom curricula (John and La Velle, 2004). While the findings of this study suggest that performing arts teachers recognised the potential role of digital technology in their curricula, this was often done so with a certain level of caution, with many feeling it stands in opposition to practical music-making and dramatic development. The teachers in this study were all adamant that students should use technology in a way that serves to support music-making practices, which

mirrors the beliefs of Paynter (Paynter, 1997), who felt that music technology should not be used for technologies sake but in the service of music.

This delineation is interesting, however, as it became clear that teachers saw practical music or drama-making as that which was not technologically mediated. This was particularly prevalent for music teachers, although drama teachers also discussed it primarily in relation to the ability to see live theatre shows. It was not that technology itself should be wholly excluded, as to use of keyboards or amps was always included in music teachers' conceptualisations of practical music-making. What was excluded from this definition were fully mediated forms of musicking. This included using DAWs and other software-based music performance or production forms. Even though teachers were all in favour of the inclusion of technology within the music classroom, for many of them, there were concerns that technology could challenge their conceptualisations of what practical music-making is and should be. Although there has been a rise in the use of informal or popular music-based pedagogies due to Musical Futures (Mariguddi and Cain, 2022), most music teachers come from western classical music backgrounds (Hargreaves *et al.*, 2007; Philpott, 2010), which may still play a part in their beliefs about using technologies within the music classroom (Philpott, 2010).

The use of digital technology in the classroom necessarily implies some measure of change for teachers (Ertmer and Ottenbreit-Leftwich, 2010), and so, for those whose practices and beliefs are linked to their disciplinary or educational identity (Bernstein, 1990), it is hardly surprising that this change is not fully embraced. While all the teachers in this study were accepting and encouraging that technology should play a part in any secondary music curriculum, they had not yet moved towards what Tobias (2012) calls hyphenated musicianship. This is not wholly unexpected as this would require a fundamental shift in teachers' conceptualisations of music-making. Although teachers remain committed to maintaining a balance between the use of technology and practical music or drama making, it has been suggested that there are starting to be some changes in the conceptualisation of what constitutes a 'live' performance, particularly within the context of a music qualification at school as student performances are now recorded and sent off to examiners (Byrne and MacDonald, 2002). What became clear in this study was that teachers were happier to include technology-mediated performances when it came to assessments as they recognised that these assessments needed to be

captured in some way. The inclusion of technology on a day-to-day basis in the classroom for mediating performance, however, seems unlikely in the near future for these teachers. Technology is already heavily utilised within teachers' assessment practices within the performing arts so to continue to use this and produce technologically mediated performances is something that has seemingly been integrated into their practices. This potentially raises some interesting further explorations as to whether the use of mediated performance within a qualification has been truly embraced as a form of disciplinary practice, or whether the impact of accountability measures has seen teachers implement practices that are not fully congruent with their beliefs as suggested in the use of technologies to support composition (Devaney, 2019).

The final section of this discussion considers research question 4, What is the role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum? This question is considered in more detail in the next chapter, but some initial potential roles of technology are discussed here.

5.3.3. *The Potential Role of Technology (RQ4)*

The findings of this study suggest that there are two primary potential technology roles teachers sought to enact within their curricula. The first is the potential role of technology as pedagogical support, through which students gain musical competencies, while the second is to offer students an understanding of technology as a route to considering wider careers within the performing arts.

What was very clear in this study is that all the teachers believed that technology should underpin pedagogy and not the other way around when used in the secondary classroom, something that suggests practice-based understandings of the use of technology are in line with previous calls in the literature to ensure technology was a secondary consideration to pedagogy (Savage, 2010). While this was a belief shared by all the teachers in this study, the extent to which they were able to enact this in the classroom varied, with many pointing to the barriers described earlier in this section. In Wake's categorisations of the use of technology, the teachers in this study discussed using technology as a supplement (Wake, 2018) and were not seeking to change their ways of teaching and learning within the classroom.

This is in opposition to some calls within the field that critique the use of technology for specific tasks but instead wanting teachers to consider the creative possibilities that technology affords (Partti, 2017; Waldron, 2017; Tobias, 2016). In this study, it was clear that the teachers had specific disciplinary subcultures (Ball and Lacey, 2019) around the use of technology, and as such, they saw the role of technology as subordinate to their existing pedagogical practices. This was particularly prevalent when the use of technology caused tensions within what could be said to be their signature pedagogies (Shulman, 2005). Teachers in this study felt tension, particularly in the quietness of the room when technology was used, reminiscent of some of the discussions in networked individualism (Castells, 2007), where students are no longer working directly together but instead, their actions are mediated through a form of digital technology. Some in the field have called for technology to be 'seamlessly woven into the fabric of the music class in the context of students' musical engagement and learning (Tobias, 2016). While teachers were clear they wanted to include technology in more ways within their future curriculum redesigns, for the teachers in the study this call for technology to be 'seamlessly woven into the fabric' did not seem to be the end goal, which demonstrates a potentially different understanding of the role of technology in practice.

Most teachers in this study were undergoing some form of restructuring of their curriculum at the time of being interviewed (discussed further in section 4.2.1). Technology featured quite heavily for most teachers as something they felt was an important aspect of the curriculum and one they felt was important to include, a sentiment shared by both music and drama teachers. The finding that drama teachers were adamant digital technology should form part of the curriculum is in direct opposition to previous research, which suggested that drama teachers specifically did not want to see technology used in the drama classroom despite feeling that it was an inevitability (Millett, 1996). In the intervening years, however, this feeling seems to have shifted with all the drama teachers in this study recognising the place of technology in the classroom and the curriculum and whether they felt they used it successfully. This seemed to be because most teachers in this study felt that the inclusion of technology in their curriculum could offer a way to bridge the gap that exists between the 'real-world practices' of the performing arts industry and what was on offer in their performing arts curriculum (Burnard and Haddon, 2015). While this was sometimes discussed

as a way to engage students, it generally stemmed from a desire to bring performing arts curricula up to date to reflect the industry should students choose a performing arts career. Given that teachers were looking to use technology as a tool to bridge the education and practice divide, we saw that teachers were looking to include industry-standard technology in the classroom and often rejected technologies that did not fit their understanding of how technology was used in the performing arts industry. This approach was not without problems, as what was ultimately observed was a cycle of barriers, both first- and second-order (Ertmer, 1999) in teachers' use and integration of technology in the performing arts classroom. This was often exacerbated by school-level policies as discussed above, including a lack of funding or the desire to regulate and ensure consistency, which only served to dampen the use of technology within the performing arts curriculum. This cycle typically began with a desire to offer students experiences with technology as a way to bridge the gap between education and practice but was regularly hampered by a lack of access to suitable technologies. Suitable technologies, as described by these performing arts teachers referred specifically to as industry-standard technology; however, the use of these technologies was further complicated by ongoing concerns about the complexity of industry-standard performing arts technologies and their suitability within their pedagogies. These barriers, both first-order in the specific practical access issues together with the second-order barriers of the teachers' own beliefs and values about the place of technology, meant the use of digital technology had, in fact, become positioned as something specialist and 'other' outside the norms of the performing arts curriculum as a whole. This was, in fact, in opposition to teachers' intentions within the curriculum but was a result of a multitude of factors, including their own disciplinary beliefs and school-level policies. Understanding this interplay between teachers' beliefs and their practices as mediated by school-level policy offers one way to explore how to align technology within the curriculum with teachers' disciplinary practices.

5.4. Summary

This chapter discussed teachers' current uses of technology finding that there are both first and second order barriers to their use. The first order barriers presented as issues with access to technology, including a lack of budget to update both software and hardware. Although initially presenting as a first order barrier, this had also begun to be seen as a first-order barrier in the way that music technology had been positioned as 'other', and its inclusion as something distinct in and of itself, rather than as a support for practical music or drama

activities. The chapter also discussed the first order barriers finding that teachers often described a dualism between practical work and technology use, something that further separated the use of technology into a distinct are of the curriculum.

The final section of this chapter then discussed the potential role of technology, suggesting two potential primary roles of technology. The ability for technology to offer pedagogical support, through which students can gain musical competencies, and students learning the practical uses of music technology itself, as a route to broader performing arts careers.

Chapter 6 goes onto explore the design and development of digital orchestration tools that meet these two potential purposes.

Chapter 6.   Classroom Orchestration and the Dampened Curriculum
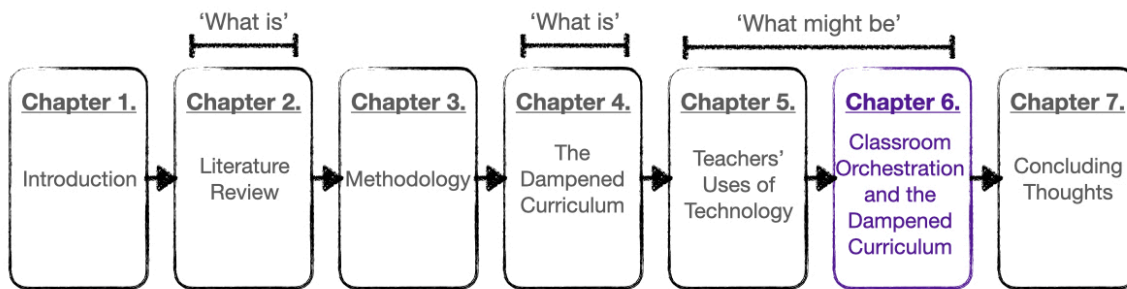
Figure 21*: Thesis structure (you are here)*

Chapter Purpose: firstly, to explore the potential of digital orchestration to meet the two potential purposes outlined in chapter 5.   Secondly, to use the findings drawn from longitudinal and engaged research approaches (Barab, 2004; Nicholson et al., 2022) to offer design insights for the HCI educational technology field.

6.1. Chapter 6 Overview

This chapter continues to consider 'what might be' by exploring the potential role of technology to orchestrate teachers' disciplinary practices within the complex policy environment outlined in Chapter 4.

It addresses the fourth research question outlined in Chapter 3;

> What is the role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum?

And therefore, the second purpose;

> To examine the potential role of technology in facilitating teachers' enactment of the English Secondary Performing Arts Curriculum.

The chapter considers one instance of a Dampened Curriculum as an example of the potential result of the causal mechanism described in Chapter 4, section 4.3.3, and explores the potential role of technology in supporting the teacher to enact their chosen pedagogies and ameliorate some of the dampened practices and pedagogies. It first describes the curriculum and current practices of the teacher before going on to describe the design of three instances of classroom orchestration (Dillenbourg and Jermann, 2010) that aimed to support the

teacher to enact their chosen practices. It describes the design and evaluation of a socio-digital tool to support the orchestration of a complex, constructivist pedagogy, the design of a learning analytics tool as a form of digital orchestration, and finally, the design and build of bespoke technology to orchestrate the teaching of theatre technologies in the classroom. The findings outline the teachers' experiences of using these technologies in an English secondary performing arts classroom before the discussion considers these findings in relation to existing classroom orchestration literature, suggesting that orchestration offers a potential way to support teachers to enact their chosen disciplinary pedagogies in the classroom when the complex policy environment in taken into consideration.

6.2. Classroom Orchestration Designs

This section describes three instances of classroom orchestration, all designed to support the teacher in enacting their chosen pedagogies to ameliorate instances where these pedagogies had been dampened. The designs are described with reference to the aspects of performing arts teachers' pedagogies they were aiming to support and the policy concerns that led to the currently dampened practices for the teacher involved in the study.

The Teacher

Amy (not her real name) is Head of Performing Arts in a secondary school in the North East of England. She teaches a mixed timetable of both music and drama, although primarily trained as a music teacher. She had been teaching for 12 years before the start of the study, so she was confident in her practices and desired pedagogies, having developed them in her decade of teaching experience. Although Amy was interested in working together and exploring the potential of technology, she freely admitted that she was not confident or comfortable with technology. She was adamant in her initial email that she wanted to learn about technology, as they did not include much in the curriculum, and she was keen to change that.

The following three instances of orchestration were all designed and evaluated with Amy while teaching a Year 10 BTEC Music course, specifically Unit 2: Managing a Music Product (Pearson, 2020). This unit requires students to either plan and run a live event or plan and record a CD. The assessment of the unit, as with all BTEC units, was through a portfolio that documented students' involvement in the process. Amy chose this class as one where she did not feel she was enacting her desired pedagogies for various reasons, and one I suggest is an

example of a Dampened Curriculum. Before working together, Amy said she had taught the same way for many years as she had learned what worked for her in ensuring that students met the BTEC requirements and she met school policies at the school she taught at. She had previously felt too time-poor to change the curriculum without support:

> *'Do I have time to learn a complete new way of doing things plan this into a scheme of work that I've already got that I've had for 10 years that I know exactly what I'm doing without having to think about I don't need to change it every year'. (Amy – I2 (Stage 3))*

This was particularly as she often felt the change was more about box ticking than it was about meaningful curriculum change:

> *'I don't mind making changes if it's a good use of my time, you get resentful, making changes and writing documents and doing this was just box ticking and a waste of time'. (Amy – I2 (Stage 3))*

A Dampened Curriculum

In Chapter 4, section 4.3.3, the idea of the Dampened Curriculum was described and discussed as one which sees data used as governance, knowledge as emancipatory aims for self-improvement and has centralised (often hidden control). There were many markers of the Dampened Curriculum in Amy's practices as enacted before working together, which directly affected the curriculum design for the BTEC Music course.

There were instances of data being used as governance, as Amy looked to ensure she was meeting both the requirements of the BTEC course and the school policies, which impacted the curriculum planning for the BTEC course. The school marking policy focused on students making constant progress in lessons, where this feedback and progress needed to be measurable:

> *'we have to give feedback and we have to give it every six weeks and it has to be measured and the kids need to respond yada, yada, yada'. (Amy – I2 (Stage 3))*

This feedback was required as a way of providing quantifiable progress data in the classroom so that Amy could show that students in her class were making constant progress, demonstrated by cycles of feedback and student responses.

For Amy, the need for evidence of student progress was observed as more necessary than the actual progress students had made, with her saying, *'BTEC are awful like that, they don't care that you've actually done it, they want evidence'* (Amy – I1 (Stage 3)). This requirement to produce evidence meant that Amy designed the curriculum to produce this evidence for BTEC rather than in a way that was pedagogically most suitable.

Like the teachers in the first study, Amy was clear that verbal feedback was most useful and was aiming to move away from written feedback as it did not suit her subject:

> *'we're kind of moving away from the old-fashioned sitting down with a pen and paper and music, because in music it's just not the best way I don't think'. (Amy – I2 (Stage 3))*

Despite intending to move away from written feedback, it was clear that Amy still needed to show that she was providing this feedback and said one option was to *'just go over with a recorder, record what I've said, record their improvement, and it's done'* (Amy – I2 (Stage 3)). This was deemed better than offering written feedback and asking students to respond; however, it was still expected that the feedback and students' subsequent response was somehow measurable.

There was evidence that knowledge was seen as emancipatory as school policies asked Amy to create curriculum maps to clearly outline what students were expected to learn throughout the course. Although the BTEC course does not lend itself to knowledge development maps as it focuses primarily on skill development, there was a belief that she did not understand how to apply it to her subject, with her saying *'we get sent examples of like other staffs, curriculum, maps'* (Amy – I2 (Stage 3)). This need to create curriculum maps meant there was an increased focus on students proving they were able to remember and use keywords as this was more easily measurable, even where their understanding of the process was not that well developed.

Amy felt that this was repeated in the BTEC specification where to reach the required standard meant to *'jump through certain hoops'* (Amy – I2 (Stage 3)). She gave the example of one student's work where she said she knew they were aware of their target audience but:

'actually, you haven't written the word target audience five times in this paragraph and really you should to show that you understand what the target audience is. Daft things like that isn't it?'. (Amy – I2 (Stage 3))

The whole school curriculum was designed to ensure that it aimed for self-improvement. For Amy, it was necessary to ensure that students met their KS4 targets and that the performing arts remained on the curriculum at KS4. Students were given specific targets based on their key stage 2 English and maths data with little relevance to their ability in the performing arts. Despite this, Amy aimed to ensure that these targets were met to ensure the course was observed as successful and felt that some aspects of what she deemed a good performing arts education and pedagogy were lacking, saying:

'you need the grade and I need the grade but I guess this is the system we're living in, isn't it, you let certain things go for the ease of it'. (Amy – I2 (Stage 3))

This feeling that she needed the students to get the grade was ever present in her descriptions of her current curriculum, which was designed primarily with the achievement of target grades in mind.

There were signs of centralised control exerted by both the school and the wider policy requirements of Progress 8 and EBacc. Amy had seen some reduction in entries at KS4 and offered BTEC as an alternative course to GCSE to maintain a larger number of students choosing the performing arts. The aim was to offer two alternative courses with different aims to suit the range of students at the school Amy taught at. There was some concern about whether BTEC would remain on the list of approved qualifications however—something that fed into concerns about spending time reimagining the curriculum. For Amy, the ongoing concerns about the possible removal of the BTEC course from the list of approved qualifications led to her continuing to teach it in the way she had always done over the last 10 years, as students were able to reach their grades through the way she taught it. The BTEC music course was offered less time on the timetable than core subjects such as English and maths, something not uncommon across most secondary schools. The school Amy taught at also had variable length lessons (between 50 and 65 minutes). Often, the BTEC course was timetabled so that students had shorter lessons in music as opposed to English or maths. The BTEC specification, although offering a more practical option when compared to GCSE music, still required a large amount of quantifiable proof that students had gained the necessary skills

and knowledge. For example, one of the later units students all had to complete was a multiple-choice exam based on the music industry. This unit was intended to be a synoptic unit where experience from undertaking the other units was consolidated in the exam. In reality, the nature of the multiple-choice assessment meant Amy designed her curriculum to ensure that students could remember the keywords needed to pass the exam, rather than being able to understand the process in detail (RDN (Stage 2)).

These pressures, both from school and external policy, ultimately led to a Dampened Curriculum. The need to provide feedback every six weeks provided quantifiable progress data in the classroom so that Amy could show that students in her class were making constant progress, demonstrated by cycles of feedback and student responses. This cycle of constant improvement was one that became performative as Amy did not feel the feedback was always necessary or pedagogically helpful (RDN (Stage 2)). This idea of needing evidence was reminiscent of discussions of performativity (Ball, 2003), something suggested in Chapter 4 as a driver of the Dampened Curriculum. The outcome of having to show constant measurable progress was that Amy had dampened her curriculum and designed one that aimed to produce the required evidence both of students responding to feedback and having met the BTEC requirements (RDN (Stage 2)). This was at the expense of being able to offer students an in-depth and practical understanding of the music industry, something she was clear she wanted to be able to provide them. Ultimately, there was evidence that Amy had changed, or 'schooled', her practices (Spruce, 2002), something that was considered a resultant factor of the suggested causal mechanism discussed in Chapter 4, section 4.3.3. This appeared to have dampened Amy's curriculum as it had led to the focus being primarily on evidence generation over students gaining an understanding of the processes of gig planning.

The requirement to produce curriculum maps, together with the BTEC specification requiring the use of specific terms to be used to evidence achievement, saw the curriculum dampened to focus on ensuring students had a grasp of terminology specifically, moving more towards what Franks (2016) would define as learning *about* the performing arts. This focus on key terminology left less time to focus on taking part in the processes of planning a gig and instead saw students spend time sitting at desks learning key terminology to use in reflective reports rather than take part in practical activities (RDN (Stage 2)).

The focus on meeting targets that were often more 'ambitious' each school year aligns with the suggestions that dampened curricula are self-improving. To meet the targets, the BTEC curriculum had been dampened so that students put on a small lunchtime concert as it fulfilled enough of the requirements to ensure that students met their targets. It also meant that the activities leading up to that concert were designed to guide students through the process in a very structured way. This change dampened Amy's pedagogies as she wanted to be student-centred and offer them vocational experiences. The ongoing concerns about whether the Music Level 2 BTEC would remain on the curriculum and whether it would remain an approved qualification led to a continued dampening of Amy's practices. This was mainly because she was reluctant to change ways that had worked in the past to find that the qualification was no longer one she could offer. Even though it was not entirely aligned with her practices, the dampened version of the curriculum allowed her to ensure students met their targets, so she continued to enact it (RDN (Stage 2)).

The Dampened Curriculum in Practice

Amy had chosen the BTEC course and ran it concurrently with GCSE music, offering it as an alternative course that gave students a better understanding of the music industry and was less focused on classical music than the GCSE specification she followed. Before working on this project, she had taught the unit for over five years, using a lunchtime concert as the live event in which students were responsible for planning, marketing and performing. While this met the assessment criteria of the BTEC and allowed students to demonstrate the skills necessary to pass the course, Amy felt many of them lacked understanding of the music industry and were particularly unable to demonstrate industry-standard protocols for planning and running live music events. This was specifically noticeable in the multiple-choice exam students were expected to take, as students were often unable to relate the questions to the earlier units they had undertaken, including Unit 2 (RDN (Stage 2)).

The aim of the BTEC course (as imagined by the exam board) was to offer students hands-on experiences of working in the music industry, with assessment done through the submission of portfolios rather than high-stakes tests. While the BTEC course was popular, with a good cohort of students taking it each year, the opportunities for students to get hands-on experience in the music industry were limited by the lack of funding in the department, as well as the continued school pressures to ensure students met their targets. The reality of

Amy's current practices was that this was not happening because of many factors, not least school-level policies and pressures. Consequently, she described a course that was less focused on ensuring students had meaningful experience and understanding of the music industry and was instead focused on ensuring students passed their qualifications. Using a lunchtime concert as the live event that students had to plan and run meant that Amy remained in control of the process, with clear and structured guidelines for students to ensure that they produced the necessary documentation to demonstrate they had met the assessment criteria, even where their understanding of the music industry was lacking. Ultimately, what Amy offered was a dampened version of the curriculum she wanted to enact, but in facing similar ongoing pressures to those described in Chapter 4, and described in the section above, the result was a curriculum that simply ensured students passed their BTEC and met their target grades (RDN (Stage 2)).

The process

To teach Unit 2, a new curriculum was co-designed that allowed Amy to meet all the necessary criteria for the BTEC while enabling her to enact pedagogies that were better aligned with her disciplinary ideals. Amy was clear that her desired pedagogies were student focused and she discussed wanting to ensure that her curriculum responded to students' interests:

> *'the thing that we need to think about more is rather than some adult standing up telling us it's good and we like it, is the kids saying that actually, we like this'. (Amy – I2 (Stage 3))*

This intention to be student-centred, together with the project-based nature of the BTEC course, formed the starting point for the designed curriculum, which drew from student-centred, project-based learning pedagogies.

The resulting curriculum (given the title Gig Academy) aimed to offer students opportunities for experiential learning, gaining an understanding of and insights into the music industry, something that Amy wanted to ensure she offered:

> *'I'm kind of wanting to revamp the way we're doing the whole thing. I'm kind of trying to make it all feel much more vocational, and like they're in the music industry'. (Amy – I2 (Stage 3))*

Amy outlined three specific aims of the co-designed curriculum for students:

C1. Support students to understand the process of organising and running a performing arts event (in this case, a music gig),

C2. Support students to gain an understanding of industry-standard practices, and

C3. Support students' development of personal development skills such as communication, collaboration etc.

Alongside these aims for students, it needed to be possible for Amy to enact the curriculum within the scope and constraints of both the BTEC curriculum and her current school policies (RDN (Stage 2)).

For the BTEC specification, students needed to demonstrate having:

B1. Made a significant and imaginative contribution to the planning of a music product,

B2. Made a sustained and effective input into the development and delivery of a music product,

B3. Created imaginative promotional material, and

B4. Evaluated the strengths and weaknesses of the product.

Any curriculum needed to meet these aims while ensuring that Amy could enact the curriculum within the current policy environment. Amy highlighted several school policies that she needed to be able to meet:

S1. Feedback and marking policy—she needed to ensure work had received measurable feedback students had responded to,

S2. Teaching and learning policy—she needed to demonstrate clearly that students were making progress throughout the project,

S3. Assessment policy—she needed to ensure that students achieved their target grades.

Amy was concerned about how she would be able to enact the curriculum, as although she wanted to ensure the curriculum was student-centred, she remained cautious of her ability to meet the BTEC objectives and the school policies. Given Amy's concerns regarding her ability to enact the curriculum in the way she wanted to while remaining able to meet school-level policy, technology was considered as a way of supporting Amy's enactment of the curriculum (RDN (Stage 2)). Given the well-documented possibilities of classroom orchestration and its ability to support teachers' enactment of complex curriculum models within given constraints of the classroom, the three designs documented in this chapter are all forms of classroom orchestration.

6.2.1.   Orchestration Design 1: Socio-Digital Tool to Support the Teaching of Unit 2

The first classroom orchestration instance, Gig Academy, is a socio-digital curriculum comprising both a design for the delivery of the unit and the accompanying digital orchestration tool that supported this. The aim was for technology to provide 'a common layer' to allow for 'efficient integration and orchestration' (Martínez-Maldonado et al., 2013). As the aim was to understand how technology of this kind could be utilised in this setting, rather than building a bespoke system, existing tools that could be appropriated were used. This was done for several reasons:

1. To avoid any technical issues that would interfere with the teacher's perceptions of the use of the technology, something that has presented problems in the evaluation of previously designed systems (Verweij, Bakker and Eggen, 2017),

2. To ensure that the technology felt 'authentic' and that it was used in the real world and not specifically for educational use, something that students have highlighted as off-putting about educational technology in the past (Walden, 2015) and that Amy saw as a key aspect of the curriculum,

3. To offer a system that was easily configurable throughout the process by the teacher within the classroom, something that has previously been seen as a criticism of many bespoke orchestration tools (Jalal *et al.*, 2018),

4. To allow Amy to see that the tool could be reconfigured for other projects, something which other studies have demonstrated is a concern in the ongoing use of bespoke orchestration tools as even where they are successful in the classroom, teachers have identified that if they cannot see how they could be reconfigured for other topics or courses, then they would not reuse them in their practice (Lachand *et al.*, 2018).

Basecamp[4], a project management tool, was used as an orchestration tool for this project. Basecamp was chosen because it was easy to use for both teachers and students, as it offered various configurable options within the system for collaboration and communication, as well as supporting feedback by both the teacher and external experts. This was used to support the orchestration of the project to meet three specific aims discussed below, referring to the constraints above (B1–4 and S1–3).

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[4] https://basecamp.com

Aim 1: Support students to understand the process of organising and running a performing arts event (in this case, a music gig).

Curriculum Design:

So that students understood the process of planning a gig, the aim was to allow them to plan as many aspects of the gig as possible, as autonomously as possible. To ensure students understood the various processes and how the individual specialisms interact to produce a gig, students were split into four specialist groups. Each group had a specialism that corresponded to the roles and professions involved in a traditional live gig: front of house, back of house, lighting, and sound. These groups were then given specialist tasks that corresponded to their given specialism while remaining comparable between groups, for example, the lighting group were asked to produce a lighting plot while the sound group were asked to produce a mic plot. These tasks both required the same underlying skills in terms of process even though the summative outcomes were different.

	Front of House	Back of House	Sound	Lighting
Design Task Creativity / Collaboration	Tickets Promotional materials	Stage Guide	Mic plots	Lighting plots Lighting plans
Remix Portal Task Creativity?	Promo song	Recording instruments	Mixing songs	Mixing songs
Team Communication Communication / Collaboration	1. Everyone – set list 2. Lighting – stage dressing	1. Sound – mic arrangements 2. Everyone – set list	1. BoH – mic arrangements 2. Everyone – set list	1. Everyone – set list 2. FoH – stage dressing
External Communications Communication / Collaboration	Designer for tickets	Hire company / tech manager for equipment	Band for mix	Hire company / tech manager for equipment
Event Scheduling Creativity / Communication	Schedule	Set list	Sound plan	Lighting cue list
Admin / H&S Communication /	Capacity / seating etc	Stage safety / equipment safety	Safe rigging / use of equipment	Safe rigging / use of equipment

Figure 22: Gig Academy group structures and tasks

The Challenge:

Designing the curriculum in this way presented some challenges for Amy, who was concerned she would be unable to ensure that students demonstrated progress throughout the project (S2) and some of the specific BTEC requirements, such as 'sustained and effective input' required for B2 (RDN (Stage 2)). The comparison between groups of what was 'effective' remained a challenge with different task outcomes.

Digital Technology Support:

The digital tool aimed to support Amy with monitoring what students were doing throughout the process of planning the gig when they were working autonomously in lessons often on a variety of different tasks. To do this, spaces for each group were created within Basecamp, allowing Amy to easily monitor each group's activities and share information with them easily. This allowed her to provide specialist information and support to the relevant group, ensuring that each group remained specialists throughout the process. To support the challenges raised about students demonstrating a 'significant contribution' (B1), within these groups, Basecamp offered a wide range of communication tools, including being able to post announcements to a notice board, message a specific group, message the whole HQ (class), or send messages to a specific individual. All of these communication channels, including the one-to-one 'private' messages, were visible to Amy so that any project communication was captured through the digital tool. This meant there was a bank of evidence Amy could use to demonstrate how individual students were making 'a sustained and effective input' (B2). This evidence could also be used to track student progress through the project, with evidence of students' individual contributions clearly visible through the digital tool. This progress monitoring was done at arm's length through the tool so that Amy could see what students were doing unobtrusively and; therefore, support students to remain autonomous as much as possible.
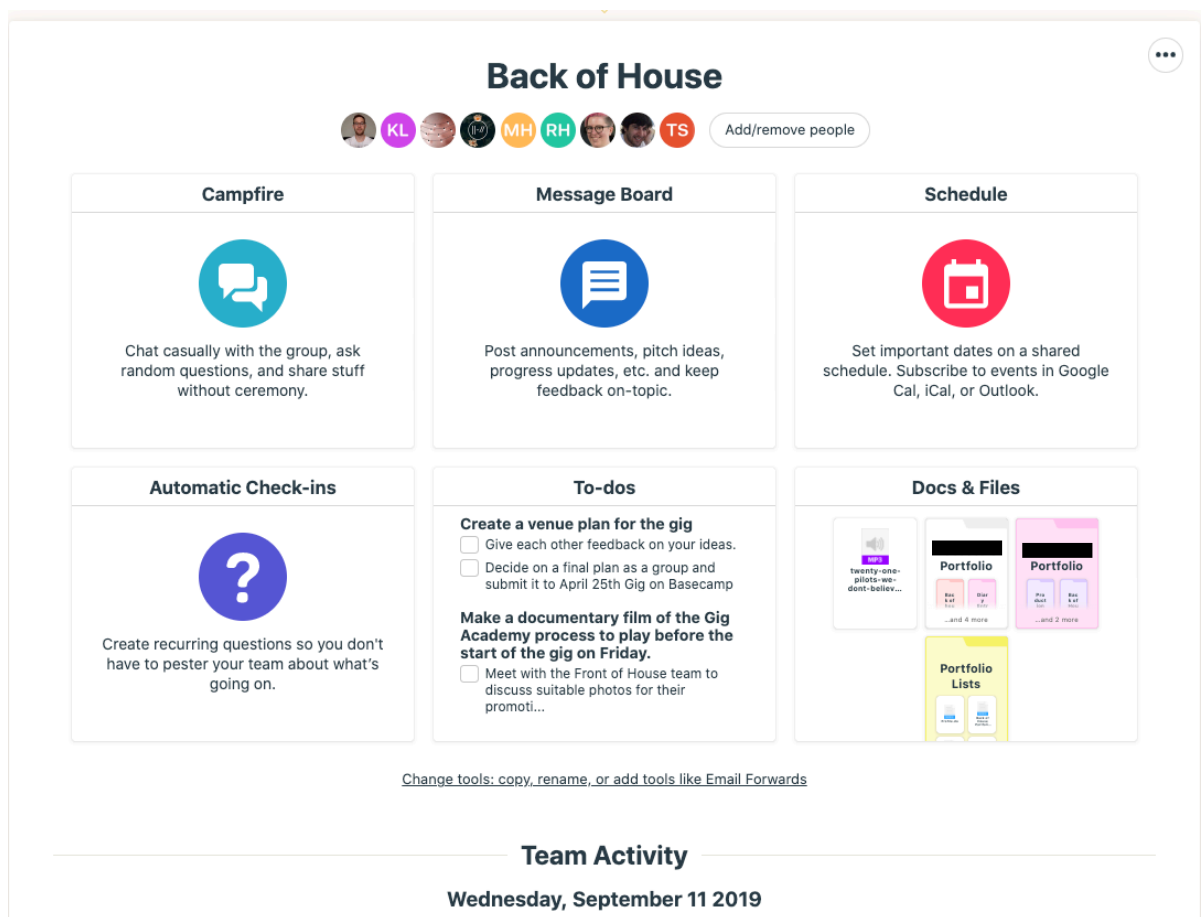
Figure 23*: Example of group areas within Basecamp*

Aim 2: Support students to gain an understanding of industry-standard practices.

Curriculum Design:

In the curriculum, rather than using a lunchtime concert where students performed, the final event was a live gig by a local professional band who had agreed to perform as part of the project.

The Challenge:

The main challenge was to ensure that the requirements from the band aligned with the requirements of the BTEC specification. Amy had particular concerns about how the band's interpretation of industry-standard practices may differ from the interpretation in the BTEC specification and how she would ensure that students achieved their target grade (SP3) (RDN (Stage 2)). Key to this challenge was finding a way to offer regular and measurable feedback that students could respond to and that Amy could use as evidence in the case of marking scrutiny.

Digital Technology Support

The digital tool provided a shared space in which documents, to-do lists, and deadlines were available for everyone involved in the project, the students, the band, and Amy. This single repository space supported a shared understanding of the requirements from the outset of the project to ensure that the requirements of the band and the BTEC specification could both be satisfied. The shared repository also allowed Amy to create and store industry-standard examples of the tasks that students needed to complete, along with a variety of templates to help scaffold their completion. This gave Amy the opportunity to support students' development and progress without needing to design specific tasks for specific lessons. The industry-standard templates and examples offered an anchor when Amy provided feedback, as her feedback could refer to the documentation available through the digital tool. The band were also able to offer expert feedback through the digital tool to complement Amy's feedback.
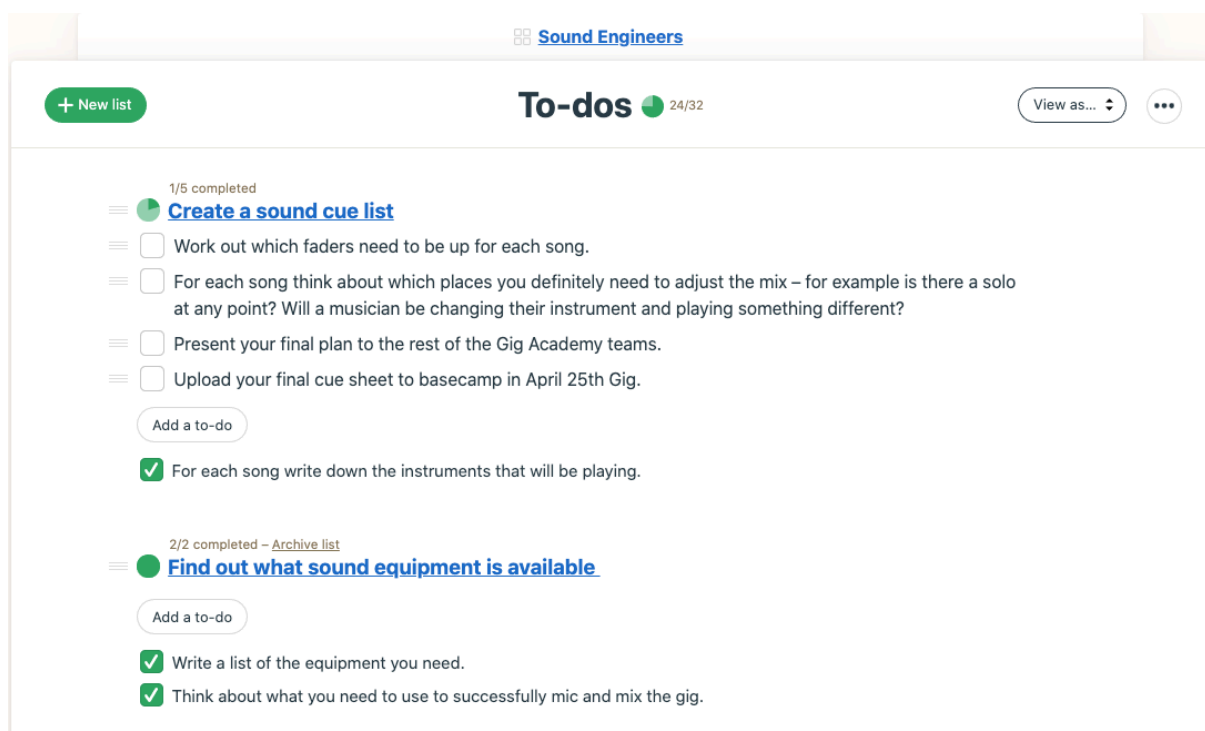
Figure 24: Example to do list for a group
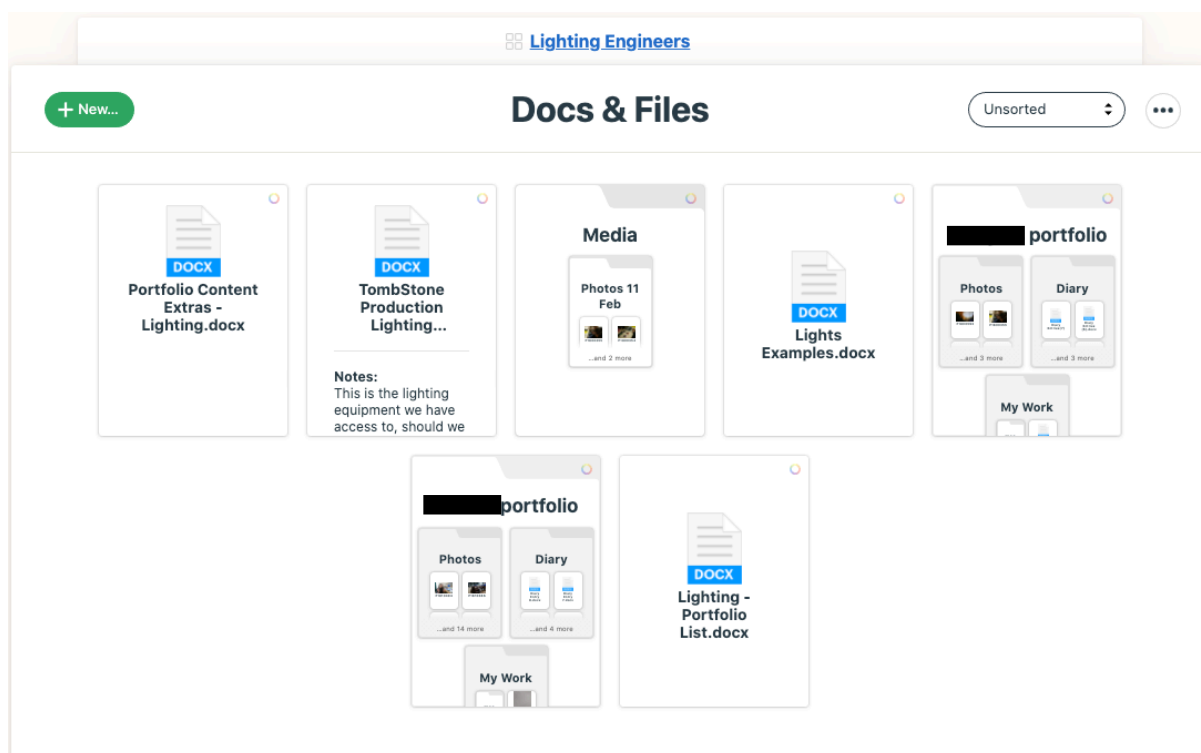
Figure 25*: Example of documents and files within Basecamp*

Aim 3: Support students' development of personal skills such as communication, collaboration etc.

Students collaboratively planned the live event, both working in their smaller specialist groups as well as within one larger whole class group, which necessitated them to practice a variety of skills. The curriculum was specifically designed in such a way as to ensure that a variety of these skills were necessary to ensure a successful outcome of the project. For example, task processes were planned so that individual work was required and sent to a group for peer feedback. The final design idea was worked on as a group for the final submission ensuring collaboration between students. There were also several tasks to complete that required communication via the sharing of information and expertise between the groups.

The Challenge:

Amy had some concerns about how to ensure that students were given enough freedom and autonomy to develop and demonstrate a range of personal skills, such as communication and collaboration, while still ensuring that she remained in control of the processes to ensure students met their target grades (SP3) and the BTEC specification requirements (RDN (Stage 2)). One specific challenge was how to allow students the freedom to communicate with each other and outside community members while ensuring that the communication was suitable

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and largely on topic. It was also necessary to ensure that students' contributions were obvious as they were marked as individuals, not as groups, in the BTEC project.

Digital Technology support:

Maintaining specific and delineated groups through the digital tool meant that students had to communicate when they needed to share specific plans and expertise with other groups. This communication was supported by the digital tool offering a variety of ways to communicate depending on the intended task and who they were communicating with. It also allowed students the opportunity to liaise directly with the band, who were available to answer specific queries for students. Amy could monitor all of the communication happening through the digital tool so that she could intervene where she felt it was off-topic.
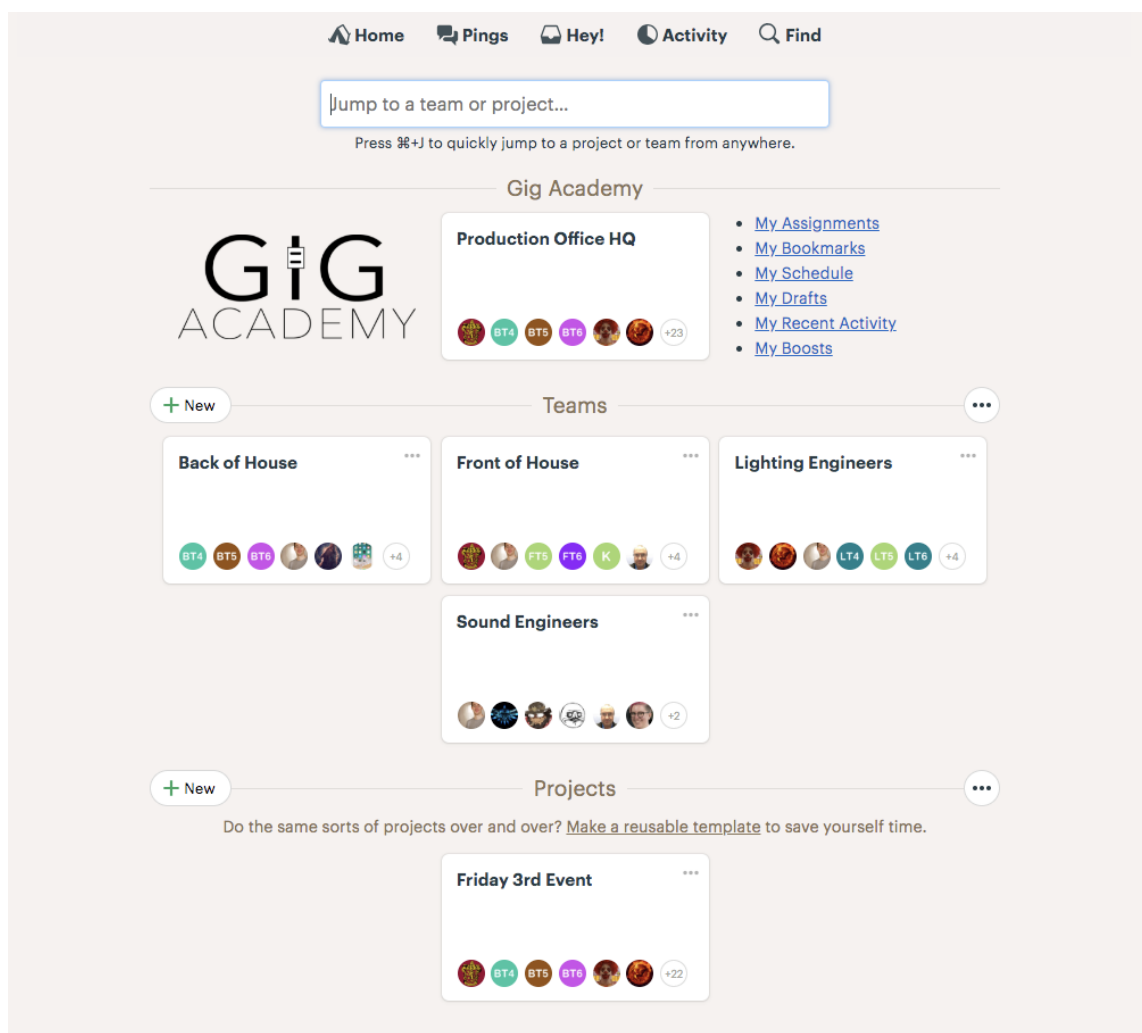
Figure 26: Example set up of Basecamp showing multiple groups

The resulting curriculum and digital tool was used to teach Unit 2, Managing a Music Product as part of Amy's Year 10 BTEC Curriculum.

6.2.2. Classroom Orchestration Design 2: Learning Analytics as an Orchestration Tool

While using the digital tool to orchestrate her teaching of the curriculum for Unit 2, Amy was able to monitor student activity through the digital tool. This was primarily the time and date of the activity displayed on a timeline for the whole class or for an individual student. While this information allowed Amy to monitor student progress at a high level, it was not granular enough to offer meaningful support when Amy was assessing whether students had made 'sustained and effective input' in the project.

To further support these assessment decisions and opportunities for feedback, a learning analytics tool was co-designed with Amy to offer these insights and support her assessment decisions. Learning analytics tools have been considered a form of orchestration in that they offer support to teachers by presenting data in specific and actionable ways (Martínez-Maldonado, 2016). The tool was not intended to replace Amy's expertise, nor was it intended to make specific assessment decisions based on algorithms. Instead, Amy wanted it to make specific data types that the digital tool tracked throughout the project visible to support her in making the assessment decisions asked for by BTEC.

Table 6: Details of the data used in the learning analytics tool and the justification for inclusion.

Data type	Data points evidenced	Justification for inclusion
Messages sent	No. of messages composed. No. of messages replied to. No. of messages sent to their own group. No. of messages to other groups. Length of communications. No. of messages sent inside / outside class time. When the messages were sent.	If messages were composed, this showed the student took the initiative and made a positive contribution. Many replies can evidence a positive contribution if they are answering group members' queries. If messages were sent to other groups, they were instigating collaboration on behalf of their group, which demonstrates work integral to the success of the project.

Data type	Data points evidenced	Justification for inclusion
		Timings were used to evidence the consistency of their contribution and how sustained it was.
Tasks completed	No. of tasks completed. No. of tasks assigned. When the tasks were completed. No. of tasks completed inside / outside class times.	The number of tasks completed was used to evidence a significant contribution. The number of tasks assigned would demonstrate them taking the lead again, evidencing a significant contribution. Timings were used to evidence consistency, and how sustained the contribution was.
Documents uploaded	No. of documents uploaded. No. of versions of the documents. When the documents were uploaded.	The number was used to demonstrate a significant contribution. Versions were used to demonstrate a significant contribution (if they were regularly redrafted as the planning went on). Timings were used to evidence consistency, and how sustained the contribution was.
Calendar events	The number created. The number they tagged others in.	Creating events demonstrated their setting deadlines, which was integral to the project's success.

In the initial design stage, dashboards (see Figure 27) were created to visualise the different data types and data points as a starting point for discussions of ways in which we could combine data points to offer more nuanced support for Amy's assessment decision-making. As this was a working prototype, some of the screens visualised accurate data but did not update in real time.
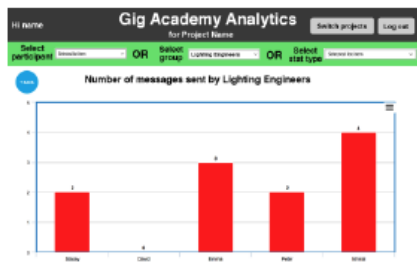
Figure 1: Messages sent by members of a group
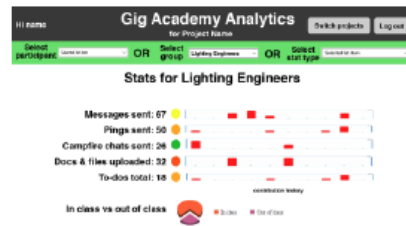
Figure 2: Messages sent by a group

Figure 3: Detailed breakdown of messages sent by members of a group
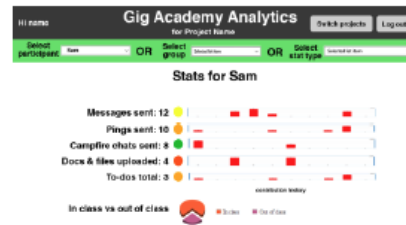
Figure 4: Stats for one member of a group.

Figure 27: Examples of dashboards created

The teacher was shown the initial prototypesed as a design probe (Mattelmäki, 2006; Wallace *et al.*, 2013) for conversations regarding the ways in which the teacher saw uses for such a system within their pedagogy. The learning analytics prototype system was used by Amy while completing formative assessments of students involved in the Gig Academy project. This allowed her to consider her assessment of student achievement and compare it to the data shown by the learning analytics tool. Using data from the project and basing the reflective interview on real-life examples allowed Amy to reflect on how this tool might be used to support her enactment of the designed curriculum. The assessments completed at this stage were used to give students feedback on their progress and offer areas for development that they could work on in the subsequent weeks of the project. This prototype was intended to be the first of several iterations.

6.2.3. *Classroom Orchestration Design 3: Teaching Stage Lighting*

Teaching the lighting group specific practical lighting skills in the classroom posed a particular challenge for Amy. The specific challenge in teaching stage lighting was ensuring that stage lighting could be taught within the classroom while still ensuring that students were taught how to use industry-standard lighting software and hardware. Stage lighting was typically only taught as an extracurricular activity and was only available to a very limited number of pupils interested in stage lighting. These pupils were taught after school how to use the lighting in the lead-up to school shows and concerts by another teacher who was comfortable in

operating the stage lighting (a design technology teacher). This was taught through a traditional master-apprentice pedagogy, with the teacher demonstrating the skills to a maximum of two students at a time and helping them to operate the lighting during concerts or shows. While this gave students opportunities outside curriculum time, there was no teaching of stage lighting within the classroom curriculum. Teaching stage lighting skills was not something Amy was particularly confident with, nor something that she felt able to teach in the classroom due to specific safety and logistical constraints. Amy had access to two lighting rigs, one in the school hall that was well equipped and a second in the drama studio that only had par cans and did not offer enough specialist lighting options to demonstrate a range of skills. While well equipped, the rig in the school hall was unsafe for students to use as it was powered through a live patch bay and required working at height to rig or adjust the lamps. Amy also struggled to book the hall to enable students to practice with the lighting desk as it was a multi-use hall, used for a dining hall as well as assemblies and other events throughout the school year meaning Amy was unable to reliably access the lighting rig during lessons (RDN (Stage 2)).

To support Amy to teach stage lighting skills in the classroom, a toolkit of resources was designed[5], based on the use of *tangible lighting proxies*. These proxies mirror three key affordances of stage lights that students need to understand to operate a stage lighting rig. They demonstrate:

1. The literal physical properties of stage light (how light behaves),
2. The symbolic physical properties (they are individual `units' that can be physically positioned relative to one another), and
3. The key control characteristics of stage lights (number of channels and channel mapping).

The term 'proxies' is used to refer to the hardware artefacts created as representations of stage lights within this toolkit. These differ from solutions offered in other models, simulations, or virtual environments as they are designed specifically to:

- substitute one-to-one for real pieces of equipment, but without replicating the complexities of a high-fidelity simulation,

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[5] https://github.com/digitalinteraction/gigacademy-microbit

- model only the specific properties of the equipment that would enable skills-based practice (e.g., optical properties, but not weight or physical size or cable complexity), while maintaining a direct association with the real equipment, and
- be incrementally switched out for real equipment, enabling larger-scale simulations of venues with only a few pieces of `real equipment' needing to be configured in the classroom but without changing the operator experience of controlling the lamps.

The toolkit consisted of the proxies (see Figure 28), a broker (see Figure 29) and a model venue (see Figure 30), which fits in a small plastic box that can be rapidly assembled by students in the classroom. The *proxies* represent real lamps of different types, and it is possible to interact with them using software or hardware-based industry-standard lighting controllers. By combining the proxies and real or software-based control equipment, students can practice different procedures and skills associated with stage lighting. A *broker* acts as a non-intrusive bridge between the proxy and real equipment to support a fast and flexible configuration of practice environments. A *model* is used to represent the venue onto which the proxies can be arranged and configured to imitate the lighting in the venue.
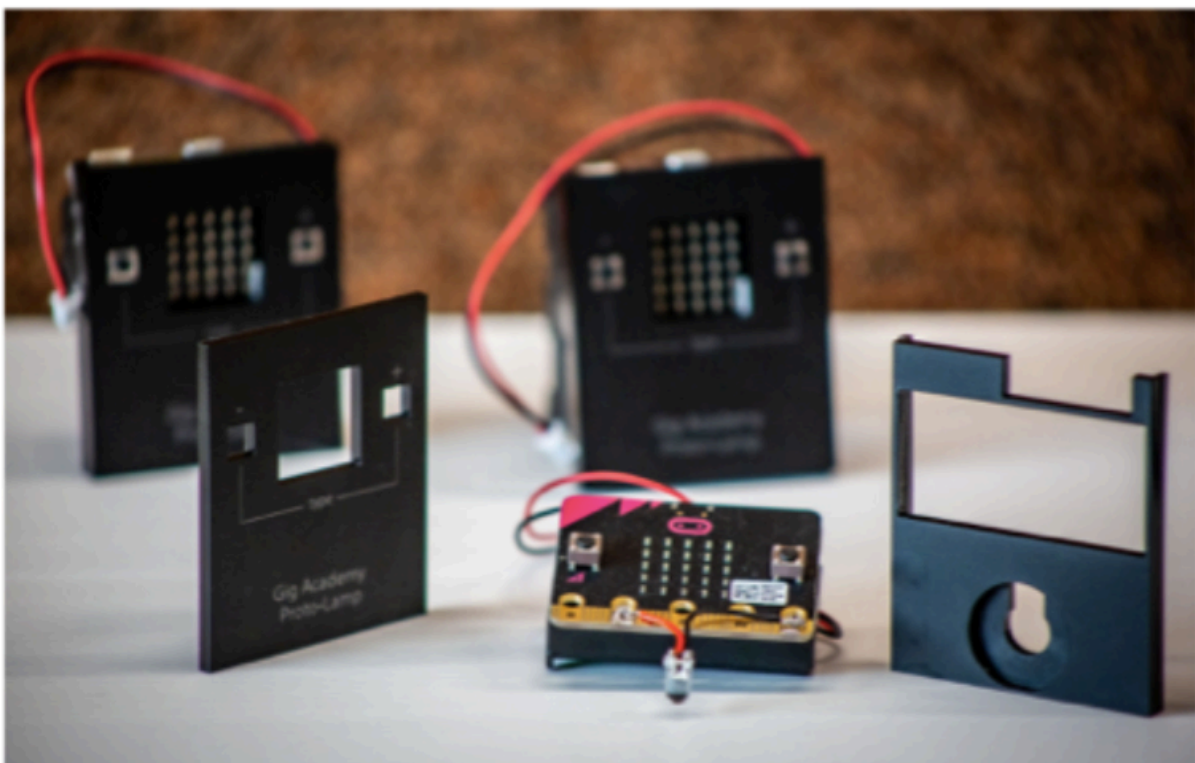
Figure 28: Proxy lamps with micro bit, LED and laser-cut casing
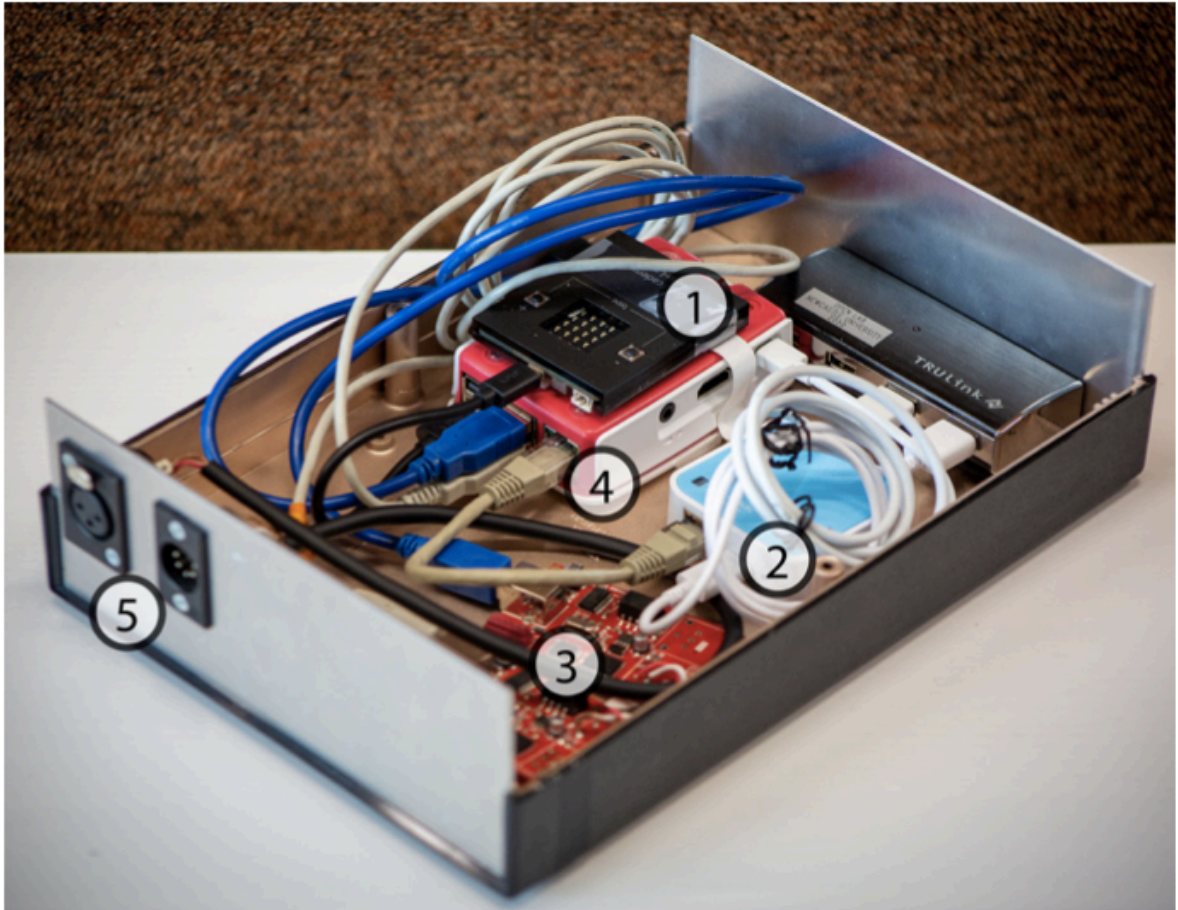
Figure 29: Prototype broker unit with lid removed. 1. Micro:bit, 2. WiFi router, 3. Enttec DMX Pro devices, 4. RaspberryPi, 5. DMX connectors
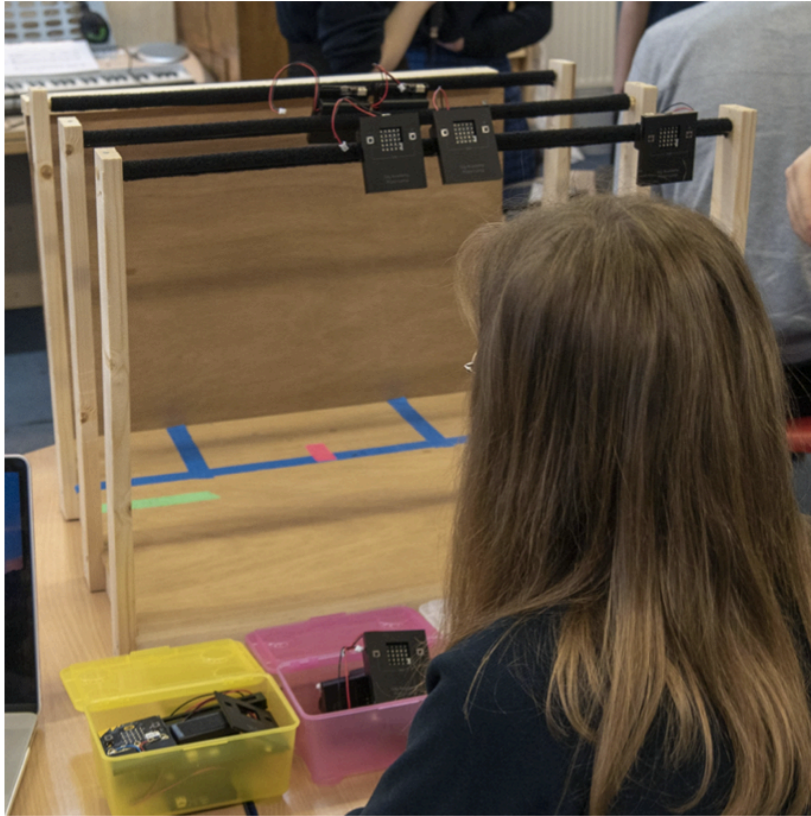
Figure 30*: Students using venue model and proxy lamps to experiment with venue layouts*

The toolkit contained proxies for three common lamp types available to schools. Each proxy lamp consists of a BBC Micro:bit[6] running a Python application, placed inside a laser-cut plastic case. Each device is battery-powered and has one or multiple LEDs connected to the Micro:bit IO pins. On the reverse side of the Micro:bit (so that addresses can be adjusted, lamps are attached to the venue model), buttons adjust the lamp's starting address, which is displayed on the screen. Each proxy lamp is controlled wirelessly to avoid complex wiring so students can concentrate on the lamps and controller rather than specific cabling requirements.

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[6] https://microbit.org/
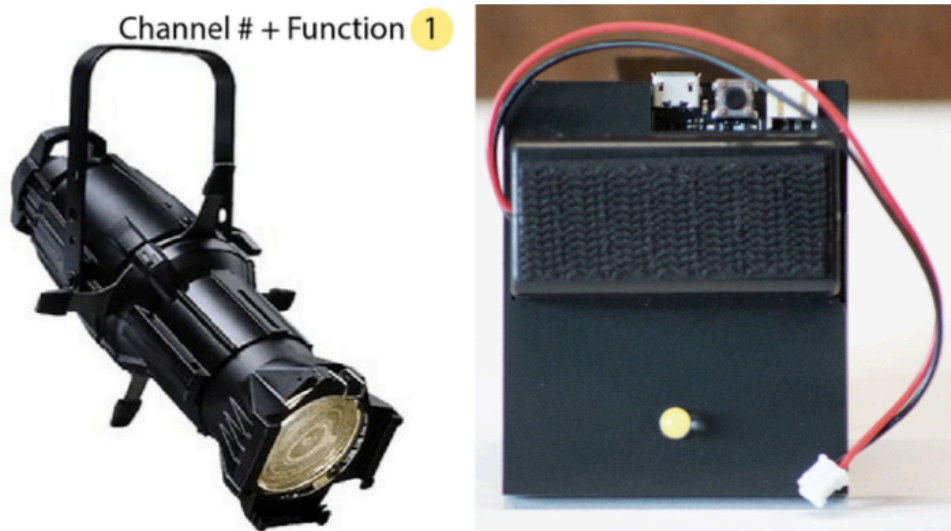
Figure 31*: An ETC SourceFour profile (left) and the corresponding proxy lamp (right)*
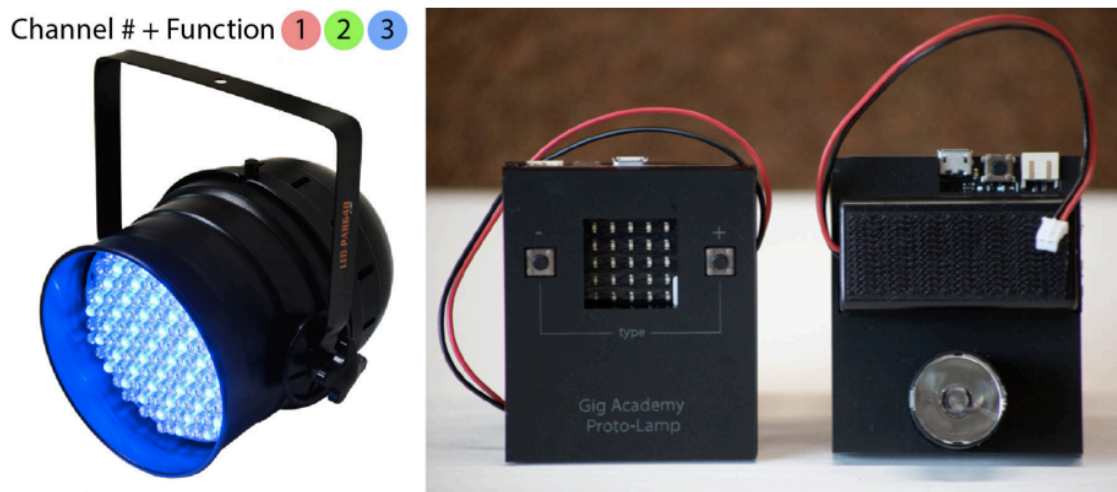
Figure 32: An AVE PAR64 (left) and the corresponding proxy lamp (right)
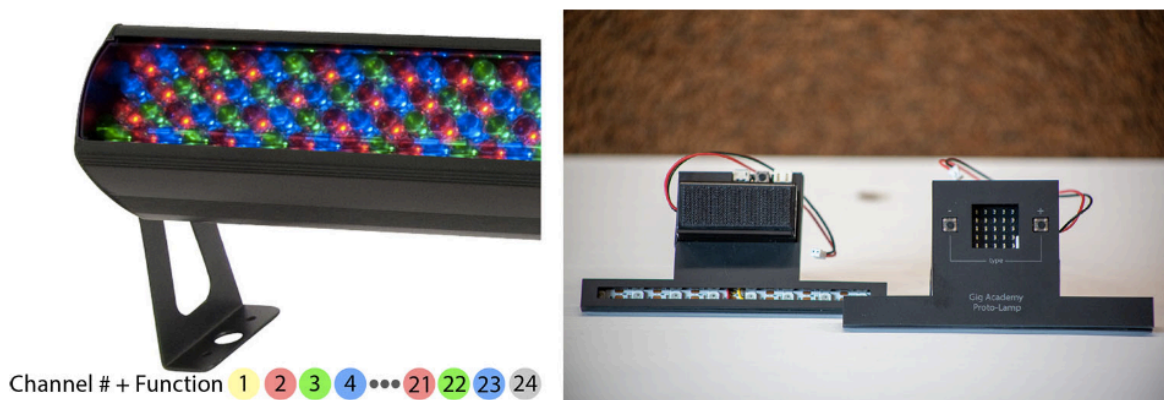
Figure 33: A Chauvet Colour Rail (2.8kg) (left) and the corresponding proxy lamp (right)

To enable the use of industry standard lighting desks, a broker, the linchpin in the deployment of hardware proxies, was developed. The broker is a portable, mains-powered unit which acts as a bridge, or `protocol broker', between the proxy lamps and existing industry stage lighting control protocols. This allows for both proxy lamps and real equipment to be controlled by both off-the-shelf software and industry-standard hardware controllers. The broker allowed both Amy and the students to configure proxy lamps in different arrangements depending on the classroom constraints and task objective. The broker allows for the configuration of simulations (e.g., software virtual lighting environments), models (home-made venue models) and real hardware (stage lamps, control desks).

Example configurations include (see Figure 34 for an illustrative diagram):

- Using a software controller on a laptop to allow students to explore lamp properties, controlling proxy lamps on a classroom desk. (A → C)
- Learning to program the school's own hardware lighting desk ready for a show by controlling proxy lamps in the classroom. (B → C)
- Using the software controller during a live show in the school venue using cues prepared in the classroom to control venue lighting. (A → D)
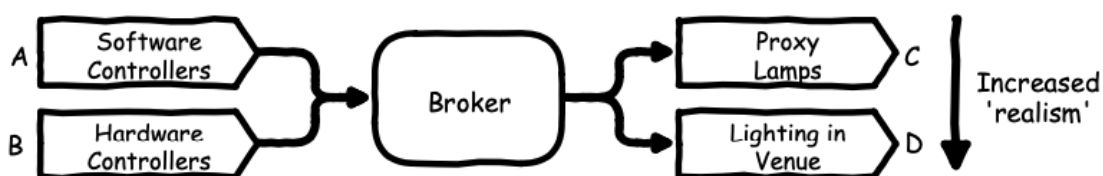
Figure 34: *The broker facilitates multiple configurations of control and output*

The toolkit was used in the classroom throughout teaching Unit 2 to orchestrate the teaching of stage lighting skills in the classroom. The toolkit was available to students in all their lessons so they could use it to practice and complete tasks.

6.3. Findings

This findings section reports Amy's experiences of using the three forms of classroom orchestration in the classroom. The data and analysis stages were discussed in Chapter 3 but are revisited briefly here to explain the findings and discussion in the next two sections. The findings in this chapter form stage 4 of Carspecken's five stages of critical qualitative research

(Carspecken, 2013). The findings use data from the preliminary reconstructive analysis (here referred to as RDN, which resulted from stage 2 of the data analysis. This is used together with data from the dialogic data generation at stage 3, presented here as quotes from either interview 1 (I1) or interview 2 (I2). Table 7 summarises the data, which stage it is from and how the data generated is referred to throughout the next two sections.

Table 7: Guide to Data Generated at Each Stage

Stage	Step taken	Data generated
Stage 1	Primary etic record	Notes kept while in the classroom (observation notes).
Stage 2	Preliminary reconstructive analysis	RDN.
Stage 3	Dialogic data generation	Interview data from two interviews (interview 1 (I1) and interview 2 (I2).
Stage 4	Describing systems relations to a broader context	The findings section (6.3).
Stage 5	Explaining relational systems	The discussion section (6.4).

6.3.1.   *Orchestration Design 1: Socio-Digital Tool to Support the Teaching of Unit 2*

Overall, the Gig Academy project itself was a success, and Amy was clear that she '*would never have done something on such a big scale which I think is really good for the kids to do something on such a big scale, I would normally do just a crappy lunchtime concert*' (Amy – I1 (Stage 3)).

Since running the project, the school have submitted the student portfolios to the examining body (Pearson, a regulated awarding body for national formal examinations in the UK). Students all passed their BTEC unit first time without any resits, exceeding their target grades, with 11 distinctions, two merits and one pass (marked against criteria that award either not

achieving the standard, pass, pass with merit, or pass with distinction). The moderator gave positive reports of the quality and depth of the provided evidence, particularly the suitability for the given students pointing out that 'the scenario has been adjusted to suit the school and its learners, which is effective, and encourages learners to engage with the unit' (From feedback form by External Verifier). The evidence collated on Basecamp was shared at the end of the process directly with the moderator, who was happy with the standard of evidence and the way it was collated:

> *'The Centre has provided a well-organised and documented sample … evidence produced has been on the formation of a live showcase event and learners have successfully focused on the planning and decision-making that goes into managing the event'. (From feedback form by External Verifier)*

Confidence with Technology

For Amy, the continued use of technology in the classroom depended on her gaining confidence in using the technology. This was about more than simply understanding what the capabilities of the software were but rather was about being able to see ways in which this integrated within her pedagogies and her own practices. Although Amy had opted into the project, she showed many signs of nervousness around technology (RDN (Stage 2)). One of her reasons for opting into the project was that they '*currently do no music tech type stuff at all and I'm really not secure with it so this would be a good opportunity for us all to learn more*' (email from Amy before project (Stage 1)). In the initial planning sessions of the project, Amy repeatedly said that she did not have experience with technology nor felt confident with it. She said that her colleague always dealt with the technology side of music whenever he was around, including setting up the PA system in her classroom. He only worked part-time, however, and so Amy said there were days when she would have no PA system if it stopped working on a day Mark (not his real name) was not teaching. She had not had a chance to experience working with technology and felt very out of her depth when trying to use it. She initially seemed very keen to learn and improve, pointing out that she needed to 'move with the time' and felt it should be included in the curriculum for students (RDN (Stage 2)).

The transition to using Basecamp was relatively straightforward. Although she introduced a new platform, the students took to it very quickly, which seemed to give Amy a confidence

boost (RDN (Stage 2)). This was confirmed by Amy in the interviews when she said the fact students were able to use it straight away '*was helpful because they didn't need loads of help in being able to use it*' (Amy – I2 (Stage 3)) which seemed to be a relief to her (RDN (Stage 2)). The feeling of familiarity meant that Amy felt '*relatively confident using it compared to what I do with other tech. You know how crap I am with tech*' (Amy – I2 (Stage 3)). This confidence was important as it meant that the initial hurdle of introducing a new piece of technology was lessened as Amy felt that she could manage it in the classroom with the students:

> '*It was good because it was recognisable to them. It wasn't like they were having to learn something new because as daft as it sounds like I know these kids are like the tech Generation, but Christ, they forget the password every two lessons, they don't know how to send an attachment, like considering they're meant to be like the tech generation they're absolutely crap with, like with computers, like give them a phone or whatever and apps they're fine, but actually kinda like your basics of sometimes word processing and saving and like emails and attachments they're absolutely sackless so being similar was helpful because they didn't need loads of help in being able to use it*'. (Amy – I2 (Stage 3))

Being recognisable meant that Amy '*had the odd question about 'Miss How do I find this document, where's this' but actually not as many times as I have to tell them how to attach a Word document to an email*' (Amy – I2 (Stage 3)) and so very little time was devoted to solving IT related queries so that the focus was on orchestrating the project.

Some of the confidence Amy began to display with the technology during the project seemed to be because the students showed a lot of enthusiasm for using it (RDN (Stage 2)), Amy later supported this saying, '*it felt much more professional … not just what we use in school*' (Amy – I2 (Stage 3)). The school where she teaches uses Microsoft Office 365, so students can log into the Office suite and all have their own OneDrive, email and access to the suite of office programs. This comes with its own set of problems in the classroom as Amy said the school system is '*so over the top with security and safety, like literally, you cannot access your school email on your phone unless you go and get a special code from IT and then download this other app that authenticates it all*' (Amy – I2 (Stage 3)). Beyond using email, she had not previously tried using Office 365 in the classroom with students as '*the kids can't be bothered with that*' (Amy – I2 (Stage 3)). Basecamp allowed students to access it from their phones and other

mobile devices as well as when they were in specific IT suites. This worked better for Amy than trying to use Office as '*the kids don't want the school emails on their phone but they're quite happy having Basecamp*' because it has more '*kudos*'. Students were aware that it was used in industry, and they had gone away after the first lesson and researched the platform, coming back to tell us about the various companies that used it daily in their offices (RDN (Stage 2)):

> '*I think knowing that its used industry wide gives it that kudos, like I said with the kids, but actually with me in terms of the confidence that it works as well. There is that element of do I trust this program? What happens if they forget their password, which is fine because I know that I can get in there, but you know, it's all these things where it's a different worry if something goes wrong when you're working with kids whose qualification it is and like, you know, is there a backup? What happens if their servers go down and they lose everything? will that happen? could that happen?*' (Amy – I2 (Stage 3))

Within the first couple of sessions at school, students were using Basecamp regularly both inside and outside lessons (RDN (Stage 2)). Amy confirmed this later, saying this was happening as '*they had it on their phones, they liked using it*' (Amy – I2 (Stage 3)). Small features that were not considered initially, such as the ability to choose the colour of their folders on their portfolio, were discovered by the students partway through the project as they began to experiment with more of the available settings and features (RDN (Stage 2)). Amy also noticed this, suggesting this meant that the students started to feel a sense of ownership over the system '*they liked to have their own little area organised. You know, they kind of took a bit of pride in using it I think as well*' (Amy – I2 (Stage 3))*.*

Control over orchestration in the classroom

There was some ongoing concern throughout the project about whether the required work was actually in students' portfolios (RDN (Stage 2)). Amy later reflected on this saying she was concerned because '*BTEC are awful like that, they don't care that you've actually done it, they want evidence*' (Amy – I2 (Stage 3)). She found it hard, particularly later in the project, because the students were '*just wanting to get on*' (Amy – I2 (Stage 3))*.* Amy felt they got behind on their portfolios slightly as '*they were enthusiastic and they were keen and there's possibly just that balance a little bit, where I've not been saying 'right I want these tasks done by the end of the day' as their teacher*' (Amy – I2 (Stage 3)).

Overall, Amy found it *'easier to see at a glance'* (Amy – I2 (Stage 3)) who had submitted the required work at specific deadlines. She would direct this from her computer and students began to enjoy the beginning of lessons when Amy would start with *'Right, who hasn't handed in this week'* or *'who hasn't done a log this week'* (RDN (Stage 2))*.* Those students who always handed in work on time often took pleasure in the fact that missing or low-quality work was visible to everyone, *'for example if our diaries weren't up to scratch we would know that week'* (Student 4) (Reflection and quote taken from observations in RDN (Stage 2)). When discussed with Amy later, she said that Basecamp facilitated this process for her because *'being able to see that instantly was good'* as '*I don't have to go back out and in out of every kids' folder and through the whole system I could access their folders a bit easier'* (Amy – I1 (Stage 3))*.*

There were some concerns, however, about the visibility of students' work when it came to submitting original work for assessment for BTEC. Students could see other's work within their group, which meant they could see other examples. Students used this more as a method of accountability throughout the process, particularly by those students who took leading roles within their groups who felt it was '*a good way of getting updates on everyone and what they were doing' (Student 14) (Reflection and quote taken from observations in RDN (Stage 2).* Amy, when discussing this in the later interviews, said she was concerned about the availability of work as '*the boys in particular found a bit of a loophole with basecamp that there wasn't with just like saving things on the school system in your folder so that they can access other people's work'* (Amy – I1 (Stage 3)).

When revisiting this a year later, as Amy was planning for the new course, she reflected on this '*double edged sword*' because '*it's good that they can share stuff within their team, but you have to have trust within your team, I guess, that it's not going to be abused'* (Amy – I2 (Stage 3)). When considering ways in which this could be mitigated in the new school year, rather than changes to the technology, she said that she would '*be down on it straight away*' and '*make sure the rest of the class knows that that person has had their parents contacted and that it's unacceptable and then hopefully that would, you know, stop it happening and I will mention very clearly, you know, that plagiarism can result in like, a U grade basically if they're going to be plagiarising'* (Amy – I2 (Stage 3))*.*

Basecamp as an orchestration tool facilitated students to work in multimodal ways, with a central repository and the ability to communicate with varied groups of people both within and outside the classroom. Supporting multimodal ways of working meant that throughout the project, many of the activities were completed using other systems or carried out in person or on paper leading to concerns that students had not completed activities (RDN (Stage 2)). Amy reflected on one incident saying, '*There was time where I was like, 'Oh my god, [student], you haven't handed in six of these documents and like the deadlines next week, like what's going on?' And she's like, 'oh, I've got them. I just need to take pictures of them'. And it was just like 'phew''* (Amy – I2 (Stage 3)). When asked whether she would make changes to the process, she said she felt it was about building routines with students as *'I guess it's like anything, you can only see what the kids actually choose to upload'* (Amy – I2 (Stage 3)).

To-do lists were used extensively by students throughout the project, who used them to plan and structure their work during lessons. While the students used the to-do lists extensively, it appeared that their ability to tick off tasks when they felt they were done was seen as a loss of control from Amy's point of view (RDN (Stage 2)). She confirmed this in a subsequent interview when she said '*they don't necessarily match up between what I think and what they think sometimes... when they think they've done a task, and they tick it off, whether I agree that they've actually fully completed that task to the best of their ability*' (Amy – I2 (Stage 3)). Amy found this difficult given the pressure to ensure students were demonstrating progress and performing to their expected ability. On multiple occasions, she seemed to lose faith in using the technology to orchestrate and reverted to using paper checklists for students, sometimes creating a generic version on the computer and then printing them out to highlight the tasks individual students were missing or were not up to standard (RDN (Stage 2)). At the end of the project, when reflecting on this Amy said, '*I suppose there is ways to communicate within Basecamp, but I sometimes think nothing can take away that sitting down and let's have a quick discussion about it*' (Amy – I2 (Stage 3)). She worried that relying solely on Basecamp for communication of tasks and improvements to work could result in misunderstandings, for example, when students' work was not up to standard, but they had ticked it off, saying that she '*might think 'they'd 'just been bloody lazy' when they might not have been'* (Amy – I2 (Stage 3)).

Proformas, on the other hand, were used extensively throughout the project. Students relied on them as examples of what they should be aiming for in their work, while Amy regularly

referenced them and guided students back to them to use them, particularly when students were writing their reflective diaries. One such day it was clear that she was becoming frustrated and worried by students completing diaries without using the proforma and was overheard saying '*no, no, no, use this proforma because you're getting your pass, merit and your distinction with you writing in the format you need to write it in*' (Observation and quote from RDN (Stage 2)). The availability of the proformas for all students and teachers meant there was a shared understanding of the tasks that were to be completed, with Amy later reflecting '*you can have more control like that (pointing at the proformas on basecamp) rather than if they're just sat at a desk, and you might write on the board, right, this is your first paragraph, second paragraph, third paragraph, but actually having it in front of them on that document probably does give you more control*' (Amy – I1 (Stage 3)).

Trusting the Technology Orchestration

Using basecamp to orchestrate and coordinate activities in the classroom took some getting used to for Amy. She told me early in the project that it was '*totally different to anything I've ever done before*', admitting that she was '*a complete control freak and like to have everything the nth degree in my way*' (Observation and quote from RDN (Stage 2)). While she was initially sitting back, she said that this was because she was finding it very hard to know what to do with herself, and she '*found it very hard to sit back, but it was good because it's good for me to see other ways of doing things*' (Amy – I2 (Stage 3)).

In the initial stages of the project, Amy was very hands-off in the classroom, often sitting behind her desk at her computer, sometimes literally out of sight of the students. The project was orchestrated using Basecamp, and the students took very quickly to it, using it to organise and distribute tasks, communicate with experts outside school, and organise their portfolios. Conversely, Amy rarely looked at it in the lessons, preferring to ask me what students were doing and completing, relying on me to use Basecamp to update tasks or reply to messages sent by the students. In the initial few lessons of the project, Amy struggled to settle into a role and spent a large portion of one of the first lessons walking around the classroom, checking on the students, asking whether they were 'on task' (RDN (Stage 2)). When this was discussed in the later interviews she explained that she was finding it difficult that the lesson had '*a lack of structure*' (Amy – I2 (Stage 3)) as she was used to a specific learning outcome

for the lesson that all students achieved and so found it hard to know what to do while students were working at their own pace and on a variety of seemingly disparate tasks.

At the end of the project, Amy was somewhat circumspect about the use of Basecamp as a way of orchestrating the project. She completed reflective activities, and for most aspects of Basecamp, including feedback, communication with class, and communication with a specific group, she wrote '*not really used to potential*'. Her overall assessment of Basecamp was '*a nice idea—I can def see the benefits. Not sure how I could use it going forward for schools systems*'. She was quite positive about the use of Basecamp for keeping a portfolio listing aspects such as '*access from anywhere, lots of formats acceptable (e.g. take photos of notes), easy to see at a glance, could see what each other had done*' (RDN (Stage 2)).

Despite this, in a follow-up interview conducted a year after the project had ended, Amy said that she intended to use Basecamp with her Year 10s in the new school year 'Well, I think I am going to use it with my new Year 10s. Because then this year, we'll start in the new tech, the tech award.' (Amy – I2 (Stage 3)). She is now running a new updated BTEC course and has written the use of Basecamp into multiple unit plans, setting up new projects for her current class (RDN (Stage 2)).

6.3.2.   Classroom Orchestration Design 2: Learning Analytics

Despite designing the system together as part of the ongoing research project, Amy's reaction to the initial prototype system was not positive:

> '*Having never used it before and always being very sceptical of quantitative data in music I just think I hate it, and I don't like it, and I don't trust it, and yeah it might on occasion give me a great overview of something, but I don't think it's telling me anything I didn't already know*'. (Amy – I1 (Stage 3))

Amy was initially interested in the possibilities of using data analytics to help collect evidence which she might draw upon if required to justify her grading decisions to external examiners. Despite asking about the possibilities of using this trace data from Basecamp, once the initial tool was created and she began to use it with student data, she appeared sceptical about whether the learning analytics aspect could provide something she wanted to use (RDN (Stage 2)). This was confirmed by Amy later in the interviews when she said:

'Like data's great when it's quite clean cut and based on numbers but when it's something that isn't based on numbers it's hard to see it as 100% useful. Yes it might have some uses but it's hard seeing me just being able to use this as pure 'proof' of her being a distinction'. (Amy – I1 (Stage 3))

Although Amy was initially critical of the system's reliability, once she had spent time working with it, she said that she felt the data was quite accurate:

'… but then I'm looking at [Student A's data] and thinking it's better than anybody else's and she has probably done more and so I wish it didn't look like that because I don't want to like it, I don't want to use it, I don't want to like it, I don't want it to fit but maybe it would'. (Amy – I2 (Stage 3))

Despite this, Amy was still insistent that she would not use the system within her practice unless she were directed to:

'I'd probably find some use in it I'm sure I would if I was being told to do it but I don't think I want to, I don't think I would want to'. (Amy – I2 (Stage 3))

Music and Quantitative Data Does Not Mix

Although it was initially unclear exactly why Amy was so sceptical of the learning analytics system, later in the interviews, Amy voiced an ongoing tension between her desire for a learning analytics system that could offer a clear-cut and accurate system for offering data about their pupils and her own beliefs about the nature of music assessment saying:

'In maths they did this exam and they got 7/10 on the Pythagoras questions, they got only 3/10 on the algebra questions so algebra's an area that they need to develop. Great. If you could get me something that was that clear cut and accurate in music, I would definitely be able to see the value in it I just don't know how it could be that clear cut because I just don't see how the subject nature is that clear cut'. (Amy – I1 (Stage 3))

She felt that simply assessing the work of students themselves was less time consuming as they would want to go back and verify the data the learning analytics system gave them:

'I feel like I would find it more trustworthy and probably a better use of my time to maybes go and just look at their work so if there was a way that it could somehow

take the necessity of having to do that out but I don't know how it ever would or could …'. (Amy – I1 (Stage 3))

Although in initial discussions about the potential of a learning analytics system, Amy was enthusiastic about the potential of the data from Basecamp (RDN (Stage 2)), Amy later said she had never considered using quantitative data in music as they felt it was not a good fit for their subject:

'It's an interesting one isn't it because it's not something I've ever considered working well in music, anything statistical, you always think in terms of the qualitative and the quantitative that I just ignore quantitative and I just concentrate on the qualitative'. (Amy – I2 (Stage 3))

She expressed particular concerns about how quantitative data could offer meaningful assessments in a subject such as music:

'I've always felt that numbers and quantities don't work in a subject like music so I guess it's something I've never really thought much about how you could quantify things and how you could quantify things in a meaningful way and I don't know to be honest, I don't know quite what I think about it I don't know'. (Amy – I2 (Stage 3))

Amy felt that quantitative data *'… takes out the context sometimes doesn't it …, it doesn't give you like the nuances of what it actually is?'* (Amy – I2 (Stage 3)). She particularly pointed out that rather than the quantity, they wanted to examine the quality of the work and felt that qualitative data was the only way to do that:

'it might look on paper that they've contributed the same thing because they've spoke for the same amount of time but I think and that's the quantitative side of it and the qualitative is actually but no it's important that I hear the quality of what they've said and the impact and this is where I don't know how useful this is'. (Amy – I2 (Stage 3))

Trust in the System

Much of the discussion of the initial prototype centred around Amy's lack of 'trust' and it appeared that the main problem was that she felt that she could not trust the system to provide data that she would go on to use (RDN (Stage 2)). Amy confirmed this in later

interviews, where she highlighted some concerns about the reliability of the data gathered from the system initially:

'My kind of issue with the to do lists was that they ticked off when they'd done it and sometimes what they considered to be the finished item of work was not what I considered to be the finished item of work'. (Amy – I2 (Stage 3))

There was initial scepticism of the data generated automatically by the system, with Amy looking for the ability to 'verify' the data before being willing to trust it or use it:

'the data's only useful if it's actually relevant, no, not relevant, that's not the word I'm looking for, if it's been verified I suppose because just because they've sent a certain number of messages doesn't mean it's been useful.'. (Amy – I2 (Stage 3))

She felt that, although she was looking for learning analytics to offer ways to reduce workload, a lack of trust could lead to extra work instead:

'If you don't trust it and you have to go and verify it all yourself, that's a bit time consuming isn't it when you could have probably just given your opinion, marked their work, looked through their work in the first place'. (Amy – I2 (Stage 3))

Some trust issues appeared to have resulted from a lack of understanding or trust in algorithms used in computing generally as well as a specific idea that learning analytics were solely a way of offering summative assessment (RDN Stage 2). This was later confirmed by Amy in the interviews when she said:

'I don't know how, or if it's even possible that a computer could quality assess what they've [the students] uploaded'. (Amy – I2 (Stage 3))

When reflecting on this, issues with the algorithms used within learning analytics systems were specifically doubted:

'You'd probably still doubt it wouldn't you? Because at the end of the day it's not a human being reading something and deciding what it is it'. Amy did feel that it had potential uses within formative assessments, saying *'So I think it's a good flag, I don't know necessarily how much I would trust it'* (Amy – I2 (Stage 3)).

Room for Teachers' Expertise

Although the design of the initial prototype did not result in a design that Amy wanted to adopt into her practice, she did feel that teachers should be involved in the design of learning analytics:

> '… You wouldn't have somebody try and implement new surgical ways of doing things without consulting with the surgeons …'. (Amy – I2 (Stage 3))

She felt that if the learning analytics were not designed in tandem with practising teachers, then it did not consider teachers' expertise. *'It just devalues the profession and the skill set and the understanding doesn't it of what we do?'* (Amy – I2 (Stage 3)). Amy pointed out, however, that *'there's nobody more senior in this school who knows anything about music, I certainly wouldn't want them telling me what good music teaching was going to look like in a bit of data.'* (Amy – I2 (Stage 3)).

6.3.3.   Classroom Orchestration Design 3: Micro: bit Lights

Models as a Learning Resource

The models allowed students to get familiar with the lighting software or desk that they use and this was used a lot with the students (RDN (Stage 2)). Amy confirmed that the use of the lights was a suitable way of working in the classroom, with Amy saying, '*I feel that kind of staged approach and like the practising … just seems just much more sensible*.' (Amy – I2 (Stage 3))

She also felt they allowed students to understand how they would organise the lighting rig on the night of the gig:

> 'they were terrified at first about this equipment but like literally as soon as they
> got these little bits in their hands they were pressing the buttons and they were
> like fine once they'd had a couple of practices with them'. (Amy – I2 (Stage 3))

The models formed a natural part of the learning process for students throughout the time they were working with them. Students utilised the lights in all sessions, and collecting them from their storage place in the classroom, setting them up and using them as a resource became a natural part of their lesson routine. They were also used when students were creating rig plans for the final gig (RDN (Stage 2)). Following the technical and dress runs in the first school, Amy commented that

'the tech team's confidence was impressive and admitted to having been sceptical that students would be able to run the show. They felt that adults (who were there to support) would really be running it while the students were sitting with us'. (Quote taken from RDN (Stage 2))

Nobody stepped in to help students with the lighting desk during the gig, and the show ran without problems. For the majority of the time, students were on their own at the lighting desk, taking full control over controlling the scenes. Students had some help to physically rig the lights before the gig but solely ran the lighting desk throughout the performance (RDN (Stage 2)). Amy was impressed, saying:

'I didn't touch the lighting desk at any point during the gig, there was no need for me to do so. I was on hand if there were any concerns but wasn't even needed to answer any questions'. (Quote from RDN (Stage 2))

Practical Ease of Use

One of the reasons the lights appeared to be used regularly in lessons was their size and portability (RDN (Stage 2)). The size of the models meant that they were easily portable and storable within a classroom:

> *'They were a good size for students to work with- they were big enough that they weren't too fiddly but small enough to be able to move around easily without worrying about weight/practicalities'. (Amy – I2 (Stage 3))*

As the models are portable, students could use them between classrooms as needed. Students were in three different rooms for their BTEC lessons, and they were observed taking them and using them in all classrooms (a music room and two different computer rooms), collecting them and moving them easily as needed (RDN (Stage 2)).

As they could be used within any classroom, it meant that Amy did not need to book the room with a fixed lighting rig, making it far more possible to teach lighting skills:

> *'It is difficult for us [to book the hall] as the hall is used for break/lunch (especially with a split lunch it was often during their lessons). This [using the lights] was considerably better than having to go and use the big ones every lesson … and manageable as well'. (Amy – I1 (Stage 3))*

Using the models made teaching lighting more manageable for Amy as they allowed her to keep students within the classroom rather than having to supervise them in other spaces within the school:

'[The lights were] much easier as I knew where they were and had less running around the school to do to check on everyone, it then comes down to supervision - having kids spread out around the school is always a bit impractical'. (Amy – I2 (Stage 3))

More time to practise

When asked whether the students had benefited from using the models, Amy said, '*They probably did get more practice time, and it also added a 'stepped' approach to using equipment that they found quite scary*' (Amy – I2 (Stage 3)).

Students were observed spending minimal time getting the models out and putting them away in each lesson. Given that they were easy to access, they were readily available for all sessions and were used in every lesson, allowing students many opportunities to practise their skills. As they were quicker to set up than the full-sized lights, students could spend more time practising with the lights and software rather than spending large amounts of time setting up or packing away equipment. One example of this was when students were learning to use the moving heads (lights that both pan and tilt as well as have various colour and shape options). Currently, there is no model version of a moving headlight for students to work with, so they were taught instead to use full-size lights. Students spent approximately 20 minutes setting up the lighting stand and the light before being able to try and operate it utilising the software. Students commented that '*the models are so much easier, just take them out of the box, plug the battery in and go*' (Observation and quote taken from RDN (Stage 2)).

Confidence

Overall, Amy felt that using the models to teach stage lighting, she was more likely to teach lighting skills to students, although she was clear that:

'[it would] all come down to my confidence - I think the kids really enjoyed it and got a lot out of it so if I felt confident and knew that we had suitable kit I would definitely do it'. (Amy – I1 (Stage 3))

The model lights did help Amy to feel more confident in teaching lighting:

'The smaller scale (less expense, less chance of damage, no big lights zooming across the classroom drawing attention to them, etc) is definitely appealing when students are finding their feet'. (Amy – I1 (Stage 3))

One of the reasons she felt the models helped was because they made the students feel more confident when learning about stage lighting:

'If something was to go wrong you don't have this big light flying around the classroom or anything that everyone can see and everyone is looking at and you're like 'oh my god, it's going wrong' it was quite quirky to have these cute little lights, I think it probably would have worked a lot better than not having had them'. (Amy – I1 (Stage 3))

For Amy, the ability to scaffold her pedagogy using the models was a key aspect of supporting her to teach lighting skills in the classroom:

'This stepped approach gives them more opportunities to develop the skills rather than throwing them straight in the deep end which might just scare them off rather than get them excited'. (Amy – I1 (Stage 3))

6.4. Explorations of Classroom Orchestration

Orchestration has also been suggested as an opportunity to incorporate a more 'sociological' angle in educational technology research, given the focus on orchestrating complex and interconnected pressures and constraints around the use of digital technology (Perrotta and Evans, 2013). In this case, the initial use of digital technology for classroom orchestration took a slightly wider sociological lens to consider how digital technology could mitigate some of the policy constraints seen in the earlier chapter (Chapter 4) that led to the dampening of curricula in many schools. We saw that the teacher in this study, Amy showed signs of a Dampened Curriculum but also was keen to explore what role technology could play in helping her to enact her ideal curriculum in the classroom. The three approaches to classroom orchestration discussed here were all developed and evaluated in a longitudinal study within the classroom where the tools were co-designed and integrated into Amy's practices over 18 months of working together. Typically, digital orchestration technologies are not often designed and evaluated in 'in-the-wild' settings, with extrinsic constraints explored infrequently in the existing literature (Dillenbourg, Prieto and Olsen, 2018). The approach taken here allowed for

reflections on and evaluations of the role technology could play within Amy's performing arts pedagogy beyond simply evaluating the specifics of the tool itself.

6.4.1.   Socio-Digital Orchestration Tools as a Pedagogical Support

The use of orchestration tools in the classroom has been shown to support teachers' pedagogies, allowing them to enact complex, often constructivist, pedagogies in a classroom context (Dillenbourg, 2013). Classroom orchestration as a concept has been used to consider how teachers can enact pedagogies within an environment with many extrinsic constraints such as time, discipline, space, teacher energy and curriculum (Dillenbourg, Prieto and Olsen, 2018) and usually has a particular focus on three levels of interaction within the classroom— individual, group and whole classroom (Dillenbourg *et al.*, 2011b). The classroom has also been suggested as a 'user' of orchestration tools (Dillenbourg *et al.*, 2011b).

This thesis focuses on the teachers as users, with orchestration tools designed to support their pedagogies. The discussion here explores the ways digital technology was able to support the teacher to enact pedagogies congruent with their beliefs and values about the performing arts curriculum. The role of the orchestration tool, in this case, was to provide support in meeting some of the requirements of school-level policies, while ensuring the teacher was able to enact more complex, student-centred pedagogies. Overall, this study confirmed that the use of orchestration technologies supported Amy to enact her chosen pedagogies in the classroom, finding that for Amy, the biggest benefit of using the digital tool was that it gave her confidence in being able to enact pedagogies that otherwise would have felt like a loss of control in the classroom.

Many reasons led to this, partly in the design of the orchestration tool and partly in the pedagogy it aimed to support. Ultimately, we saw that the use of the digital tool provided Amy with enough confidence and support to take more of a risk pedagogically than she had previously and to return to teaching the BTEC unit in a way that was more congruent with the way she had initially aimed to teach it.

Before starting to work with us, Amy was quite critical of her practices and said she always had just got the students to put on a 'crappy lunchtime concert'. This was the Dampened Curriculum at work for Amy as she described her ideal pedagogical practices as student-centred, with a focus on verbal feedback and student engagement. The pressures of ensuring

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that students achieved their target grades, which ultimately was seen as a marker of the success of her department, had led to her offering a dampened version of her ideal curriculum model. The lunchtime concert Amy used to do as part of the course met the requirements of the BTEC enough to ensure that students were able to achieve and, in some cases, exceed their targets. These lunchtime concerts enabled her to remain in control of the course and of students' outcomes as much as possible, as the concert was a constrained and restrained way of ensuring that students met all the necessary criteria to pass their BTEC Unit 2. In this case, the use of technology as an orchestration tool supported the teacher to enact new ways of approaching the unit, ways that better mirrored their pedagogical sensibilities. What follows are considerations about the affordances of the digital orchestration tool that led to Amy feeling a sense of confidence and support when enacting her chosen curriculum in the classroom and how this worked within the complex policy environment to ameliorate some of the impacts of the dampened curriculum.

The Configuration of Existing Technology

When designing digital tools for classroom orchestration, Dillenbourgh and Jermann (2010) outlined several design considerations; flexibility, visibility, control, physicality, and minimalism. Previous studies conducted in the classroom have found that the most important factors for teachers appear to be awareness and flexibility (Kharrufa *et al.*, 2013b). In this case, the use of existing technology offered a level of flexibility for Amy that would not have been possible when using a custom-designed digital system. It has been shown previously that digital orchestration tools designed for specific purposes have often not been reused in the classroom as the teachers did not see how the tool could be repurposed for other activities (Lachand *et al.*, 2018). In this case, the use of an existing tool and the ability for Amy to reconfigure it herself meant that she has continued to use it beyond the scope of the project, redesigning the tool to support her ongoing pedagogic practices. In this case, the use of existing technology allowed us to freely experiment with the ways we could configure and augment the technology for use within the classroom, which has been explored in other contexts (Lambton-Howard *et al.*, 2020). Using an existing technology meant that changes could be made easily by the teacher either at the end of a lesson or sometimes in the middle of a lesson. Basecamp also allowed a wide variety of integration with other existing digital applications such as Office for word processing or Canva for design tasks. This meant that Amy had the freedom to adjust and extend the orchestration of the project beyond how she had

imagined at the start of the project, responding in real-time and adjusting the tool to suit her pedagogy. What the existing technology allowed specifically was the ability to make the necessary changes to the state of the system rather than having to rely on another third party, either a researcher or an IT technician. Within Basecamp, reconfigurations were easily adjustable so that the teacher guided the tasks within the project. The ability to make these changes quickly and easily ensured that Amy remained feeling in control over both the pedagogy and the use of technology within the classroom. Beyond simply affording flexibility in the classroom, though, the use of existing technology offered other affordances that meant Amy saw the potential of integrating it into her ongoing practices.

Industry Standard

The configuration and use of existing technology in the classroom have previously been criticised, with concerns about the suitability of technology designed initially for use in industry (Zhao, 2003). In this study, however, the fact the digital orchestration tool we used was a repurposing of an existing technology offered specific affordances that Amy felt she would not have had if it had been specifically designed for the classroom. Amy liked that the tool was 'industry standard', something we also saw echoed by the teachers in the initial stage of this thesis (see Chapter 4, for a detailed discussion of this). For many performing arts teachers, any digital technology they included in their practices needed to be industry standard to offer students experiences representative of the professional world. In this case, Amy specifically felt that this link to industry offered it 'kudos' to the students, encouraging them to engage with the project and use the digital tool. For performing arts teachers, at least, while there remain continued concerns about the complexity of some industry-standard technologies, their desire to ensure students have experiences representative of those they would encounter in the industry remains a focus. Simply using an existing digital tool to orchestrate the project offered Amy the ability to make those links in the classroom, offering her a way of ameliorating the Dampened Curriculum she had initially demonstrated.

Familiarity

Familiarity has long been discussed as an important principle for the design of usable systems (Dix, 2007). Although a known usability principle, it has not been discussed regularly in relation to educational technology, except in a few cases where specific usability tests have been carried out (Masemola and De Villiers, 2006; de Villiers, 2007; Kemp, Thompson and Johnson,

2008). For Amy, using an existing digital technology meant that she was more confident in introducing it into her practice than something that had less familiarity. For her, the familiarity of the system and its interactions meant that it was more easily integrated into her classroom, with little time spent explaining to students how it worked. Students have been referred to as 'digital natives' regularly in the literature, with many calling for the integration of technology as a way to meet them in their world (Prensky, 2001). In this case, Amy was clear that she did not feel they were digital natives, pointing out that although *'these kids are like the tech Generation, but Christ, they forget the password every two lessons [and] they don't know how to send an attachment'*. The concern that students are not as innately capable of utilising digital technology as might have first been thought when coining the phrase digital natives is something that is supported by more recent literature, suggesting that the notion of the digital native is not as accurate as first thought (Bennett, Maton and Kervin, 2008; Brown and Czerniewicz, 2010; Helsper and Eynon, 2010). The use of existing technology, then, offered students enough familiarity to use the digital tool as many of its functionalities mirrored that of other digital tools they had used previously. Given Amy's lack of confidence when using digital technology, not having to explain to students how it worked meant that she felt better able to use it to support her practice.

Visibility

Orchestration as a field has focused on ways of making the invisible visible (Balaam, 2013) as a way of supporting pedagogies, and where tools have been evaluated in the classroom, it has been found that visibility is one of the most important design principles for digital orchestration tools (Kharrufa *et al.*, 2013b). In this study, we saw that although visibility was considered valuable in certain contexts, for Amy, the question of visibility was much more nuanced than simply making the invisible visible. Although the visibility of students' work and interactions was valuable when monitoring students' progress throughout the project, this was tempered by concerns about how open and visible this work was to other students. To complete group tasks for example, students were able to see the portfolio work of the other students in their specialist group and it was this level of visibility that created some tension for Amy.

Visibility is often discussed within CSCL scripting, both in terms of the information flow (Vasiliou, Ioannou and Zaphiris, 2014) as well as the visibility of tasks for students when guiding and facilitating collaboration (Lachand *et al.*, 2018). When considered from Amy's

perspective, however, particularly in cases where the assessment is for examination purposes, the perspective on visibility shifts, moving away from considerations of information flow to aid collaboration and towards practical and material considerations of ways that the system can support them to make individualised assessment decisions confidently. It was clear in this study that while the visibility of the process throughout was incredibly valuable within lessons, with Amy using this to draw attention to students who had not completed specific pieces of work when it came to making individualised assessment decisions, it complicated the process, rather than support it.

Most assessments involving collaborative learning assess the group as a whole and assign the same or similar grade to each student who is part of the group (Gress *et al.*, 2010). In this case, where the project was leading to assessment for formal examinations, the teacher needed to be able to assign completely individualised grades that were not dependent solely on the group that they had been working in. It was clear that to ensure the digital orchestration tool supported her in these assessment decisions, the question of visibility became understanding the balance of what to make visible and what to keep invisible. In scenarios where some learning tasks are collaborative, but the assessments need to be individually marked, there are clearly nuanced decisions to be made in the configuration of the tool to support the balance of visibility. This balance needs to enable students to collaborate effectively while ensuring that teachers maintain confidence in their assessments of students individually. In this case, we saw that rather than altering the configuration of the technology to try and find a point of shared visibility, Amy intends to introduce new classroom social structures and expectations with students surrounding the use of the orchestration technology to foster trust within the cohort. In this case, it was clear that Amy did not see the solution coming from ensuring that the technology was configured differently, instead seeking to create and reinforce classroom expectations. The challenge for configuring orchestration systems then becomes understanding how best to configure a system so that the visibility of students' work within the group context is balanced with supporting a teacher in feeling confident about setting boundaries and introducing new ways of working and learning.

Unintrusive

Socio-digital approaches to classroom orchestration have been shown to support constructivist pedagogies while being suited to the reality of the classroom (*Kreitmayer et al.*,

2013). The socio-digital approach was seen as vitally important to maintain by Amy, who, even when discussing concerns about aspects of the digital tool (see the discussion around visibility below), offered mitigations that involved changing the way that her classroom environment worked rather than tighter controls implemented within the digital technology.

While using the orchestration tool with Amy, it was clear that she valued what Dillenbourgh refers to as 'modest computing' (Dillenbourg *et al.*, 2011b), valuing the ability of both her and students to work independently of the technology if they wished. Amy was clear, for example, that the ability for some students to work on paper and later photograph and upload this work was one aspect of the technology that was important to keep. The ability for students to work either through the technology or independently of it meant that students remained present in the classroom and offered a sense of embodied collaboration. This also ensured that it stayed away from some of the concerns of networked individualism (Castells, 2013) displayed by many performing arts teachers when asked about their uses of technology within the classroom (see Chapter 5, section 5.2.3 for a detailed discussion of this). In Chapter 5, it was discussed that teachers often positioned music-making and technology at opposite ends of a spectrum, suggesting they always designed curricula with a level of caution, ensuring that they did not include too much technology, often seeing it as detrimental to practical music-making. In this case, the ability to work both online and offline meant these delineations were less problematic.

Technology use in the performing arts classroom has been categorised into three uses; supplement, structure or infrastructure on a continuum where infrastructure sees digital technology irrevocably woven into pedagogy and supplement are technologies that do not seek to fundamentally change the mode of teaching and learning (Wake, 2018). Many calls to embed technology within the classroom see this continuum as one which mirrors conceptualisations of the value of using digital technology, seeing infrastructure as the ideal way to embed technology (Wake, 2018). In this case, it was clear that Amy saw digital technology's value as something between supplement and structure, rejecting the idea of digital technology as infrastructure believing that to see her pedagogies mediated through technology would be to further dampen the curriculum. For Amy, the value in digital technology lies in its ability to scaffold a supportive environment around which to structure a curriculum and pedagogy that fit her values.

Similar discussions have been seen in educational technology literature more broadly when considering when technology is successfully embedded in teachers' practices. It has been suggested that one factor that plays a significant part in this success is getting the balance right between ensuring the role of the technology as a learning tool is highly visible and making sure its role as a mediator of subject knowledge renders it invisible (Selwyn, 1999). It was clear that this balance was key for Amy, in this case, to ensure that technology remained a supportive pedagogical tool that could be drawn on as and when needed rather than one that required all pedagogical interactions to be digitally mediated. This balance appeared to be particularly important within performing arts classrooms where (as we saw in Chapter 4) face-to-face verbal communication and feedback are considered invaluable modes of communication. Interestingly, maintaining this balance became something that was scaffolded within the social roles in the classroom rather than something the design of the digital tool could offer specifically, as we saw in Amy's proposed approaches to reconfiguring the socio-digital environment in response to her concerns about the visibility of students' work.

6.4.2. *Learning Analytics as an Orchestration Tool*

Learning analytics as a field have discussed for decades that system design in isolation does not ensure successful uptake (Ertmer, 1999; Donnelly, McGarr and O'Reilly, 2011), with some suggesting that 'analytics exist as part of a sociotechnical system where human decision-making and consequent actions are as much a part of any successful analytics solution as the technical components' (Van Harmelen and Workman, 2012). Although learning analytics has begun to consider sociotechnical approaches to the design and evaluation of learning analytics tools, there remains a lack of understanding of teachers' perspectives on the use of learning analytics tools in orchestrating classrooms (Martínez-Maldonado, 2019). This is despite the teacher being seen as key in models of classroom orchestration (Dillenbourg, 2013). This work has a specific focus on understanding performing arts teachers' uses of learning analytics tools to orchestrate the classroom, a previously under-researched context within learning analytics.

Learning analytics tools have been considered one possible digital tool to support classroom orchestration (Verbert et al., 2013; Rodríguez-Triana et al., 2014; Dillenbourg, 2015; Martínez-Maldonado, 2016; Prieto et al., 2018), with Rodríguez-Triana et al. (Rodríguez-Triana *et al.*, 2018) suggesting it offers a potential way of supporting the teacher in monitoring complex

pedagogies, particularly those that involve a level of collaboration. The potential created by learning analytics tools to monitor students has also been suggested as one way teachers can provide ongoing support to students throughout group tasks (Van Leeuwen *et al.*, 2014).

In this case, it was seen that trace data from a digital orchestration tool could be used to provide monitoring for the teacher throughout the project. Martínez-Maldonado et al. (Martínez-Maldonado, 2019) identified three ways in which learning analytics had used data to support orchestration:

1. To monitor the state or progress of particular groups,
2. To represent the state of the workflow (mainly the time remaining in the lesson plan),
3. To make visible the presence of mistakes or misconceptions in learners' artefacts.

Here, the design and use of the tool concentrated on the first form of support, using trace data from the orchestration system to monitor the state of groups and individuals throughout the project. The design of the learning analytics tool was successful in as much as the trace data taken from the digital tool and displayed to the teacher aligned with their independent assessments of student progress throughout the project. Despite the alignment with her practices, however, the teacher in this study was clear that she would not use the resulting tool, primarily as it did not align with her pedagogical practices, instead prompting her to reflect that its use would in fact dampen her practices further. The discussion below explores some of the reasons for the rejection of the tool despite a co-design process, something that has been suggested as a way of ensuring the adoption of learning analytics in the past (Dollinger and Lodge, 2018).

Human-centred Design and Trust

There has been a recent turn towards human-centred methods in the design and evaluation of learning analytics tools in an effort to work with teachers to understand their attitudes and needs (Buckingham Shum, Ferguson and Martínez-Maldonado, 2019; Dimitriadis, Martínez-Maldonado and Wiley, 2021). Although engaging teachers has become more common, most of this work has focused on involving teachers as stakeholders in the design process (Martínez-Maldonado et al., 2015; Rodríguez-Triana et al., 2018; Alvarez, Martínez-Maldonado and Shum, 2020), rather than understanding their experiences of using these tools once designed. Much of this work has focused primarily on the accuracy of the tool to evidence or make visible

aspects of student learning. As this study demonstrates, even where the data from the learning analytics tool supported the teacher's own assessment decisions, the tool was still summarily rejected as not being useful or congruent with the teacher's pedagogical practices. Trust in mediated interactions has long been a concern of HCI researchers (Riegelsberger, 2005), with a renewed focus given the move towards automated systems, including new and novel technologies such as artificial intelligence and machine learning (Toreini *et al.*, 2020). Understanding the intersection of trust and educational technologies becomes even more important as we are beginning to see the rise in AI in educational technologies (Williamson, 2017b) and increased accountability measures in the secondary classroom (Williamson, 2019). Concerns over the 'trustworthiness' of the learning analytics tool designed in this study were one significant factor in its rejection by the teacher. This lack of trust was only apparent after the initial design process when the teacher began exploring actual classroom data. The initial design decisions and discussions arising from the co-design process appeared to be driven primarily by the desire to improve the workload and an implicit understanding that the education system generally would rather have 'verifiable' data for student assessment.

The resulting lack of trust appeared to stem from a tension created by a mistrust of quantitative data in her teaching practice. A lack of trust, in this case, seemed to stem from a fundamental mismatch in the teacher's own understanding of what constitutes valid assessment and the kinds of assessment data that the system could provide. While previous research has demonstrated that using data to build up from clicks to constructs has been successful (Knight and Shum, 2017), in this case, it appeared that even when we were able to demonstrate that data from the system supported the teacher's own assessment decisions, the incongruence in their epistemic beliefs and the quantitative nature of the data gathered in the learning analytics system meant they were clear that they would not use the resulting system.

Where there have been discussions about teachers' attitudes towards data within the field, much of this literature begins from the assumption that teachers have poor data literacy and that many of the concerns teachers raise about learning analytics systems are a result of misinterpretation (Bienkowski, Feng and Means, 2012). As a result, there have been multiple calls for increased teacher training around data and its uses in the classroom (Persico and Pozzi, 2015), particularly given the concerns raised that these misinterpretations leave data vulnerable to bias (Slade and Prinsloo, 2013). In this study, it was clear that Amy was very

capable of interpreting data in the classroom, something that teachers do regularly, with data analysis forming a large part of day-to-day school practices for many teachers (Newton, 2007). Rather than misunderstanding or misinterpreting the data, the concerns for Amy centred on epistemological issues about what it means to use data in the performing arts classroom and the ongoing tension about the use of quantifiable data to monitor and assess progress. Amy was adamant that quantifiable data had no place in her pedagogy, particularly her assessment practices, and that to rely on it was to dampen her practices further, removing her ability to offer specific and relevant feedback.

Learning Analytics and Epistemic Beliefs

There have been prior discussions of epistemology in learning analytics, with Knight *et al.* (2013) suggesting there is a triadic relationship between assessment, learning and epistemology in the development of learning analytics. We certainly see evidence that this is the case, with Amy's concerns about the use of learning analytics centring around what knowledge is and how it is measured in the performing arts. Knight et al. (2013) specifically depict it as a triangle to highlight numerous possible tensions in this relationship between epistemology, assessment and pedagogy. In this study, it was clear that while all three aspects were concerns for Amy, the failure to see any congruence between her specific disciplinary epistemology and the perceived epistemology of learning analytics, given their focus on quantifiable data practices, was the biggest concern for her.

It was discussed in Chapter 4 that performing arts teachers see their pedagogies as unique, particularly in the way that they conceptualise knowledge and assessment. There have been recent calls to ensure that learning analytics are aligned with teachers' pedagogies (Gasevic, Dawson and Siemens, 2015; Tsai and Gašević, 2017a), but this remains an 'open problem' (Michos *et al.*, 2020b). It has also been suggested that it is 'imperative' for learning analytics research to account for the heterogeneous ways technology is adopted in course-specific contexts (Gasevic et al., 2016). Rather than a course-specific context, the findings from this study would suggest that disciplinary identity plays a large part in teachers' attitudes towards learning analytics. In this case, despite Amy asking for a way to use the trace data from the digital orchestration system, the data-driven nature of learning analytics presented significant epistemological barriers.

While many learning analytics tools have been used to support classroom orchestration, Wise et al. (Wise, Sarmiento and Boothe Jr., 2021) recently suggested that there still needs to be a greater understanding within the field of how these data traces can be mapped to higher order constructs (such as collaboration or creativity). In the first part of the thesis, it was clear that these higher order constructs play a large part in the assessment decisions of performing arts teachers (see a detailed discussion in section 4.2.4). Amy echoed this disciplinary understanding of assessment, expressing serious reservations that quantifiable data traces of a behavioural nature would be able to support her in either monitoring accurately or providing feedback to students in the performing arts classroom. Although we demonstrated that a learning analytics tool could, and did, align with her qualitative assessments of her class, she could not reconcile the use of quantified behavioural data with her own beliefs and values about the ways she used assessment in the classroom.

While we saw that Amy was fundamentally opposed to using quantifiable data in her practices, something that is worthy of further exploration are her concerns as to whether the data could be used to accurately inform her about the progress of students. There was a sense in Amy that the nature of learning analytics and its reliance on quantified data practices, something that she was not familiar with, was a barrier to using any form of learning analytics tool. This is beginning to be discussed in the field, with more recent calls for researchers to move away from asking for enhanced data literacy in teachers and towards explainable learning analytics (Dimitriadis, Martínez-Maldonado and Wiley, 2021). This push towards explainable learning analytics may or may not offer a way to allay concerns from teachers in disciplines such as the performing arts, where epistemological tensions are ever-present regarding the nature of assessment and data and the applicability of quantifiable data practices. This seems particularly pertinent given that much of the focus of learning analytics, when used as an orchestration tool, has been on the potential to support teachers to make 'well-informed decisions' by enhancing awareness and visibility within the classroom ecosystem (Tchounikine, 2019). While the focus of explainable systems is often understanding ways of educating users, a move towards explainable learning analytics could instead offer a potential way to see the focus move away from discussing ways to enhance teachers' skills to embed analytics. Instead, it could offer a way of encouraging researchers to explore specific context-based applications to explain the nature of the tool in a given context. In encouraging researchers to understand the context better and consider ways of explaining the tools they

build, we open up the possibility of more discipline-specific learning analytics applications that could support teachers' chosen practices.

6.4.3.   Tangible Lighting Proxies and the Role of the Broker

Classroom orchestration and its relationship with digital technology have been conceptualised in two main ways: the orchestration of technology use within the classroom and the creation of digital tools to aid teachers' classroom orchestration (Song, 2021). The design and use of the tangible lighting proxies, together with the broker, can be conceptualised as both the orchestration of teaching stage lighting technologies in the classroom as well as the broker as a digital tool for supporting the orchestration. This section of the discussion focuses primarily on the role of the broker as a digital orchestration tool that aims to support the teaching of stage lighting within the secondary performing arts curriculum. Although arguably this could be observed as the orchestration of technology in the classroom, the insights drawn out here are those relating to the role of a novel digital technology to support the teaching of stage lighting and, as such, focus on the role of the broker as a digital orchestration tool.

Technical stage lighting skills are not often taught in the performing arts classroom (Reid, 1998). This is often for various reasons, although access to and risk of using large pieces of stage lighting equipment was raised as a concern by many of the teachers in the first stage of this thesis and is discussed in detail in chapter 5. The design and use of the 'broker' and tangible lighting proxies enabled the teacher in this study to include technical stage lighting as part of her curriculum, which was not available before. Before using the proxies, Amy did not teach stage lighting as standard, something she had in common with many of the teachers interviewed in the earlier stages of the thesis. Amy felt unable to offer this due to a lack of access to safe equipment and her confidence in teaching technical stage lighting skills.

Orchestration has been used previously in vocational educational settings, with a particular focus on exploring the role of scripts to support knowledge construction in practice-based activities (Hämäläinen, 2008; Hämäläinen and Oksanen, 2011). For example, it has been used successfully to support the learning of practice-based skills in the classroom (Jermann *et al.*, 2009), and in the case of the TinkerTable, supporting warehouse apprentices' use of tangible simulations for practising the applications of theoretical knowledge to 'authentic problem situations' (Zufferey *et al.*, 2009).

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The use of the broker as an orchestration tool, in this case, was used with many similar aims as the Tinker Table, ultimately enabling Amy to offer students a way of applying theoretical lighting concepts to practical and tangible explorations of industry-standard lighting software. It was clear in chapter 5 that for many teachers, the use of technology meant having to move to a 'specialist' room, be it a computer suite or a recording studio space. This meant that in many cases, the use of digital technology in the classroom had been reserved for special occasions or one-off schemes of work. Having proxies that were small enough to fit onto a tabletop meant that students were able to use them in the classroom. In this case, being able to store and use the lighting proxies in the classroom meant that students could work with them as a matter of course in lessons, getting the equipment out much as they would get out other music equipment such as acoustic instruments. Moving digital technology back into the classroom meant it was seen as much more commonplace, with it being far easier to integrate into curricula rather than having to make specific plans and check the availability of rooms elsewhere in the school. Bringing the teaching of technical stage lighting back into the classroom presented the opportunity to see the teaching of these skills as something that could be integrated into a mainstream curriculum rather than as something reserved for those students who cannot access the traditional aspects of the curriculum.

Orchestration has been used successfully to support teaching discipline-specific skills, particularly where the authentic environment presents a safety risk (Hämäläinen, 2008). By using the broker as a digital orchestration tool, we saw that the model lights could be used in the classroom, negating many of the logistical health and safety issues many teachers were concerned about. Although many of these mitigations resulted from the size of the proxies, without the broker, the tangible proxies are just low-fidelity models of stage lighting equipment. Although in isolation, they support some elements of practice-based learning (such as visuospatial configuration), it is the broker that ultimately was the key to moving the teaching of stage lighting into the classroom. The following sections of this discussion examine the role of the broker specifically as a new form of digital orchestration that enables teaching practice-based skills in the classroom.

The Visibility Paradox

Visibility is one of the key aspects of classroom orchestration and has been shown in evaluations with teachers to be one of their most valued affordances of digital orchestration tools (Kharrufa *et al.,* 2013). In this case, Amy was clear that by bringing the lighting rig into the classroom and onto the tabletop, she had much more visibility of what students were doing. Using the lighting proxies in the classroom allowed her to monitor progress and skills more easily, partly as the students were now physically in the same room and partly as the reduction in size to the tabletop meant that Amy could monitor it in much the same way as she would any other activity in the classroom. The opportunity to bring all the equipment together onto a desk meant that it was much easier to orchestrate the teaching. Where tangibles have been designed to support risk-laden practical skills in the classroom previously, they used distributed technologies that, while usable by students, were not easily orchestrated by the teacher (Cuendet and Dillenbourg, 2013). The broker here allowed for previously distributed technologies to be brought together and set up in one smaller area, in this case the classroom. Where lighting desks are usually physically separate from the main lighting array, using the broker meant the lighting proxies and desk were in proximity enabling better visibility of students' manipulations of the lighting desk together with the lighting output from the proxies. In this way, the use of the broker offered a much higher level of visibility over teaching in a traditional set up and gave rise to more opportunities for detailed and 'in the moment' verbal feedback, something seen by performing arts teachers as central to their pedagogies and discussed in detail in Chapter 4. Being able to move the teaching of stage lighting into the classroom physically meant that it was treated more like teaching any other aspect of the curriculum rather than being seen as an added extra.

While visibility has primarily focused on ways of making the invisible visible (Balaam, 2013), and it was clear that the proxies supported the visibility of progress in the classroom, Amy also saw the size of the proxies and their use in the classroom as something that minimised the visibility of mistakes. We saw in section 4.2.1 that one of the specific pedagogies employed by many teachers in the earlier study was encouraging failure and mistakes. This was observed as a central aspect of performing arts pedagogy and supported, particularly due to taking creative risks. In this case, the use of the broker supported and encouraged both risk-taking and opportunities for mistake-making. The teacher felt that the scale of the lights was such that as they were contained within a smaller scale model, this also meant that mistakes were contained. Containing mistakes in this way meant that they were less visible to the rest of the

class, and the teachers felt that students were, therefore, willing to take risks and explore creative options within lighting design. This ultimately meant that Amy felt she was more likely to continue to offer stage lighting design in their curriculum going forward, as by using the model lights, students were able to and more willing to explore a wider range of creative design options than they would have been able to be using the full-sized equipment. This ability to support rapid iteration and experimentation meant that students were given opportunities to develop a much more developed creative skillset when it came to stage lighting than might otherwise have been possible if they had only used the school's lighting rig.

Flexible Reconfiguration

This support for flexibility was considered central to the way the broker and proxies supported Amy's pedagogy, which accords with previous literature suggesting flexibility is a key design consideration in classroom orchestration (Kharrufa *et al.,* 2013). This was clearly valued by Amy in both the digital orchestration tool discussed in section 6.2.1 above and the flexibility inherent in allowing students to experiment and take risks. What was also clear was that the broker offered significant flexibility pedagogically in the way it supported the teaching of stage lighting in the classroom. Previous studies that have considered the use of digital technologies to support vocational or practice-based skills in the classroom have designed models or simulations that replace the real-world object (Jermann et al., 2009; Hamalainen and Oksanen, 2012). Rather than simply replace the whole lighting rig, the broker, in this case, allowed the flexible reconfiguration of real lamps, proxies and lighting desks to suit the teacher and their pedagogies. Research that develops learning environments often aims to replace the teacher rather than see them positioned at the centre (Kollar *et al.*, 2011). In this case, it was clear that the flexibility supported by the broker was something valued by Amy as it allowed her to remain able to design her curriculum and use the proxies and/or stage lights as and when it supported her pedagogy.

Allowing for flexibility also made it much easier for the teacher to scaffold their curriculum to ensure that students were able to transfer skills from the proxies to real-world scenarios with stage lighting. This transfer of skills to real-world scenarios, often referred to as 'transference' (Greeno, 1989), is something that has previously been challenging (Cramer and Antle, 2015; Jenkins and Bogost, 2015), although we know that supporting bi-directional transition has

been more successful in some contexts (Matsuzawa *et al.*, 2015). Using the broker to enable the model and real lights to be switched out quickly and easily meant that students could understand the relationship between the proxy and the real-world lamp by switching between the two. This level of flexibility offered Amy confidence in using the proxies to teach as she could see students had grasped how to transfer the skills gained in the classroom over to the actual lighting rig.

Alongside allowing for flexibility in the delivery of stage lighting curricula, the broker opens up new opportunities for developing innovative pedagogies within the classroom. In addition to providing creative opportunities through risk reduction, the broker enabled multiple students to interact simultaneously (something not possible using traditional lighting control equipment). The broker allows multiple students to interact with a single representation of the venue but using a mix of different controllers, models, and real equipment simultaneously. This ability to support multiple students to control the lighting rig means that it could more easily offer the potential to include whole class teaching of stage lighting, seeing it move from only being offered only to specific groups of students towards something taught as part of a long-term curriculum plan in the performing arts.

6.4.4.   *Classroom Orchestration, Teachers' Existing Practices and the Role of Policy*

Most of the literature examining the link between teachers' practices and technology use in the classroom is done from the perspective of understanding how best to overcome the challenges of integrating technology. Many focus on models such as TPACK (Koehler and Mishra, 2014) or the TAM (Davis, 1989a), aiming to understand how to break down barriers to technology integration and adoption with the assumption that the use of technology in the classroom is inherently a good thing. Both TPACK and TAM models are commonly used as frameworks for the consideration of integrating technology in the classroom, with the TPACK model a way of visualising the reconstruction of classroom dynamics when integrating technology (Herring, Koehler and Mishra, 2016), while TAM is often used to understand teachers' likelihood of integrating technology (Dele-Ajayi *et al.*, 2017).

This thesis takes a different approach to the use of technology in the classroom, one which aligns with literature in STS, such as Hamilton and Friesen (Hamilton and Friesen, 2013), and explores the potential role of digital technology in supporting teachers enact their beliefs in the classroom. Hamilton and Friesen urge the educational technology research community to

reconsider their claims that educational technology necessitates a change in traditional practices but rather should find what is worthwhile within those practices and seek to support them (Hamilton and Friesen, 2013). It is this approach that is taken in this thesis, aiming to understand what aspects of their practice teachers are unable to enact in the classroom and leveraging the affordances of digital technology to help support the enactment of these practices. Orchestration as an approach considers the use of technology as a way to support teachers' enactment of complex curricula design in the classroom (Dillenbourg, 2013), one which focuses on the complexity of using technology in the classroom, with a particular focus on supporting the role of the teacher (Roschelle, Dimitriadis and Hoppe, 2013).

This study explored orchestration in three ways; the use of a digital tool for orchestrating a student-centred curriculum, the orchestration of the use of theatre lighting technologies in the classroom, and the use of learning analytics as an orchestration tool. These explorations of orchestration resulted in a mixture of responses from the teacher, with the digital orchestration tool embedded into her long-term practice while the learning analytics was outright rejected. The previous section described many of the teachers' reasons for these reactions to the different forms of orchestration. The use of these orchestration tools was within the complex policy and practice context outlined in Chapter 4, where I described a situation where teachers found their practices and beliefs about the performing arts curriculum entangled with the school-level enactment of wider educational policy and resulted in what I refer to as a Dampened Curriculum. What became clear from these explorations was that orchestration offered the potential to support teachers' enactment of chosen pedagogies within the classroom, where it supported both their practices and beliefs and the wider policy context.

Classroom Orchestration to Facilitate Existing Practices

We know that there is a relationship between pedagogical beliefs and the use of educational technology with technology and pedagogical beliefs tightly interwoven in a complex relationship (Tondeur *et al.*, 2017). This study demonstrated that these complex relationships between pedagogical beliefs and the use of technology were present. It was clear that the teacher's beliefs about what pedagogical practice was suitable in the performing arts were the primary reason she did not want to use the learning analytics system.

Tondeur et al.'s (2017) systematic review of the literature describes a bi-directional relationship between pedagogical beliefs and the use of technology, finding that technology has the potential to change teachers' pedagogical beliefs', while also finding that teachers' pedagogical beliefs can act as a barrier to the integration of technology in the classroom. While it was clear that this teacher's pedagogical beliefs and the use of technology were intertwined, they did not find the same bi-directional relationship; rather, it was clear that the use of technology in a way that was incongruent with her practices and beliefs about the performing arts curriculum was rejected and would not be used. The earlier study (Tondeur *et al.*, 2017) found examples of this bi-directional relationship in distinct examples of technology use in the classroom rather than comparative studies with the same teacher. Such comparative studies are lacking in the educational technology literature (Prieto *et al.*, 2014), and to date, there are seemingly no examples in the classroom orchestration literature of exploring several tools with the same teacher. The conceptualisation of the bi-directional relationship is potentially complicated by a range of other potential factors, such as the specific teacher and context. This study contributes to the literature on orchestration by evaluating several orchestration tools in the classroom with the same teacher.

The teacher in this study did not demonstrate a willingness to alter her pedagogical beliefs using technology but showed a deeply held set of practices and beliefs about the performing arts curriculum and the ways this should be enacted within the classroom. Where technology was well received by the teacher, it aligned with existing practices and beliefs about the curriculum and her pedagogy. In the case of the digital orchestration tool, this supported a curriculum that was student-centred and allowed students to take the lead in organising their activities throughout the project. This was something the teacher had been clear was an aim of hers, that her classroom was always student-focused. Where learning analytics was rejected, it was clear that the use of data-driven practices in education was against her epistemic beliefs and that she could not imagine a time when she would integrate these into her practices. This is not entirely surprising given the strength of disciplinary identity demonstrated by teachers in the earlier study (discussed in section 4.2.3). We know that performing arts teachers' beliefs and practices are strongly impacted by their identity and early experiences (D J Hargreaves *et al.*, 2003), which ultimately leads to a strong sense of disciplinary identity. Where technology did not match this teacher's disciplinary beliefs, there was a concern that it would further dampen her practices within the performing arts

classroom with concerns about the potential impact of producing such quantifiable data and who would later have access to it to hold her accountable. The teacher highlighted that as head of department, she was the most senior member of staff with expertise in the performing arts at her school, and so to have data gathered by the learning analytics tool that could be interpreted by someone else was to remove and ignore her expertise. In her view, the removal of her expertise in the assessment process was to constrain her practices as it removed the qualitative understanding of what constituted demonstrations of knowledge and progress in the performing arts classroom. We saw in section 4.2.4 that teachers in the first study viewed assessment as holistic, including attributes such as confidence used in teachers' assessment decisions.

The relationship and interplay between teachers' pedagogical beliefs and their use of technology has been described by Hamilton and Friesen (2013) as a scale of technology from 'essentialist' at one end to 'instrumentalist' at the other, where essentialist technology is that which embodies particular pedagogies or educational benefits while instrumentalist technology is suggested as a neutral way of supporting the goals of the users. This idea that technology is 'essentialist' was recognised by the teacher in this study (although not in those words), and the use of learning analytics was rejected as a technology that did not embody the characteristics of a performing arts education as it was data-driven, using quantitative data about the students' progress, something that the teacher actively avoided in her day-to-day practice. This aligns with existing research in other contexts that found that teachers in certain disciplines appear less disposed to the idea of using technology partly because they appear to see technology as 'cold, logical, unfeeling and linear' and so are viewed as only suitable for subject areas which value these traits (Turkle, 2011). It was clear that the teacher in this study felt that an orchestration tool that used quantifiable data was not something suitable for use in a subject that saw knowledge as something embodied, creative, and ultimately unquantifiable.

Classroom Orchestration and Policy

It is also known from literature on educational technology use more broadly that there is a wide range of contextual influences on teachers' use of educational technology, such as school culture and student population (Howard, Chan and Caputi, 2015; Tondeur *et al.*, 2017). It is also known that 'behavioural intention' does not always lead to 'actual' use when examined

in long-term observational studies (Selwyn and Grant, 2009; Selwyn, 2010). Most literature considers educational technology use in the classroom, but makes certain assumptions about the linear relationship between teachers' personal beliefs and their actions in the classroom (Jimoyiannis and Komis, 2007; Ertmer and Ottenbreit-Leftwich, 2010; Kim et al., 2013). There has been a recent turn in orchestration literature aiming to understand teachers' practices and beliefs about technology, particularly their values to design tools they would use (Olsen, Rummel and Aleven, 2021). Many of the orchestration tools designed as part of these studies are not done so in the classroom, focusing on exploring teachers' practices and beliefs and their intentions about using such tools in the classroom (Song, 2021).

What this work demonstrated was that there was not a linear relationship between teachers' personal beliefs and their later actions in the classroom. That in reality, their actions are highly mediated by the encompassing policy environment of both the school and the wider educational culture in England. For the teachers in this study, the school-level policy had what I describe as dampening effects on the teachers' enacted practices where teachers were making changes to their practices to better suit school policy environments, even where this had a detrimental impact on their practice and ultimately on the students' educational experiences. While the school-level policies had the most immediate and obvious impact on the teachers' practices, understanding the wider policy environment and the reasons for school-level policies was important in supporting the teacher in the subsequent study to enact her chosen pedagogies in the classroom.

Classrooms have been described as ecosystems in educational technology literature, often drawing on ecological conceptualisations of the complexities of classroom life. Literature has described classrooms variously as 'complex technological ecosystems' (Luckin, 2008) or simply 'complex ecosystems' (Song, 2021). Considerations of the curriculum as an ecological model have also been seen in educational literature as ways of conceptualising the various systems at play in creating and enacting a curriculum (Thijs and van den Akker, 2009; Priestley et al., 2021). Although classrooms and curricula have been described as and likened to ecosystems, little classroom orchestration literature considers the meso or school level of the ecosystem and the potential effects on the micro or classroom level, and even less considers the macro or society level policy. Where policy is discussed in other educational technology interventions, this is usually the impact of technology integration policies and the effect that

this has on the continued adoption of technology in school settings (Han, Byun and Shin, 2018).

Classroom orchestration originated as a way of conceptualising how to support teachers in enacting complex pedagogies in the classroom, and in their seminal paper on the subject, Dillenbourg, Prieto and Olsen (2018) suggest that there are several extrinsic constraints on the use of technology in the classroom—time, discipline, space and teacher energy—with a specific call for orchestration to consider these in the design and evaluation of orchestration models or technologies. Despite the rise of in-the-wild research within the educational technology community and the rise of interest in situated learning theories, extrinsic constraints have been underexplored in the learning sciences community (Dillenbourg, Prieto and Olsen, 2018). The teacher we worked with raised some of these specific constraints, notably space and discipline. It was clear that for her, orchestration tools needed to consider the classroom space and how she was able to maintain discipline within the classroom. For example, the design and use of the tangible lighting proxies considered specific aspects of space as a constraint, seeking to support moving the teaching of stage lighting back into the classroom space. Although this was initially one of the design considerations, it became clear that there were other factors in the design that were considered advantageous above and beyond simply the ability to teach in a given space (as discussed in section 6.3.3 above).

These extrinsic constraints have also been described as 'classroom logistics' in the literature (Nussbaum and Diaz, 2013) as a way of delineating discussions of orchestration from specific learning theories. The use of the term logistics in classroom orchestration literature, however, further focusses the scope of possible constraints back to the classroom level, where considerations remain entirely concentrated on the practicalities of managing a classroom situation. This thesis shows, however, that these extrinsic constraints or classroom logistics are only a partial story of life in the English secondary school. As we saw in Chapter 4, teachers' practices within the classroom are influenced and constrained by much more than simply the practical constraints they encounter in daily life. The reality of teachers' practices as enacted within a mediated policy context is not reported in relation to orchestration within the educational technology community. Where the complexity of classroom life is often likened to ecological models, classroom orchestration frameworks focus solely on the micro-level with some considerations that the teacher is bound by certain curriculum constraints for a given

lesson or term (Dillenbourg and Jermann, 2010). As was seen in the earlier discussions of the Dampened Curriculum with respect to performing arts teachers' curriculum constraints and the ways that this entangles their practices, curriculum constraints encompass far wider-reaching considerations of what is or should be considered extrinsic constraints in the context of orchestration frameworks.

6.5. Summary

This chapter considered an instance of a Dampened Curriculum as an example of one potential outcome of the causal mechanism as described in Chapter 4. This was explored through working with a teacher (Amy) who was student-centred in her espoused pedagogies and wanted to offer her students an understanding of the processes of the music industry. In reality, her practices were dampened as she designed her curriculum to ensure that students produced the required evidence to pass their BTEC and data to meet their targets. This resulted in a curriculum where Amy got students to plan a small lunchtime concert rather than a larger-scale event that would better match her espoused practices. The chapter went on to consider the role technology might play in supporting the teacher to enact their chosen pedagogies and ameliorate some of the dampened practices and pedagogies. It first described the design of three instances of classroom orchestration; the configuration of existing technology to support the orchestration of a complex, constructivist pedagogy, the design of a learning analytics tool as a form of digital orchestration, and finally the design and build of bespoke technology to orchestrate the teaching of technology in the classroom. The initial socio-digital orchestration tool and the proxy lights were both supportive of Amy's pedagogies enabling her to enact the pedagogies that aligned with her practices and beliefs. The learning analytics, however, while accurate in their ability to match her own assessments, showed the potential to further dampen her practices as they did not match her epistemic beliefs.

The discussion considered these findings in relation to existing classroom orchestration literature and suggested that rather than considering orchestration a way to enact new pedagogies in the classroom, orchestration offers a potential way to support teachers to enact their chosen disciplinary pedagogies in the classroom so as to ameliorate the potential effects of a complex policy environment. It then suggested that when designing tools for classroom orchestration the meso or school level and the macro or society level policy should be explicitly considered as should the resulting impacts on teachers' practices. It suggested that

designing simply for 'classroom logistics' is to risk missing many factors that have an effect on teachers' enacted practices. The design and evaluation of tools as discussed in this chapter are one example, however the lessons learned from this longitudinal and embedded research can offer interesting reflections for future work.

The next chapter offers concluding thoughts and addresses each of the initial research questions first outlined in Chapter 1.

Chapter 7.   Conclusion
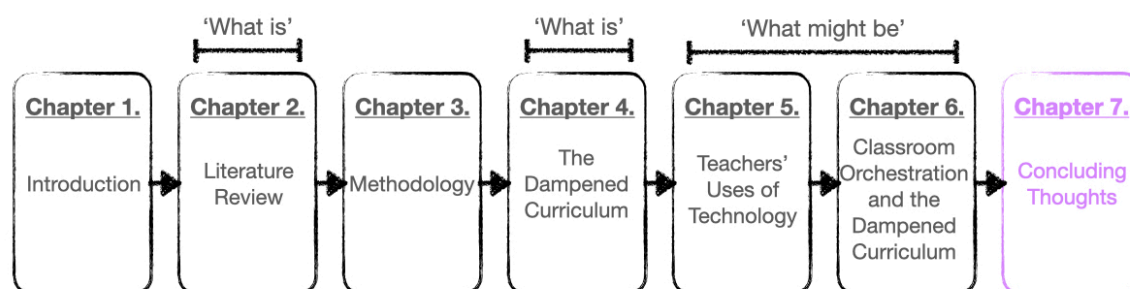
Figure 35*: Thesis structure (you are here)*

7.1. Overview and Contributions

This chapter offers concluding thoughts regarding the four research questions outlined in Chapter 1 before considering both limitations of the thesis and future work.

This thesis explored performing arts teachers' practices and beliefs about the current Performing Arts English Secondary Curriculum, how they are shaped by school level interpretations of educational policy, and finally, it examined the potential role of technology in facilitating teachers' visions of purpose. In considering both teachers' practices and beliefs and the role of technology, it sits at the intersection of two disciplines: Education and HCI. As such, it is influenced by and offers contributions to both fields. In Education, the focus and contribution are on pedagogy and curriculum studies, while in HCI, the research offers contributions to the educational technology field, particularly regarding implications for the design of orchestration technologies.

In relation to more particular domains of both disciplines, this thesis contributes to both the performing arts education and educational technology fields in three main ways:

First, it offers a state-of-the-art and in-depth understanding of performing arts teachers' practices and beliefs about the current English secondary performing arts curriculum, reporting on the analysis of in-depth interviews with 16 experienced performing arts teachers. The focus on performing arts teachers (both music and drama) more broadly is a novel contribution, as prior studies have tended to examine teachers' practices within either music (e.g., Thwaites and McPhail, 2018). While one more recent study has considered arts teachers more broadly (Wake, 2018), these are few and far between, and as such, this is an under-researched area in the educational literature on teachers' practices, particularly in respect of data gathered from experienced teachers, and one that the literature has suggested should

be a new focus (Spruce, Marie Stanley and Li, 2021). As such, it extends and offers new knowledge to the field.

Second, this thesis offers a detailed and critical understanding of the multilayered interactions that shape the English performing arts curriculum. Through taking a critical realist approach (Sayer, 2004) to the research, this thesis offers a tentative new potential causal mechanism (Danermark, 2002; Sayer, 2004) to explain the differences between teachers' described aims and enacted practices. The 'Dampened Curriculum' offers one possible explanation for the effects of current English educational policy on teachers' practices regarding the secondary performing arts curriculum. It offers a tentative new way of conceptualising the interactions between English educational school policy and teachers' practices and as such offers a potential framing within which considerations for the design of educational technologies can be developed to better reflect the realities of the English Secondary Performing Arts Classroom.

Third, it offers specific insights into the experiences of a teacher who used three different classroom orchestration tools (Dillenbourg and Jermann, 2010) to support her delivery of the performing arts curriculum. Studies that examine the use of multiple orchestration tools with one teacher are lacking (Song, 2021), and this offers one of the first known in-depth studies of three different orchestration tools in one context. The resulting findings and reflections on the co-design of these tools offer implications for the design of orchestration tools to facilitate teachers' visions of purpose in the curriculum.

The research presented in this thesis was guided by four research questions:

1. What are teachers' current practices and beliefs concerning the English Secondary Performing Arts Curriculum?
2. How do school-level interpretations of external policy shape the delivery of the English Secondary Performing Arts Curriculum?
3. How does technology shape the English Secondary Performing Arts Curriculum?
4. What is the potential role of technology in facilitating teachers' visions of purpose in the English Secondary Performing Arts Curriculum?

Each of these is addressed in turn in this chapter before considering the limitations of the reported research and possible future research directions.

7.1.1. RQ1: What Are Teachers' Current Practices and Beliefs Concerning the English Secondary Performing Arts Curriculum?

Teachers in this study overwhelmingly described the performing arts as a unique subject with its subculture (Ball and Lacey, 2019). This sense of identity was built through a sustained sense of subject loyalty (Bernstein, 1990), which many teachers built through their participation in extracurricular activities. For the majority of the teachers in this study, the sense of subculture they felt appeared to influence their beliefs about the curriculum (John, 2005), and the majority of teachers defined their practices in the ways they differed from other subjects.

The influence of their own experiences of performing arts education in a school setting was also seen, although it was frequently framed negatively, with many describing experiences they did not want to repeat for their students in formal education. They were often more positive about extracurricular experiences they had had, and these were often the practices they carried forward into their teaching. Drawing on these extracurricular experiences as positive experiences that influenced their practices seemed to strengthen the feeling of subject loyalty (Bernstein, 1990), as their early pedagogical experiences were drawn from practitioners rather than teachers in the classroom. This then appeared to reinforce their sense that the performing arts have specific disciplinary practices and subcultures (Ball and Lacey, 2019). This sense of a unique identity was further reinforced by the approach to English secondary performing arts curricula that centre around three delineated 'pillars', making, presenting, and responding in drama or performing, composing and listening in music (Swanwick, 1999; O'Toole and O'Mara, 2007).

This sense of difference led to the teachers in this study feeling that the performing arts were unique and often misunderstood in the way they were positioned in the English secondary curriculum, despite Ofsted's commitment to a 'broad and balanced' curriculum (Ofsted, 2019). Despite changes to inspection criteria and the new focus on curriculum, this feeling persists, demonstrating little change in the importance placed on the performing arts since previous research carried out over five years ago (Daubney and Mackrill, 2017). For these teachers, there was a specific sense of continued frustration that their subject was not considered academic. As such, many of the teachers discussed having to constantly market their subject to their colleagues, parents, and students. This was reinforced by concerns about their continued existence as part of the secondary curriculum, given falling entries at KS4, a

reduced number of hours within the curriculum (Department for Education, 2022), and their lack of a place in key policies (Johnes, 2017) that drive curriculum design at a school level such as Progress 8 and EBacc. When teachers described their beliefs about the secondary curriculum, it was clear that they felt their disciplinary differences affected all aspects of their curriculum design and enactment. This was particularly evident when considering it against the current Ofsted curriculum policy that considers three elements of the curriculum; what to teach (intent), how to teach it (implementation) and how to assess it (impact) (Ofsted, 2019). At each stage, the performing arts teachers in this study described differences in how they designed and implemented their curricula.

In their discussions of the intent or aims of their curriculum, the teachers in this study described wanting to create a process-based curricula model (Kelly, 2009), where the focus was on students understanding the process of musical and dramatic learning, not the outcome. The teachers in this study acknowledged complexities surrounding knowing within the arts and appeared to have moved away from considering measurable skills and seeing knowledge as a body of disciplinary 'truths' (Winch, 2013), instead seeking to develop developmental skills such as confidence. This partly stemmed from the focus on process and the desire to draw together both propositional and procedural knowledge (Bruner, 1996), demonstrating that for the teachers in this study they were aligned with Fautley (2012, p. 105), who suggested music education should be based on 'understanding not mere regurgitation'.

When enacting their designed curriculum, teachers were clear that performing arts had signature pedagogies (Shulman, 2005), often highly influenced by their own experiences of extracurricular performing arts education. They demonstrated several specific elements of their signature pedagogies, including the focus on a practical approach, aligning with previous calls in the literature (Hargreaves, 1986; Paynter, 2002) and more recent approaches such as Musical Futures (Green, 2001). Given their practical approach, many were highly critical of the use of written feedback in books, instead preferring to offer verbal feedback as it was highly specific and 'in the moment', demonstrating similarity of approach to that of conservatoires (Fletcher, Davidson and Krause, 2021) and US secondary settings (Warnet, 2020) despite the difference in context and English performing arts focus on the three 'pillars' (Swanwick, 1999; O'Toole and O'Mara, 2007). This demonstrated a cohesive and more persistent

conceptualisation of signature pedagogies, perhaps stemming from a collective sense of subject subculture across more than simply English secondary teachers.

Alongside practical approaches and verbal feedback, these teachers also reported multifaceted assessment practices, allowing them to assess both propositional and procedural knowledge, something Fautley (2018) suggests music teachers in particular, have a long history of doing. Their assessment practices regularly considered student competencies and dispositions such as confidence, engagement, and other similar soft skills, and teachers believed this was a key aspect of assessment in the performing arts. In this way, they aligned much more with those who have previously advocated for skill learning (Hallam, 2006) over those who suggest musical behaviours are central to musical development (Mills, 2005). The final aspect teachers in this study identified as a central aspect of their pedagogies is that mistakes were actively encouraged by the majority of teachers, who referred to performing arts industry practices where mistakes were also seen as part of the developmental process. Measurements of progress then were deemed complex and often not considered linear, following prior research such as Mills (2009). This idea that progress was not linear was partly due to their encouragement of mistake-making and partly due to the conceptualisation of the performing arts in three strands, with many teachers articulating a belief that students would often have a preferred strand and that it was rare for students to be equally skilled at or equally enjoy all three aspects.

7.1.2. RQ2: How Do School-level Interpretations of External Policy Shape the Delivery of the English Secondary Performing Arts Curriculum?

Using critical realism (Bhaskar, 2013), this thesis offers an understanding of how macro-level policy intentions were interpreted through meso-level policy guidance and micro-level curricular practices by drawing on Thijs and Van Den Akker's (2009) ecological model of curriculum development.

For the teachers in this study, their sense of subculture (Bernstein, 1990) and disciplinary difference was further reinforced by school-level policies that frequently conflicted with their understanding of what pedagogy and curricula should be in the performing arts. This tension meant that despite a clear link between beliefs and curriculum design (Schmidt, 2012), teachers were not able to simply enact their chosen curriculum based on their beliefs. There

was a sense of a curriculum in flux (Maw, 1993), as every teacher in this study had redesigned at least some aspects of their curriculum, primarily in response to macro-level policies introduced by Ofsted (2019).

This ongoing tension was created in part by being given a large amount of curricula freedom thanks to the brevity of the national curriculum for music (Department for Education, 2013) and the lack of one for drama, while finding conflicting constraints at a school (micro) level. The reality was that their enacted curricula were heavily influenced by school level policies and there was a lot less freedom than they had initially suggested. This tension created a sense of cruel optimism (Berlant, 2011; Moore and Clarke, 2016) for many teachers, who described that adhering to school policies had become an exercise in 'playing the game', which for the most part meant ensuring they had 'good' data, particularly their exam results and student numbers at KS4. This data was then used as a shield or, as Vinge (2014, p. 321) suggests as 'didactic strategies for self-defence' to ensure that they were able to exercise more freedom in the classroom, with many describing that they were left alone to develop curricula models that better suited their practices when they were able to generate the required data. To generate this data, however, meant many teachers made changes to their enacted practices, with many reporting that their practices were 'schooled' (Spruce, 2002) by having to adhere to school policies. This was particularly evident in continued tensions between the requirement to demonstrate powerful knowledge (Young, 2013) within their curricula and their desires to ensure the existence of practical and process-driven pedagogies.

This thesis then offers one potential causal mechanism that could explain the tensions and ultimately the effect on teachers' practices that saw teachers enact curriculum models much more reminiscent of objectives and content-based curricula (Kelly, 2009) rather than the process-based ones they initially described as their intended curriculum. It suggests that the system dynamics outlined in section 2.2.2 (performativity, educational effectiveness, research-informed education, datafication and high-stakes assessment) can be considered an assemblage (DeLanda, 2006) of structures that act within the current educational context. These structures are suggested to form a tentative causal mechanism, which when enacted at a school level, resulted in a dampened curriculum for many of the teachers in this study. This causal mechanism is one which this thesis suggests uses data as governance, sees knowledge as emancipatory, aims for self-improvement and has centralised (often hidden) control. Using data as governance saw the rise in the importance placed on the role of data, with it becoming

a 'signifier' (Hanson, 2002) for students' progress, among other measures, ultimately leading to increased instances of performativity (Ball, 2003), and a dampening of teachers' practices as they changed both pedagogy and curriculum to ensure that they were able to generate the required data. When knowledge is seen as emancipatory, it encourages a renewed focus on absolutist forms of knowledge drawn from considerations of powerful knowledge, which was demonstrated by the teachers in this study creating knowledge organisers (Miller, 2019; Perry *et al.*, 2021), which ultimately resulted in a greater focus on key terminology over process-based skills, even where this clashed with teachers' beliefs regarding preferred curricula and pedagogies. In aiming for self-improvement, there was an increased focus on pedagogies based on cognitive science learning models such as interleaving or dual coding (EEF, 2021). This focus led to many teachers having to choose whether to align their teaching with school policy or with their disciplinary beliefs, suggesting a reinforced sense of cruel optimism (Berlant, 2011; Moore and Clarke, 2016). Centralised (often hidden) control was exhibited through Progress 8 and EBacc measures (Bath et al., 2019) alongside the new approved qualifications list (Department for Education, 2020). This left many teachers facing reduced time on timetables or choosing qualifications that did not feel entirely suitable for their cohort of students. Although discussed in relation to the performing arts in this thesis, the Dampened Curriculum as a potential causal mechanism may be applicable beyond the performing arts, given the number of disciplines that also exhibit signature pedagogies (Shulman, 2005), something Hanley *et al.* (2018) suggest is exhibited by all secondary school subjects.

7.1.3.   RQ3: How does technology shape the English Secondary Performing Arts Curriculum?

All the teachers in this study unanimously said that technology should play a central role in the performing arts curricula, with the majority believing it ensured music stayed relevant and was more engaging for students. Most teachers described practices in which technology was interwoven throughout, in opposition to previous literature that suggested that the use of technology in the classroom needed to improve (Henley, 2011) or that there should be improved teacher training (Dorfman, 2008). While this study offers a more current exploration of teachers' practices and their use of technology, the findings remain incongruent with a recent Department for Education report suggesting the use of technology in music specifically was not effective and consistent (Department for Education, 2021). This may be because of the differing conceptualisations of technology when discussing its use in the classroom.

Despite describing that they used technology widely throughout their curriculum, many teachers in this study were critical of their use of technology, and many had the desire to include more, particularly opportunities to use discipline-specific technology, in line with findings from previous studies (Gall, 2017). The teachers identified clear benefits to technology use, mainly in relation to students' use of technology rather than their own.

Although the teachers in this study were unanimous in their desire to include technology, there were several first- and second-order barriers (Ertmer, 1999) to their use in the classroom. They primarily described several monetary constraints, which meant budgeting for technology impacted their ability to give students access, something seen previously in music specifically (Crawford, 2009). Beyond simply these monetary constraints, there were more pervasive issues where teachers described their own disciplinary needs regarding technology clashing with school policy which was, for many of the teachers, moving towards 'platformisation' (Nieborg and Poell, 2018; Perrotta et al., 2021; Van Dijck, Poell and De Waal, 2018), meaning access to discipline-specific hardware was more challenging. Previous literature has suggested that this results from a lack of esteem given to the performing arts (Crawford, 2010). Teachers in this study suggested the tensions were due to a school-level misunderstanding of the disciplinary subculture around the use of technology.

As a result of the barriers to access, many teachers described place and space-based barriers, often having to move to a specific classroom to use technology. For the majority of teachers this necessitated an approach that saw technology offered as a distinct topic within their topic-based curriculum (Anderson, 2021), with access to technology impacting on their chosen curriculum sequencing. This separation of music technology appeared to create second-order barriers (Ertmer, 1999) where teachers considered technology in and of itself and outside the norm of teaching and learning in the performing arts classroom.

Alongside access-based concerns, the teachers all described a sense of caution when it came to the amount of technology they implemented, suggesting a technology versus practical work dualism where technology was seen as the opposite side of a continuum with practical music or drama-making at one end and technology use at the other. This demonstrated clear second-order barriers (Ertmer, 1999), which led to many teachers ensuring that they limited the amount of time spent using technology within their curricula. Given the use of technology in

the classroom necessarily implies some measure of change (Ertmer and Ottenbreit-Leftwich, 2010). For teachers whose practices and beliefs appear fundamentally linked to their disciplinary identity (Bernstein, 1990), it was perhaps to be expected that they approached the use of technology with a level of caution.

7.1.4. RQ4: What Is the Potential Role of Technology in Facilitating Teachers' Visions of Purpose in the English Secondary Performing Arts Curriculum?

The findings of the initial study demonstrated that there were two primary potential roles of technology, first, its role as pedagogical support through which students gain musical competencies, and second, as a way of offering students an understanding of discipline-specific technology itself. The teachers all believed that technology should underpin pedagogy, suggesting that practice-based understandings of the use of technology accord with previous calls in the literature to ensure that technology was a secondary consideration to pedagogy (Savage, 2010). Where the teachers in this study differed was from those who have called for technology to be 'seamlessly woven into the fabric of the music class' (Tobias, 2016), with teachers instead seeing technology as a way of bridging the gap that has been said to exist between 'real-world practices' of the performing arts industry and their classroom-based curriculum (Burnard and Haddon, 2015).

By using critical design ethnography (Barab et al., 2004), this thesis found that technology, when used as an orchestration tool (Dillenbourg, 2013), offers a potential way of supporting teachers to enact their chosen pedagogies in the classroom. Where previous literature suggests that classroom orchestration offers a way of supporting practices within the wider complexities of the classroom (Dillenbourg and Jermann, 2010), the findings from the second study suggest it also offers a way of supporting teachers to enact their chosen pedagogies while remaining able to adhere to school policies. While this offers potential, it was also clear, however, that the chosen orchestration tool ultimately needs to be designed carefully to support the teachers' chosen pedagogies, and there were several affordances that were specifically found to support this, while others were found to risk further dampening teachers' practices.

Socio-digital orchestration tools, such as the one designed for this project, were successful in that they offered support to enact student-centred and constructivist pedagogies in the

classroom, which the teachers in the first study identified as aims within their curriculum models. They offered a way of supporting students to organise and run a live event, and focusses on teaching students the process rather than the end product, something seen to be important to teachers in the first study. Using existing technologies, while initially done to support the teacher to reconfigure their use in the classroom, ultimately offered several affordances that supported the teacher in utilising it in the classroom. First, it offered awareness and flexibility (Kharrufa et al., 2013) for the teacher, supporting visibility beyond simply making the invisible visible (Balaam, 2013), moving away from information flow, and instead offering ways to make individual assessment decisions while supporting collaborative working. Using an existing tool offered a certain sense of 'kudos' to both the teacher and the students, who all saw it as an example of industry-standard technology which both suited her pedagogy and engaged the students. This seemed to stem from a sense of familiarity, something that has long been discussed as a key principle for the design of usable systems (Dix, 2007), although not often something applied to the design of educational technologies. This sense of familiarity for the students meant that it remained unintrusive (Dillenbourg et al., 2011), with the teacher able to support both digitally mediated and in-person collaboration and ways of working. This together supported the enactment of the teachers' chosen practices, as the focus remained on the pedagogy rather than on the technology, with the technology offering support in coordinating activities and pedagogies in the classroom.

The lighting proxies and, more specifically, the broker were used both as a way of orchestrating the use of discipline-specific technologies as well as a tool to aid teachers' classroom pedagogies (Song, 2021). Using the broker allowed the teacher to bring the teaching of stage lighting back into the classroom as the proxies and broker were safe and suitable for use by students while still allowing them to use industry-standard software and hardware. This use of industry-standard tools was discussed in the first study, with teachers wanting to introduce students to technologies used within the wider performing arts industry. Although visibility is a central aspect of orchestration (Kharrufa et al., 2013), in this case the teacher felt that the size of the proxies offered her a renewed sense of confidence to enact these pedagogies, not only because the students could remain in the classroom, but because mistakes both students and her own were less visible. This appeared somewhat of a paradox, giving her increased visibility with students in her classroom while decreasing the visibility of mistakes. This paradox is perhaps less surprising when considered against teachers' identified

signature pedagogies, that they encourage mistake-making and thus, the reduced visibility of mistakes was able to support and encourage experimentation and mistake-making in the classroom.

Although the socio-digital orchestration tool and the lighting proxies, together with the broker offered support for the teacher to enact their chosen pedagogies, the learning analytics tool, on the contrary, is used here as an orchestration tool (Rodríguez-Triana *et al.*, 2018) was not ultimately used in the teachers' practices after the initial evaluation. Although the teacher initially wanted to use the trace data from the socio-digital orchestration tool, the use of quantitative data within her practices was not congruent with her epistemic beliefs, particularly regarding the place of quantifiable data within performing arts pedagogies. For her, the main concern was a lack of trust in the data, something long considered by HCI researchers (Rieselsberger, 2005) but only recently within education as the use of AI in educational settings increases (Williamson, 2019).

Ultimately, technology offers the potential to support teachers' practices, particularly enabling them to enact their signature pedagogies (Shulman, 2005), therefore, offering a way to potentially ameliorate some of the concerns of the Dampened Curriculum where teachers' practices were altered to better suit school interpretations of macro level policies. This must be done carefully and sensitively however, particularly considering how it intersects with pedagogical beliefs; otherwise, it risks further dampening practices.

7.2. Limitations

This thesis intended to understand performing arts teachers' practices and beliefs about the English Secondary Curriculum before exploring the potential role of technology in supporting them to enact their chosen practices. The initial study exploring teachers' practices used semi-structured interviews as a research methodology, and as such, the data gathered relied on self-reporting. A possible improvement to understanding the complexities of their context and resulting practices might have been to observe their practices in the classroom to gain a further understanding and contribute to 'triangulation' of the data. This was not possible at the time due to COVID-19 restrictions limiting face-to-face research interactions.

The interviews were carried out with 16 participants, all of whom were qualified teachers working in English secondary schools teaching music, drama, or both. The participants were

recruited through an organisation that offered professional development support for performing arts teachers. Purposive sampling (Etikan, Musa and Alkassim, 2016) was used to ensure teachers were all current teachers of performing arts; however, although there is a mix of experience levels and schools, it was not intended to be a representative sample of all performing arts teachers in England. As such, the research is not generalisable beyond the specific population of teachers who participated in the interviews described in this study.

This research took an engaged and critical approach to exploring the role of technology and, in doing so, worked with a single teacher as part of a longitudinal critical design ethnography (Barab *et al.*, 2004). This necessarily limits the transferability of the findings regarding the designed technology interventions and the resulting implications for design, but this is mitigated by the depth and richness of the study that enables understanding of the study for future researchers. Due to the embedded and longitudinal nature of the second study, and having been a teacher of performing arts myself, means this study shared many characteristics with insider research (Humphrey, 2013). While this was beneficial to understanding the potential policies that may impact the teachers' practices, some presumptions in a shared perspective could be made possible. However, the awareness of representationality in the research made me acutely aware of the need to understand and present the context more broadly and yet more deeply. The teacher involved in this study also expressed gratitude for working together, as she felt that she had received a lot of 'help' in teaching the students over the months we worked together. This initially meant that she was reluctant to express criticisms of the process and the designs resulting in changes to the way these were elicited as part of the process. In future longitudinal and embedded studies, this could be addressed earlier in the research design.

The use of these engaged methods, such as critical design ethnography (Barab, 2004) and co-teaching (Nicholson et al., 2022), necessarily requires the researcher to be highly engaged in the process and aim for co-construction of knowledge (Koirala-Azad and Fuentes, 2009). As such, it is impossible to offer a detached understanding of the research findings. Using action research and co-teaching means that even if this research was repeated with the same teacher but another researcher, there would likely be a change in the findings, given the embedded and reflexive nature of the research. Thus, the findings are not generalisable, given both the

focus on one teacher and the importance of relationship building in the co-construction of knowledge and resulting co-designs.

7.3. Future Work

This thesis offered a potential causal mechanism, the Dampened Curriculum, as one tentative way to explain the difference in teachers' stated aims and their enacted practices within the performing arts classroom. In doing so, it offers one potential way to explain the current impact of educational policy (both school level and wider national policy) on the practices of teachers. It offered a detailed discussion of this in relation to performing arts teachers' practices, where it was argued that teachers' practices were dampened because of school-level interpretations of educational policy. The conceptualisation of teachers' practices as dampened aimed to scaffold the design and development technologies that supported teachers' practices and could potentially ameliorate some of the dampening effects described in the model. In this thesis, the conceptualisation of teachers' practices as dampened is specifically in the context of performing arts teachers' practices but creates the potential for future work to explore the applicability of this theory to teachers' practices in other disciplines, thus offering a way to similarly, explore the design of digital technology to support teachers' practices in disciplines beyond the performing arts. The considerations regarding the design of future technologies reported in this thesis were drawn from comparisons of the different designs used by the same teacher but remain highly context-dependent, having been carried out in one school. This creates possibilities for future work to build on this initial exploration to understand how these design considerations are applicable to other contexts, particularly the considerations of how wider policy may impact teachers' practices and, subsequently, the design of orchestration technologies. The dampened curriculum as a potential causal mechanism is one that was devised as a response to the current English educational policy environment. As an environment highly responsive to political changes, this could be said to be constantly in flux and as such warrants future work that considers the implications of a new policy on teachers' practices. One specific change not considered in this thesis is the very recent review of teacher training. Within the proposed model, initial teacher education will become initial teacher training with a defined curriculum based on evidence-led practices. This not only could be said to be a dampened curriculum in its own right, but the possible implications of this change in teachers' own education are also worthy of future exploration.

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Appendices

Appendix A – Consent Form for study 1.

Gig Academy

TEACHER CONSENT SHEET

I can confirm that (please tick as appropriate):

☐ I have read and understood the information sheet provided.

☐ I have been given the opportunity to ask questions about the project. I am happy with the answers I have been given.

☐ I understand that pictures and videos of my pupils and I may be taken during the project, and that this will be used to analyse the success of the project .

☐ I understand that the results from this project may be used as part of the writing up of this research in academic publications and reports.

☐ I understand that results from this project may be shared with other schools as examples of teaching and learning activities.

☐ I understand my pupils or I can withdraw their participation at any time without giving reasons.

☐ I understand that both my pupil's and my personal information will be treated as strictly confidential.

☐ I understand that other researchers who are part of this project can access the data providing they agree to preserve the confidentiality as specified in this form.

☐ I agree to my participation.

Participant's Statement:

I_____ agree that the research project has been explained to me to my satisfaction and I agree to take part in the study.

Signed: *Date:*

If you wish to contact the lead researcher, please use the details provided below:

Rebecca Nicholson
Open Lab, Newcastle University
r.nicholson5@ncl.ac.uk

Appendix B – Information Sheet – Study 1.

The Role of Technology in the Performing Arts Curriculum
INFORMATION SHEET

You are invited to take part in a research study entitled The Role of Technology in the Performing Arts Curriculum.

Please read this document carefully and ask any questions you may have before agreeing to take part in the study.

What is this project about?

The purpose of this study is to research the role of technology in teaching performing arts in the secondary classroom. You have been invited to take part in this study because you are a teacher of Performing Arts in a UK Secondary School.

Who is conducting and supervising this research?

The study is conducted by Rebecca Nicholson of School of Education, Communication & Language Sciences. It is supervised by Professor Caroline Walker-Gleaves from the School of Education, Communication & Language Sciences and Professor David Kirk from the School of Computing, both at Newcastle University.

What am I being asked to do?

If you agree to take part in this study, you will be asked to participate in an hour long workshop in which we will discuss and plan a lesson or activity using technology. You will then be asked to reflect on this lesson in a one-on-one interview. Your participation in this study will take approximately two hours. Once the research has been completed, I will debrief you on the main findings of the research via email or another meeting if you wish. You will also be given a full copy of the research paper that I aim to produce.

What information will you be collecting and who can access it?

We will video and audio record the workshop and transcribe it as well as the reflection after the lesson you teach. We would also like to have a copy of your lesson / activity plan.

All non-identifying information you provide, will be kept in a password-protected electronic database, tagged with an anonymous ID number. Identifying information, e.g. your name, contact details and date of birth will be kept on paper in a locked filing cabinet in Open Lab. The lab is kept locked when not in use. This means that any anyone with access to the electronic information will not be able to identify you as an individual. The only way to identify you as an individual is to access both the electronic records, and the paper records stored in the locked filing cabinet. It is very unlikely that anyone outside of the research team will be able to do this. We would like to upload your non-identifying information to a repository (the Open Science Framework) to be shared with other researchers. It is impossible for anyone to identify you as an individual from this information alone.

Your rights to access, change or move your information are limited, as Newcastle University needs to manage your information in specific ways in order for the research to be reliable and accurate under UK General Data Protection Regulations. If you withdraw from the study, Newcastle University will keep the information about you that has already been obtained. To safeguard your rights, the minimum personally-identifiable information will be used. You can find out more about how Newcastle University uses your information at http://www.ncl.ac.uk/data.protection/PrivacyNotice and/or by contacting Newcastle University's Data Protection Officer (Maureen Wilkinson, rec-man@ncl.ac.uk).

Who is funding this research?

This research is funded by the Engineering and Physical Sciences Research Council.

What if I change my mind or have questions?

You are free to decide whether or not to participate. If you decide to participate, you are free to withdraw at any time without any negative consequences for you.

You may decline to answer any questions or withdraw from the study without penalty of any kind. This can be done by contacting Rebecca Nicholson.

If you have any questions or concerns, please contact:

Rebecca Nicholson

Doctoral Trainee at Open Lab and School of Education, Communication and Language Sciences, Newcastle University
r.nicholson5@newcastle.ac.uk

Who should I contact if I wish to make a complaint?

Please contact my supervisor in the first instance:
Professor Caroline Walker-Gleaves
School of Education, Communication and Language Sciences, Newcastle University
caroline.walker-gleaves@newcastle.ac.uk

This study has been reviewed and approved by the School of Education, Communication & Language Sciences Ethics Committee at Newcastle University (date of approval:................)

Appendix C – Interview Schedule for Study 1.

Performing Arts Interviews

PERSONAL

What Performing Arts subject(s) do you teach?

What age group(s) do you teach?

How long have you been a Performing Arts teacher?

Why did you become a Performing Arts teacher?

Can you recall a specific moment when you realised you wanted to be a PA teacher?

Did your PA education influence the way you teach now?

CURRENT TEACHING

How are you finding teaching at the moment?

How are you currently teaching?

Are you teaching 'live' at all?

What technologies are you using to teach?

How have you found out about the specific technologies that you are using?

Do you think teaching using technology presents any problems specifically for the PAs?

CURRICULUM VIEWS

Can you talk me through your school music curriculum?

Who designed the curriculum?

What was the starting point? (i.e. outcomes / content / skills / big questions etc)

What influenced the design of the curriculum?

Are there things you don't cover but wish you could?

If so, why don't you currently cover these?

How has your curriculum changed following the new OFSTED guidelines?

Have other policies or initiatives influenced the design of the PA curriculum?

What is your school curriculum policy like?

Has this had an influence on the way you designed the PA curriculum?

Have other school policies influenced the design of the PA curriculum?

Did the content of KS4 / KS5 courses influence the design of the KS3 curriculum?

If so, how?

What Is your view about the knowledge rich curriculum?

How do you think this applies to performing arts?

CURRENT STATE OF PA EDUCATION

How do you think PA is currently viewed as a subject in UK secondary schools?

How is PA viewed in your school?

What do you think the role of PA education is within the curriculum?

PEDAGOGICAL STANDPOINT

Can you talk me through how you implement that curriculum in the classroom?

What pedagogies do you use in the classroom (e.g. group work / project work etc)

Do you choose the pedagogies or are they decided as part of the curriculum design?

CURRICULUM EFFECT ON PEDAGOGY

Do you feel like you have the freedom to teach in the way you want to in your classroom?

If so, what allows you to have that freedom?

If not, what stops you from having that freedom?

Has the new focus on curriculum changed the way you teach in the classroom?

     If so, how?

How are you measuring the 'impact' of the curriculum?

     Has this been decided centrally as a school or by the department?

     Appendix D – Teacher Consent form for Study 2.

Gig Academy
TEACHER CONSENT SHEET

I can confirm that (please tick as appropriate):

- [ ] I have read and understood the information sheet provided.

- [ ] I have been given the opportunity to ask questions about the project. I am happy with the answers I have been given.

- [ ] I understand that pictures and videos of my pupils and I may be taken during the project, and that this will be used to analyse the success of the project .

- [ ] I understand that the results from this project may be used as part of the writing up of this research in academic publications and reports.

- [ ] I understand that results from this project may be shared with other schools as examples of teaching and learning activities.

- [ ] I understand my pupils or I can withdraw their participation at any time without giving reasons.

- [ ] I understand that both my pupil's and my personal information will be treated as strictly confidential.

- [ ] I understand that other researchers who are part of this project can access the data providing they agree to preserve the confidentiality as specified in this form.

- [ ] I agree to my participation.

Participant's Statement:

I _____ agree that the research project has been explained to me to my satisfaction and I agree to take part in the study.

Signed: *Date:*

If you wish to contact the lead researcher, please use the details provided below:

Rebecca Nicholson
Open Lab, Newcastle University
r.nicholson5@ncl.ac.uk

Appendix E – Pupil / Parent Consent form for Study 2

Gig Academy
CONSENT SHEET

I can confirm that (please tick as appropriate):

☐ I have read and understood the information sheet provided.

☐ I have been given the opportunity to ask questions about the project. I am happy with the answers I have been given.

☐ I understand that that pictures and videos may be taken during the project, and that this will be anonymised.

☐ I understand that results from this project may be used as part of the writing up of this research in academic publications and reports.

☐ I understand that results from this project may be shared with other schools as examples of teaching and learning activities.

☐ I understand I can withdraw my participation at any time without giving reasons.

☐ I understand that my personal information will be treated as strictly confidential.

☐ I understand that other researchers who are part of this project can access the data providing they agree to preserve the confidentiality as specified in this form, this will include an external examiner.

☐ I voluntarily agree to my participation

Participant's Statement:

I_____ agree that the research project has been explained to me to my satisfaction and I agree to take part in the study.
Signed: **Date:**

Parent / Guardian's Statement:

I_____ agree that the research project has been explained to me to my satisfaction and I agree to allow my child to take part in the study.

Signed: **Date:**

If you wish to contact the lead researcher, please use the details provided below:

Rebecca Nicholson
Open Lab, Newcastle University
r.nicholson5@ncl.ac.uk

Appendix F – Parent / Guardian Information Sheet for Study 2

Gig Academy

PARENT / GUARDIAN INFORMATION SHEET

We would like to invite your child to participate in a Newcastle University project to explore how taking part in planning an event can improve musical knowledge as well as 21st Century Skills (these are communication, cooperation, creativity and critical thinking).

What is this project about?

Event planning is something that requires a lot of different skills as well as specialist knowledge of the type of event to be planned. In this project we want to find out whether people can benefit from working with local musicians to plan music events as an activity at school. We want to see whether, through planning an event, their 21st Century Skills (communication, cooperation, creativity and critical thinking) improve, as well as their knowledge of music.

Who is conducting this research?

This research is being conducted by Rebecca Nicholson, a Doctoral Trainee from Newcastle University.

What is your child being asked to do?

Your child has been asked to take part because they have chosen to take BTEC Music. The project will involve your child spending their BTEC Music lessons as part of a team that plans an event for a local professional musician. The project will require them to work in cooperation with other people in a team to complete group tasks as well as completing individual tasks. These tasks will be things like sending emails, writing meeting minutes, creating promotional material and learning to mix live music. These are all things that they will need to do in order to organise the event. The project tasks are intended to be challenging so that your child makes progress and improves their skills but mainly the tasks should be fun!

What if my child feels upset or uncomfortable while taking part?

If your child feels upset or uncomfortable at any time then they should let the researcher (Rebecca Nicholson) aware or their teacher. They will be able to provide a place for your child to sit quietly.

What information will you be collecting and who can access it?

We will ask your child to create a portfolio of documents (e.g. emails / meeting minutes) that they create in order to plan the event. This portfolio will be used as evidence for the BTEC Music course. We will also keep all these portfolios and analyse them to see how your child's skills improve over the time they spend planning the event. We will also take photos and audio recordings of the work they do.

All the information that we gather will be held securely in Open Lab. This information will be anonymized so that we can look for trends in the data but cannot tell which child is which. I (Rebecca Nicholson) will be able to access the information as well as my supervisors here at Newcastle University.

How will the information your child gives be kept and used?

The information collected will be used to inform research to find out if planning a music event improves your child's 21st Century Skills as well as their knowledge of music. The results of the analysis of their submitted work will be shared in a paper that other academics will read. The anonymous data might also be shared with other schools to help them understand how they can best teach their pupils.

Who is funding this research?

This research is funded by the Engineering and Physical Sciences Research Council.

What if I change my mind or have questions?

At any time, including during and after the project, you or your child has the right to ask questions, stop their participation, or withdraw their data completely. This can be done by contacting Rebecca Nicholson.

If you have any questions or concerns, please contact:

Rebecca Nicholson
Open Lab, Newcastle University
r.nicholson5@ncl.ac.uk

Who should I contact if I wish to make a complaint?

Please contact one of my supervisors in the first instance:

Caroline Walker-Gleaves
Education, Communication & Language Sciences, Newcastle University
Caroline.Walker-Gleaves@newcastle.ac.uk

Tom Bartindale
Open Lab, Newcastle University
Tom.Bartindale@ncl.ac.uk

Ahmed Kharrufa
Open Lab, Newcastle University
Ahmed.kharrufa@ncl.ac.uk

Appendix G – Information Sheet Pupils for Study 2

Gig Academy
PARTICIPANT INFORMATION SHEET

We would like to invite you to participate in a Newcastle University project to explore how taking part in planning an event can improve musical knowledge as well as 21ˢᵗ Century Skills (these are communication, cooperation, creativity and critical thinking).

What is this project about?

Event planning is something that requires a lot of different skills as well as specialist knowledge of the type of event to be planned. In this project we want to determine whether people can benefit from working with local musicians to plan music events as an activity at school. We want to see whether, through planning an event, their 21ˢᵗ Century Skills (communication, cooperation, creativity and critical thinking) improve, as well as their knowledge of music.

Who is conducting this research?

This research is being conducted by Rebecca Nicholson, a Doctoral Trainee from Newcastle University.

What am I being asked to do?

You are being asked to take part because you have chosen to take BTEC Music. The project will involve you spending your BTEC Music lessons working as part of a team to plan an event for a local professional musician. The project will require you to work with other people in your team to complete group tasks as well as completing individual tasks. These tasks will be things like sending emails, writing meeting minutes, creating promotional material or learning to mix live music for example.

The project tasks are intended to be challenging but mainly should be fun!

What if I feel upset or uncomfortable while taking part?

If you feel upset or uncomfortable at any time then please make the researcher (Rebecca Nicholson) aware or your teacher. They will be able to provide you a place to sit quietly.

What information will you be collecting and who can access it?

We will ask you to create a portfolio of things (e.g. emails / meeting minutes) that you create in order to plan the event. This portfolio will be used as evidence for your BTEC Music course. We will also keep all these portfolios and analyse them to see how your skills improve over the time you spend planning the event. We will also take photos and audio recordings of the work you are doing.

All the information that we gather will be held securely and I (Rebecca Nicholson) will have access to it as well as my supervisors here at the University.

How will the information I give be kept and used?

The information collected will be used to inform research to find out if planning a music event improves your 21ˢᵗ Century Skills as well as your knowledge of music. The results of the analysis of your submitted work will be shared in a paper that other academics will read. The anonymous data may also be shared with other schools to help them understand how they can best teach their pupils.

Who is funding this research?

This research is funded by the Engineering and Physical Sciences Research Council.

What if I change my mind or have questions?

At any time, including during and after the project, you have the right to ask questions, stop your participation, or withdraw your data completely. This can be done by contacting Rebecca Nicholson.

If you have any questions or concerns, please contact:

Rebecca Nicholson
Open Lab, Newcastle University
r.nicholson5@ncl.ac.uk

Who should I contact if I wish to make a complaint?

Please contact one of my supervisors in the first instance:

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Appendix H – BTEC Unit 2 Assignment Brief

BTEC Assignment Brief

GiG ACADEMY

Qualification	BTEC Level 1/Level 2 First Award in Music BTEC Level 1/Level 2 First Certificate in Music BTEC Level 1/Level 2 First Extended Certificate in Music BTEC Level 1/Level 2 First Diploma in Music
Unit number and title	Unit 2: Managing a Music Product
Learning aim(s) (For NQF only)	Learning Aim A: Plan, develop and deliver a music product. Learning Aim B: Promote a music product Learning Aim C: Review the management of a music product
Assignment title	**Gig Academy: Managing a music product**
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	Your school want to put on a gig on 25th April 2019 and have asked for your help to organise it . The gig needs to have musicians from both school and the local area. The first half of the gig should be students from the school and the second half of the gig should be a local band. You will need to form a production office with specialist teams who are responsible for specific tasks. Together you will plan, promote and review the event with the rest of your group; making decisions together and taking responsibility for specific job roles. You will need to consider all factors and technical logistics which affect the form and content of the gig.

Task 1	As a class, form a Production Team to plan and deliver the gig. Within your production team you need to form four specialist groups who will all have their own area of expertise and associated tasks. At your production meetings you should consider your target audience, the content/material for your live show and how you propose to video it, the availability of the venue and musicians/performers and time constraints relating to the equipment and setting up. You will also need to remember to take any copyright issues into account if you are including cover versions of existing songs, and to include rehearsal time in your plans. Your development activities as part of the team organising the show will include: • Contributing to scheduled meetings • Identifying the target audience

	• Inviting musicians to perform • The venue • Availability of equipment and any outside support • Availability of performers • Reviewing the progress of the work, making any changes necessary to meet deadlines and achieve your aims
Checklist of evidence required	Throughout the planning process you need to keep evidence of your contribution. You need to keep a digital portfolio of your work. It is a good idea to keep as much evidence as possible, making sure you show a variety of skills and knowledge. Your portfolio may contain: • rough outline ideas, either in the form of written notes or diagrams • notes from discussions and meetings • schedules/timetables • lists of required resources and equipment • set lists • notes or recordings from rehearsals and/or other preparations • equipment diagrams and floor plans • room and resource booking sheets • teacher/tutor observation and/or interim assessment records. • the final video of your live show

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
2A.D1	Make a significant and imaginative contribution to the planning of a music product, making considered and insightful decisions in relation to the demands of the work.
2A.M1	Make a positive and consistent contribution to the planning of a music product, making considered decisions in relation to the demands of the work.
2A.P1	Make a positive contribution to the planning of a music product.
2A.D2	Demonstrate a sustained and effective input into the development and delivery of a music product, making a significant contribution to the success of the work.
2A.M2	Demonstrate a positive and consistent input into the development and delivery of a music product that is integral to the success of the work.

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2A.P2	Demonstrate a positive input into the development and delivery of a music product.

Task 2	You should each create at least one element of a promotional pack for the Live Show. The pack should contain essentials such as a press release for assemblies, notices for registration and a press release for the VLE, as well as other promotional aspects such as social media campaigns, posters and tickets.
Checklist of evidence required	The Production Office needs to create a promotional pack which may include: • Posters • Assembly and registration notices. • Press releases • Other promotional material to be decided by the production team. ○

Criteria covered by this task:

Unit/Criteria reference	To achieve the criteria you must show that you are able to:
2B.D3	Create imaginative promotional material appropriate to the product that communicates information effectively to the target audience and shows awareness of industry practice.
2B.M3	Create promotional material appropriate to the product that communicates essential information to the target audience and shows awareness of industry practice.
2B.P3	Create promotional material appropriate to the product that communicates essential information to the target audience.

Task 3	You should review the work you and your Production Team have completed throughout the project. This could be in the form of a written report, recorded discussion or presentation. You should pay particular attention to any strengths and weaknesses evident, not just in the planning and management of the project, but also in the artistic content and audience response when watching the video of the Live Show You should also make suggestions for improvement or development in terms of future projects.
Checklist of evidence required	A written report, recorded discussion or presentation.

Criteria covered by this task:

Unit/Criteria reference	To achieve the criteria you must show that you are able to:

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Appendix I – Curriculum Plan for Study 2

	Dates	Lighting	Sound	FoH	BoH
Week 1	**Wed 9th Jan**	Intro to Gig Academy Intro to teams Team request	Intro to Gig Academy Intro to teams Team request	Intro to Gig Academy Intro to teams Team request	Intro to Gig Academy Intro to teams Team request
	Thurs 10th Jan	Intro to Basecamp	Intro to Basecamp	Intro to Basecamp	Intro to Basecamp
	Fri 11th Jan	Team meetings – to do lists for each team Full production office meeting – decide priorities.	Team meetings – to do lists for each team Full production office meeting – decide priorities.	Team meetings – to do lists for each team Full production office meeting – decide priorities.	Team meetings – to do lists for each team Full production office meeting – decide priorities.

Week 2	**Wed 16th Jan**	Research promotions	Research promotions	Research promotions Arrange promotions meeting	Research promotions
	Thurs 17th Jan	Promotions meeting	Promotions meeting	Promotions meeting	Promotions meeting
	Fri 18th Jan	**EXPERT WORKSHOP** **FoH 1** **NOT IN**	**EXPERT WORKSHOP** **FoH 1** **NOT IN**	**EXPERT WORKSHOP** **FoH 1** **NOT IN**	**EXPERT WORKSHOP** **FoH 1** **NOT IN**
Week 3	**Wed 23rd Jan**	Promotions	Promotions	Promotions	**EXPERT WORKSHOP** **BoH 1**
	Thurs 24th Jan	Promotions **NO LESSON**	Promotions **NO LESSON**	Promotions **NO LESSON**	Promotions **NO LESSON**

	Fri 25th Jan	Promotions	Promotions	Promotions	Promotions
Week 4	**Wed 30th Jan**	Promotional material designs	Promotional material designs	Promotional material designs	Promotional material designs
	Thurs 31st Jan	Promotions **RESEARCH PROMOTIONS DEADLINE**	Promotions **RESEARCH PROMOTIONS DEADLINE**	Promotions **RESEARCH PROMOTIONS DEADLINE**	Promotions **RESEARCH PROMOTIONS DEADLINE**
	Fri 1st Feb	Promotional material designs	Promotional material designs	Promotional material designs	Promotional material designs

		Promotional material designs	Promotional material designs	Promotional material designs	Promotional material designs
Week 5	Wed 6th Feb				
	Thurs 7th Feb	Lighting tasks / Challenges **PROMOTIONAL DEADLINE TO FOH**	Sound Tasks (Self Directed) **PROMOTIONAL DEADLINE TO FOH**	Finalise promo plans **PROMOTIONAL DEADLINE TO FOH**	**SOUND WORKSHOP 1** **PROMOTIONAL DEADLINE TO FOH**
	Fri 8th Feb	**SOUND WORKSHOP 1**	Sound Tasks (Self Directed)	**DEADLINE FOR PROMO PLAN Give Feedback to Rest of team.**	BoH Tasks (Self Directed)
Week 6	Wed 13th Feb	**EXPERT WORKSHOP Lighting 1**	**EXPERT WORKSHOP Sound 1**	**PROMOTIONAL DEADLINE TO OPEN LAB DESIGN – FIRST DRAFT**	BoH Tasks (Self Directed)

		Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	SOUND WORKSHOP 1	BoH Tasks (Self Directed)
	Thurs 14th Feb	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	SOUND WORKSHOP 1	BoH Tasks (Self Directed)
	Fri 15th Feb	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	**PROMOTIONAL DEADLINE TO OPEN LAB DESIGN – FINAL**	BoH Tasks (Self Directed)
			HALF TERM		
Week 7	**Wed 27th Feb**	EXPERT WORKSHOP **Lighting 2**	EXPERT WORKSHOP **Sound 2**	Feedback from TN re: print promotions	EXPERT WORKSHOP **BoH 2**
	Thurs 18th Feb	Lighting Tasks (Self Directed)	EXPERT WORKSHOP **Sound 3**	SOUND WORKSHOP 2	EXPERT WORKSHOP **BoH 3**

	Fri 29th Feb	SOUND WORKSHOP 2	Sound Tasks (Self Directed)	**EXPERT WORKSHOP** **FoH 2**	BoH Tasks (Self Directed)
Week 8	**Wed 6th March**	**EXPERT WORKSHOP** **Lighting 3**	**EXPERT WORKSHOP** **Sound 4**	**EXPERT WORKSHOP** **FoH 3**	**EXPERT WORKSHOP** **BoH 4**
	Thurs 7th March	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	FoH Tasks (Self Directed)	SOUND WORKSHOP 2
	Fri 8th March	SOUND WORKSHOP 3	Sound Tasks (Self Directed)	SOUND WORKSHOP 3	SOUND WORKSHOP 3
Week 9	**Wed 13th March**	SOUND WORKSHOP 4	Sound Tasks (Self Directed)	**EXPERT WORKSHOP** **FoH 4**	BoH Tasks (Self Directed)

	Thurs 14th March	**EXPERT WORKSHOP** **Lighting 4**	**EXPERT WORKSHOP** **Sound 4**	FoH Tasks (Self Directed)	BoH Tasks (Self Directed)
	Fri 15th March	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	**SOUND WORKSHOP 4**	BoH Tasks (Self Directed)
4Week 10	**Wed 20th March**	**EXPERT WORKSHOP** **Lighting 5**	**EXPERT WORKSHOP** **Sound 5**	**EXPERT WORKSHOP** **FoH 5**	**EXPERT WORKSHOP** **BoH 5**
	Thurs 21st March	**SOUND WORKSHOP 5**	Sound Tasks (Self Directed)	FoH Tasks (Self Directed)	BoH Tasks (Self Directed)
	Fri 22nd March	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	FoH Tasks (Self Directed)	**SOUND WORKSHOP 4**

Week 11	**Wed 27th March**	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	<mark>SOUND WORKSHOP 5</mark>	BoH Tasks (Self Directed)
	Thurs 28th March	**DEADLINE FOR LIGHTING PLANS**	**DEADLINE FOR SOUND PLANS**	FoH Tasks (Self Directed)	<mark>SOUND WORKSHOP 5</mark>
	Fri 29th March	**MIC PLOT DEADLINE FOR OWN TRACK**	**MIC PLOT DEADLINE FOR OWN TRACK**	**MIC PLOT DEADLINE FOR OWN TRACK**	**DEADLINE FOR STAGE PLANS** **MIC PLOT DEADLINE FOR OWN TRACK**
Week 12	**Wed 3rd April**	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	FoH Tasks (Self Directed)	BoH Tasks (Self Directed)
	Thurs 4th April	Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	FoH Tasks (Self Directed)	BoH Tasks (Self Directed)

		Lighting Tasks (Self Directed)	Sound Tasks (Self Directed)	FoH Tasks (Self Directed)	BoH Tasks (Self Directed)
	Fri 5th April				
		EASTER			
Gig Week	**Wed 24th April**	Last minute organisation	Last minute organisation	Last minute organisation	Last minute organisation
	Thurs 25th April	**GIG DAY!!**			